A COMPARATIVE STUDY OF PAIRED READING TECHNIQUES USING PARENT, PEER AND CROSS-AGE TUTORS WITH SECOND YEAR JUNIOR SCHOOL CHILDREN.

by

G. R. DIAPER

Thesis submitted for the degree of Doctor of Philosophy in the University of Kent at Canterbury.

Christ Church College,
Canterbury.

September 1989

A B S T R A C T

This study compares the effectiveness of "classical" paired reading with simultaneous and independent reading over a period of eight weeks using parent tutors with second year junior children from two schools in South-east England. Two groups of second year junior children were also tutored by their peers and by cross-age fourth year junior children respectively using the "classical" approach. Each group comprised 15 pupils paired with 15 tutors. A control group received normal reading tuition within the classroom context. The effectiveness of the reading technique was measured after nine weeks and after one year in terms of reading accuracy, reading rate and comprehension by the Edinburgh Reading Test. Qualitative data were obtained from the completion of structured questionnaires by parents, children and teachers.

The relevance to paired reading of other variables is also examined. In particular conceptual tempo, an aspect of cognitive style, as measured by Kagan's Matching Familiar Figure Test, attitude to reading and to school, and estimate of own reading ability as measured by the Dundee Attitude to Reading Test (ATR2 Global).

The results confirm the indications from other largely "non-controlled" studies that the "classical" approach is superior to other variations of paired reading. In the present study the group tutored by parents in "classical" paired reading was significantly superior to the other experimental groups and the control. The use of peer group tutors in a junior school context also received substantial empirical support from the study; the use of cross-age tutors less so. Both conceptual tempo and the attitude dimensions of the DART are shown to be associated with progress in reading accuracy and comprehension. Also of importance is the finding that the less able reader appears to benefit to a greater extent than the more able reader from being tutored in reading by either parent or child, especially in the long-term context.

A C K N O W L E D G E M E N T S

Thanks are due to the headteachers and staff of the schools who willingly co-operated with the author during the period of this research study. Grateful thanks are also extended to Dr. Robert Povey and Dr. Stephen Clift for their advice and to the many hours which they spent reading and discussing successive drafts; to Mrs. Ann Southern for her advice on statistical procedures; to the staff of Christ Church College library Canterbury, and in particular Mrs.Ruth Lewis for her assistance in obtaining source material. Finally to my wife Margaret, without whom this thesis would not have been posible, many thanks for your patience and tolerance.

C O N T E N T S

		Page
ABSTRACT		i
ACKNOWLEDGEMENTS		ii
TABLE OF CONTENTS		iii
LIST OF TABLES		xvii
LIST OF FIGURES		xxiv
CHAPTER 1:	INTRODUCTION.....	1
1.1.	Paired reading: the inadequacy of research.....	2
1.2.	Research aims of the present study.....	5
CHAPTER 2:	HISTORICAL BACKGROUND.....	9
2.1.	Parent/teacher collaboration: historical trends.....	9
2.1.i.	Early 20th century.....	9
2.1.ii.	Later developments.....	10
2.1.iii.	Recent DES reports.....	12
2.1.iv.	Contemporary surveys of parent/teacher co-operation.....	13
2.1.v.	Reasons for recent attempts to foster parent/teacher co-operation.....	22
2.2.	Teachers' attitudes to parents.....	24
2.2.i.	A model of parent/teacher relations.....	27

2.3. Time for a greater parental role.....28

2.3.i. A word of caution.....30

2.4. A summary.....32

CHAPTER 3 CLASSICAL AND VARIANT FORMS OF PAIRED READING.....33

3.1. Plan of chapter.....33

3.2. Remedial reading: the contemporary scene.....34

3.3. Origins of paired reading.....39

3.3.i. The two components of "classical" paired reading.....40

3.3.ii. Topping's variation.....42

3.4. The definitive "classical" paired reading technique.....42

3.5. Main variations of classical paired reading....45

3.5.i. Shared reading.....45

3.5.ii. Relaxed reading.....47

3.6. Miscellaneous variations of classical paired reading.....49

3.6.i. Young and Tyre's study.....49

3.6.ii. Barrett's technique.....51

3.6.iii. Bryan's technique.....52
3.6.iv. Pause, prompt and praise.....52
3.6.v. Henk's technique.....52
3.6.vi. Paired reading "readers" using variations of classical paired reading.....55

3.7. Empirical studies of classical paired reading..58
3.7.i. Plan of section.....58
3.7.ii. Topping's quantitative analysis.....58
3.7.iii. Topping's qualitative analysis.....60
3.7.iv. Other analyses.....62
3.7.v. The comprehension score controversy.....63
3.7.vi. Deficiencies in methodology.....64

3.8. Comparative studies.....66
3.8.i. Comments on comparative research.....68
3.8.ii. Topping's consumer guide.....71

3.9. An evaluation of classical and variant paired reading techniques.....72
3.9.i. Advantages for children.....72
3.9.ii. Advantages for parents.....74
3.9.iii. Advantages for teachers.....74
3.9.iv. General advantages.....74
3.9.v. General disadvantages.....75
3.9.vi. Other disadvantages.....75
3.9.vii. Greening and Spenceley's objections to classical paired reading.....77

3.9.viii. Response to Greening and Spenceley.....78

3.9.ix. Claimed advantages for relaxed reading.....81

3.10. Reasons for apparent success of classical paired reading.....82

3.11. Peer and cross-age tutoring.....86

3.11.i. Its origins.....86

3.11.ii. Experience of child-tutoring in the USA.....88

3.11.iii. Experience of child-tutoring in the UK.....90

3.11.iv. Claimed advantages/disadvantages for peer and cross-age tutoring of reading.....95

3.11.v. "Ideal" type of tutor.....95

3.11.vi. The benefit to tutors.....96

3.11.vii. Need for rigorous research.....97

CHAPTER 4: PAIRED READING IN THE CONTEXT OF MODELS OF READING.....99

4.1. Plan of chapter.....99

4.2. Lack of clarity of definition.....99

4.3. Models of reading acquisition.....102

4.3.i. A psycholinguistic model.....102

4.3.ii. A developmental model.....112

4.3.iii. A behavioural model.....115

4.3.iv. A humanistic model.....116

4.3.v. The primary skills model.....124

4.4. A definition of children's reading acquisition.....127

4.5. A paradigm of children's reading acquisition..128

4.6. Cognitive style.....134
4.6.i. Conceptual tempo.....136
4.6.ii. Conceptual tempo in teaching.....139
4.6.iii. Conceptual tempo and reading.....140
4.6.iv. Attempts to modify children's conceptual tempo.....147
4.6.v. Conceptual tempo and the psycholinguistic model of reading acquisition.....151

4.7. The final paradigm.....152

CHAPTER 5: ASSUMPTIONS AND STATEMENT OF HYPOTHESES....154

5.1. Plan of chapter.....154

5.2. Plan of section.....155
5.2.i. Practitioners versus researchers: a tension...155
5.2.ii. The status of contemporary educational research.....157
5.2.iii. Aims and problems of research in schools.....158
5.2.iv. Methodology: quantitative versus qualitative..160
5.2.v. The danger of dichotomizing viewpoints.....164
5.2.vi. Complementarity of viewpoints.....166

5.2.vii. A summary.....167

5.3. The Hawthorne Effect: a definition.....169

5.3.i. Explanations for the Hawthorne Effect. 170

5.3.ii. Parson's conclusions.....172

5.3.iii. Alternative conclusions.....173

5.3.iv. Research studies of the Hawthorne Effect.....176

5.3.v. The John Henry Effect.....178

5.3.vi. Conclusion.....179

5.4. Construction of hypotheses.....182

CHAPTER 6: THE PILOT STUDY.....190

6.1. Introduction.....190

6.1.i. The target population.....190

6.1.ii. Aims of the pilot study.....191

6.1.iii. A procedural explanation.....192

6.1.iv. Assumptions of the pilot study.....193

6.1.v. Other similar studies.....193

6.2. Method.....194

6.2.i. The sample.....194

6.2.ii. Tests used.....194

6.2.iii. Topping's classical paired reading technique..195

6.2.iv. Topping's instruction booklet.....198

6.2.v. Procedure.....198

6.3. Results.....199

6.3.i. Tabular data.....199

6.4. Discussion and conclusions.....202
6.4.i. General comments.....202
6.4.ii. Benefits to school.....203
6.4.iii. Pilot study as a guide to main study.....205

CHAPTER 7: METHODOLOGY.....223

7.1. Design and procedure.....223
7.1.i. The research design.....223
7.1.ii. Target population.....224
7.1.iii. Initial approaches to schools.....229
7.1.iv. Formal arrangements with schools.....231
7.1.v. Construction of groups.....232
7.1.vi. Treatment schedule.....236
7.1.vii. Test programme.....237

7.2. Tests used in the present study: reading test.....238
7.2.i. The Edinburgh Reading Test Stages 2 and 3 (ERT).....238
7.2.ii. Reading age scores.....251

7.3. Tests used in the present study: attitude tests.....252
7.3.i. Preliminary comments.....252

7.3.ii. The Dundee Attitude to Reading Test ATR2 Global (DART).....254

7.3.iii. Conclusion.....261

7.4. Tests used in the present study: the Matching Familiar Figure Test (MFFT).....262

7.5. Resource logistics and construction of questionnaires.....270

7.6. Procedure.....273

7.6.i. Browning C.....273

7.6.ii. Upstead P.....273

7.7. Data analysis.....256

CHAPTER 8: RESULTS.....288

8.1. Summary data.....288

8.1.i. Edinburgh Reading Test summary data.....289

8.1.ii. Assessment of changes in reading ability.....300

8.1.iii. The MFFT summary data.....305

8.1.iv. The Dundee Attitude to Reading Test ATR2 Global summary data.....307

8.2. Hypotheses.....313

8.2.i. Multivariate analysis.....354

8.3. Additional data.....355

8.3.i. Delayed and proficient readers compared.....355
8.3.ii. The relationship between sex and test measures.....366
8.3.iii. The DART and membership of a public library...369
8.3.iv. Ewing and Johnstone and the present study: a comparison.....370

8.4. Qualitative data: Upstead P.....372

8.5. Qualitative data: Browning C.....384

CHAPTER 9: DISCUSSION.....390

9.1. General findings.....390

9.2. Discussion of hypotheses.....391
9.2.i. Hypotheses 1(a), 1(b), 2(a), 2(b), 3, 4, 5 and 6.....391

9.3. Additional comments on hypotheses 1 to 6.....395
9.3.i. Progress times normal.....395
9.3.ii. The Hawthorne Effect.....396
9.3.iii. Reading comprehension.....399
9.3.iv. Reading rate.....400
9.3.v. Peer and cross-age tutoring: extraneous variables and other considerations.....401

9.4. Hypothesis 7: the MFFT.....403

9.5. Hypothesis 8: library membership.....404

9.6 Hypothesis 9: attitude to reading.....405

9.7. Hypothesis 10: attitude to school.....407

9.8. Hypothesis 11: estimate of own ability.....408

9.9. Hypothesis 12: change in attitude.....408

9.10. Hypothesis 13: the long-term effect of paired reading..... 409

9.11. Characteristics of sub-groups.....411

9.11.i. A comparison between delayed and more able readers.....411

9.11.ii. The MFFT.....414

9.11.iii. Sex: differential scores.....416

9.12. Comments arising from the qualitative data....417

9.13. Some implications for the practice of paired reading 418

9.13.i. The superiority of classical paired reading...418

9.13.ii. Peer and cross-age tutoring.....421

9.13.iii. Conceptual tempo.....422

9.13.iv. The test instruments.....422

9.13.v. Spin-off benefits.....423

CHAPTER 10: CONCLUSIONS.

10.1. Summary of main conclusions.....427

10.1.i. General comments.....431

10.2. Further research.....433

REFERENCES.....438

APPENDICES.....471

1. The Hawthorne Effect experiments.....471

2a. Analysis of comments by child care staff on paired reading sessions.....478

2b. Summary of data from checklists completed by child care staff.....483

2c. Summaries of video and audio recordings and observations conducted by the author.....487

2d. An analysis and discussion of the Topping video.....494

3. An introduction to paired reading for teachers.....498

4. An introduction to paired reading for parents.....505

5. Copy of a letter to parents before start of project.....508

6. Copy of a letter sent to the headteacher of one of the participating schools before the start of the main research study (It also formed the substance of the letter to the second school).....509

7. An analysis by Keith Topping of early studies of paired reading conducted between 1981 and 1984.....513

8. The parents' handbook.....515

9. A typical diary page for completion by tutors.....521

10. An example of a questionnaire for completion by teachers.....522

11a. Parent questionnaire.....524

11b. Checklist for completion by the author during the course of visit to homes.....526

12a. Child questionnaire.....528

12b. Child tutor questionnaire.....529

13. Copy of a letter sent to each child after the completion of the paired reading project.....530

14. Copy of a letter sent to parents after the completion of the paired reading project acquainting them with the preliminary results.....531

15. An instruction sheet given to child tutors....534

16. An instruction sheet for pupils being tutored by peer or cross-age tutors.....535

17. The Dundee Attitude to Reading Test ATR2 Global (Ewing and Johnstone).....536

18. Comment by Upstead P teachers on completion of the main study.....539

19. Comment by Upstead P parents on completion of the main study.....540

20. Comment by Browning C teachers on completion of the main study.....543

21. Comment by peer tutors on completion of the main study.....544

22. Comment by cross-age tutors on completion of the main study.....546

23. Miscellaneous comments: Browning C pupils/tutors.....548

24a. Structured parent questionnaire analysis.....549

24b. Structured child questionnaire analysis.....551

24c. Paired reading checklist completed during visits to Group 1 children: Upstead P.....552

24d. Analysis of open-ended observations made by the parents, teachers and children based on diaries and comments from visits and telephone conversations: Upstead P.....554

24e. Structured cross-age tutor questionnaire analysis: Browning C.....555

24f. Structured peer tutor questionnaire analysis: Browning C.....557

24g. Structured pupil questionnaire analysis with peer tutor: Browning C.....559

24h. Structured pupil questionnaire analysis with cross-age tutor: Browning C.....560

24i. Analysis of open-ended observations made by teachers and children based on diaries and comments: peer group Browning C.....561

24j. Analysis of open-ended observations made by teachers and children based on diaries and comments: cross-age group Browning C.....562

24k. Analysis of same sex/opposite sex pairings in Groups 5 and 6: Browning C.....563

25. A survey of some reading tests in current use.....564

26. A critique of the Neale Analysis of Reading Ability.....571

27. A critique of the Hunter-Grundin Literacy Profiles.....577

28. A critique of the Primary Reading Test.....579

29. A critique of the New Macmillan Reading Analysis (NMRA).....580

30. A summary of the classical paired reading technique together with the simultaneous and independent modes.....593

31. Summary of statistical tables in Chapter 8....595

L I S T O F T A B L E S

Page

1. Analysis of paired reading tuition sessions Sep/Dec 1985 (pilot study).....201
2. Differences in months between pre and post study scores on the NARA (pilot study).....202
3. Experimental groups: nomenclature and tutors.....288
4. Chronological age: means and sd's of all groups.....291
5. ERT Stages 2 and 3 RQ means and SD's for all groups for Times 1, 2 and 3.....292

6a. ERT Stage 2 means and sd's for subtest A for all groups for Times 1, 2 and 3.....293

6b. ERT Stage 2 means and sd's for subtest B for all groups for Times 1, 2 and 3.....294

6c. ERT Stage 2 means and sd's for subtest C for all groups for Times 1, 2 and 3.....295

6d. ERT Stage 2 means and sd's for subtest D for all groups for Times 1, 2 and 3.....296

6e. ERT Stage 2 means and sd's for subtest E for all groups for Times 1, 2 and 3.....297

6f. ERT Stage 2 means and sd's for subtest F for all groups for Times 1, 2 and 3.....298

7. ERT Stages 2 and 3 raw data means and sd's for all groups for Times 1, 2 and 3.....299
8. ERT Stage 2 RQ means and sd's for Upstead P and Browning C children in experimental groups for Times 1, 2 and 3.....300

9. 't' test data: ERT Stages 2 and 3 RQ means and SD's for all groups for Time 2-1 ..... Page 302

10. 't' test data: ERT Stage 2 RQ means and SD's for all groups for Times 3-1 303

11. 't' test data: ERT Stage 2 RQ means and SD's for all groups for Times 3-2 304

12. Means and sd's of reading quotients using three different reading tests for Upstead P children over period indicated 304

13. Pearson Product Moment correlation coefficients between the three reading test RQ's (see Table 12) .. 304

14. MFFT means and SD's for latency to first response, error count and Salkind's coefficient I for all 2nd year children 307

15. DART means and SD's for all groups for Times 1 and 3 310

16. DART ATR2 Global: mean changes in attitude scores for all groups between Times 1 and 3 311

17a. Distribution of scores in DART attitude categories for Times 1 and 3 for 2nd year children .. 312

17b. Distribution of scores in DART self-assessment categories for Times 1 and 3 for 2nd year children .. 312

18. Distribution of scores in DART attitude to school categories for Times 1 and 3 for 2nd year children .. 312

19. One-way analysis of variance: ERT Stage 2 RQ comparative means and sd's for Groups 1 to 7 for Times 2-1 316

20a. 't' test data: ERT Stage 2 comparative means and SD's for Time 2-1 between Group 1 and Groups 2, 3, 5 and 6 and between Groups 5 and 6..... Page 317

20b. 't' test data: ERT Stage 2 comparative means and sd's for Time 3-1 between Group 1 and Groups 2, 3, 5 and 6 and between Groups 5 and 6.....318

20c. Summary of 't' test scores in relation to change in mean ERT RQ between Times 1 and 2 for all possible pairs of experimental groups.....319

21. 't' test data: ERT Stage 2 sub-tests A and B comparative means and SD's for Time 2-1 between Group 1 and Groups 2, 3, 5 and 6 and between Groups 5 and 6.....320

22. 't' test data: ERT Stage 2 sub-tests C and D comparative means and SD's for Time 2-1 between Group 1 and Groups 2, 3, 5 and 6 and between Groups 5 and 6.....321

23. 't' test data: ERT Stage 2 sub-tests E and F comparative means and SD's for Time 2-1 between Group 1 and Groups 2, 3, 5 and 6 and between Groups 5 and 6.....322

24a. 't' test data: ERT Stage 2 RQ comparative means and SD's for Time 2-1 between the control and experimental groups.....325

24b. 't' test data: ERT Stage 2 RQ comparative means and sd's for Time 3-1 between the control and experimental groups.....326

25. 't' test data: ERT Stage 2 sub-tests A and B comparative means and SD's for Time 2-1 between the control and experimental groups..... Page 327

26. 't' test data: ERT Stage 2 sub-tests C and D comparative means and SD's for Time 2-1 between the control and experimental groups.....328

27. 't' test data: ERT Stage 2 sub-tests E and F comparative means and SD's for Time 2-1 between the control and experimental groups.....329

28. 't' test data: ERT Stages 2 and 3 comparative means and SD's for Time 2-1 between the control group and the child tutors (Groups 7 and 8).....330

29. 't' test data: ERT Stage 2 RQ comparative means and SD's for Times 1, 2, 3, 2-1 and 3-1 between reflective and impulsive children as measured by the MFFT.....333

30. 't' test data: ERT Stage 2 sub-tests A and B comparative means and SD's for Times 1, 2, 3, 2-1 and 3-1 between reflective and impulsive children as measured by the MFFT.....334

31. 't' test data: ERT Stage 2 sub-tests C and D comparative means and SD's for Times 1, 2, 3, 2-1 and 3-1 between reflective and impulsive children as measured by the MFFT.....335

32. 't' test data: ERT Stage 2 sub-tests E and F comparative means and SD's for Times 1, 2, 3, 2-1 and 3-1 between reflective and impulsive children as measured by the MFFT.....336

33. 't' test data: ERT Stage 2 RQ comparative means and SD's for Times 1, 2, 3, 2-1 and 3-1 between library/non-library members..... Page 339

34. 't' test data: ERT Stage 2 RQ comparative means and SD's for Times 1, 2, 3, 2-1 and 3-1 between children with a -ve attitude to reading and children with a +ve attitude to reading as measured by the DART.....340

35. One-way analysis of variance: ERT Stage 2 RQ means and SD's for Times 1, 2 and 3 for DART attitude to reading categories.....341

36. Pearson product moment correlation coefficients for Times 1 and 3 for the DART quotient and Times 1, 2 and 3 for the ERT Stage 2 RQ.....342

37. 't' test data: ERT Stage 2 RQ comparative means and SD's for Times 1, 2, 3, 2-1 and 3-1 between children with a -ve attitude to school and those with a +ve attitude to school as measured by the DART.....344

38. One-way analysis of variance: ERT Stage 2 RQ means and SD's for Times 1, 2 and 3 for DART attitude to school categories.....345

39. 't' test data: ERT Stage 2 RQ comparative means and SD's for Times 1, 2, 3, 2-1 and 3-1 between children with a -ve estimate of their own ability and those with a +ve estimate of their own ability as measured by the DART.....348

40. One-way analysis of variance: ERT stage 2 RQ means and SD's for Times 1, 2 and 3 for DART estimate of own ability categories.....349
41. 't' test data: DART means and SD's for Time 3-1 for children with a -ve or moderate attitude to reading and for all subjects respectively.....350
42. "Progress times normal" gains in ERT RQ.....354
43. 't' test data: difference in mean RQ's for Times 1, 2, 3, 2-1, 3-1 and 3-2 between children with an initial (T1) RQ equal to or <90 and those with an initial (T1) RQ >90.....356
44. 't' test data: MFFT comparative means and SD's of Salkind's impulsivity quotient for children measured with ERT RQ's equal to or <100 and those with RQ's >100 for Times 1, 2 and 3.....361
45. 't' test data: DART comparative means and SD's of children measured with ERT Stage 2 RQ's equal to or <90 and RQ's >90 for Times 1 and 3.....362
46. A Chi-square table comparing children with an ERT Stage 2 RQ equal to or <90 and those with an RQ >90 with DART attitude to school categories for Time 1..363
47. A Chi-square table comparing children with an ERT Stage 2 RQ equal to or <90 and those with an RQ >90 with DART attitude to school categories for Time 3..364
48. A Chi-square table comparing children with an ERT Stage 2 RQ equal to or <90 and those with an RQ >90 with DART estimate of own abilities for Time 1.....365

49. A Chi-square table comparing children with an ERT Stage 2 RQ equal to or <90 and those with an RQ >90 with DART estimate of own abilities for Time 3.....366

50. 't' test data: ERT Stage 2 comparative means and SD's between boys and girls for Times 1, 2 and 3....367

51. 't' test data: DART comparative means and SD's between boys and girls for Times 1 and 3.....368

52. DART comparative means and SD's during the test development period (obtained from Ewing and Johnstone).....368

53. One-way analysis of variance data: ERT Stage 2 means and SD's for pupil/tutor sex dyads for Time 2-1.....369

54. One-way analysis of variance data: ERT Stage 2 means and SD's for pupil/tutor sex dyads for Time 3-1.....369

55. 't' test data: DART comparative means and SD's between members of a public library and non-members for Times 1 and 3.....370

56. A comparison between the % of children falling within the DART categories during the development of the DART and during the present study for Times 1 and 3.....371

57. A comparison between the % of children falling within the DART estimate of own ability categories during the development of the DART and during the present study for Times 1 and 3.....371

58. A comparison between the % of children falling within the DART attitude to school categories during the development of the DART and during the present study for Times 1 and 3.....372
59. An analysis of the total number of reading sessions for Groups 1, 2 and 3 and the mean frequency of sessions per child for parent tutored groups.....374
60. Pearson product moment correlation coefficient between the ERT Stage 2 RQ and the number of reading sessions per child for parent tutored groups.....375
61. Analysis of mean length of session for parent tutored groups 1, 2 and 3.....375
62. Analysis of visits and telephone calls for parent tutored groups.....376
63. An analysis of the mean number of paired reading sessions for child tutored Groups 5 and 6: Browning C.....384

LIST OF FIGURES

1. Miller's (1981) paradigm of children's reading acquisition.....130
2. Suggested amendment to Miller's paradigm of children's reading acquisition.....153
3. Graph showing ERT mean reading quotient scores for experimental groups at Times 1, 2 and 3.....353

4. Difference in mean ERT RQ between children with an initial (T1) RQ equal to or <90 (sub-group 1) and those with an initial RQ >90 (sub-group 2) for times 2-1 and Times 3-1.....357

ERRATA

Page 2, line 16, 'inappropriate' NOT 'innappropriate'

" 6, line 18, delete 'of reading'

" 40, line 16, 'Koven' NOT 'Karen'

" 59, line 4 from foot of page, 'normal' NOT 'nomal'

" 60, line 4, 'children's' NOT chilren's'

" 77, line 8, 'simultaneous' NOT 'simutaneous'

" 136, line 12 from foot of page,'implies' NOT 'applies'

" 146, line 11 from foot of page, 'performance' NOT 'performence'

" 172, line 7, full stop at end of sentence.

" 223, line 9 from foot of page, delete 'NB'

" 239, line 5 from foot of page, delete 'in his'

" 264, line 15, 'convergent' NOT 'converging'

" 273, line 8, insert '' sign before '100'

" 282, line 13, 'manoeuvred' NOT 'manoevred'

" 287, line 5, insert " after 'obtained'

" 292, line 15, delete '+'

" 306, line 7 from foot of page delete '0.58' insert '0.62'

" 321, delete last line "comparisons...two-tail"

" 333, insert after 'Reflective:' 'N = 31'. Insert after 'Impulsive:' 'N = 35'

" 338, lines 3 and 4 from foot of page, insert '-' sign before the correlation coefficient.

" 359, line 3, '<90' NOT '<70'

" 368, lines 4 and 5 from foot of page, delete 'and attitude to reading respectively'

" 375, line 3, insert 'RQ' after 'Stage 2'

" 385, line 9 from foot of page, insert ')' after '67'

" 403, line 6, delete ')' after '>0.01'

line 11, delete 'see Tables 68ff'

" 404, line 8, delete '12' insert '13'

" 426, line 2, 'have' NOT 'heve'

" 433, line 3 from foot of page, 'present' NOT 'psesent'

" 437, line 3, 'and' NOT 'abd'

" 480, line 9 from foot of page, delete 'Mark' insert 'Maria'

CHAPTER 1

INTRODUCTION

In 1976 a comparatively obscure journal gave an account of what the author called "paired reading" with a group of three junior age children (see Morgan, 1976). The technique was simple to acquire. In basic terms, which will be amplified below, it involved the pupil choosing a book which the pupil and the tutor then read aloud together, attempting to achieve a high degree of synchrony in their enunciation. This element of the technique was called "simultaneous reading". After an initial practice period to enable the "partners" to achieve competence, the pupils were instructed to signal to their tutor when they felt able to change over to reading out loud on their own. This element of the technique was called "independent reading". Whilst Morgan's initial concern was to use the technique to improve the reading attainment of "retarded readers" it has subsequently been used for a much wider population of children.

In spite of a further study of paired reading published in 1979 (see Morgan and Lyon, 1979) little attention appears to have been given to the technique, either by educational psychologists or teachers until 1982. Between 1982 and 1984 interest gathered momentum, but 1985 was the year when enthusiasm for paired reading seems to have reached a peak and, since then, the number of published

and reported studies has marginally "tailed-off", though the enthusiasm for the technique is still widespread (Topping 1987a).

1.1. PAIRED READING: THE INADEQUACY OF RESEARCH

Along with many other innovations in education, after a peiod of euphoria which Pumfrey (1987) refers to as the "bandwagon effect", new techniques need to be placed under closer scrutiny which should lead to a maturer evaluation of their effectiveness. The present study sets out to offer some evidence in that evaluative process in relation to paired reading. Whilst there are substantial grounds for the claims made for the effectiveness of paired reading, there are a number of important aspects of many of the research studies which prompt a need for additional research. In particular, many of the studies have suffered from methodological weaknesses including innappropriate measures, small samples, the lack of control groups and an overall absence of rigour in part deriving from research conducted by teachers inexperienced in research methods.

That large numbers of teachers have devoted much time and enthusiasm to paired reading schemes within their schools is one of the most promising aspects of paired reading a fact which Pumfrey (1986) has noted and welcomed particularly where it has enhanced parent/teacher co-operation. However, whatever value can be attached to teacher's small-scale research, their lack of research expertise makes them vulnerable to charges of distortion and to criticism. Indeed few of their studies can be regarded as rigorous, though the cumulative evidence will need to be

evaluated. This situation is reflected in the sources from which information is obtained, very few of which are published in journals commanding academic standing.

Topping (1986a), who has probably been more closely involved in the development of paired reading than anyone else, concludes that the evaluative research of paired reading lacks rigorous design and scientific quality. He confirms that the bulk of it has been conducted by practitioners in education rather than research workers in university settings. Both Topping (1986a) and Miller et al (1986) urge further research using random allocation and control groups and the scrutiny of long-term outcomes for more participants over longer periods (see also Burdett. 1986). It is hoped that this study will go some way to assist in achieving this.

Further research is very desirable on three additional counts. Firstly the popularity of paired reading tends to vary among the geographical regions of the UK. It has been adopted by many schools in South Wales, the Midlands and Yorkshire with the blessing of their education authorities but it has been slow to take off in the south of England. This is difficult to explain though Heath (1980), who conducted paired reading research within a group of ILEA schools, found that the ILEA were unenthusiastic about endorsing it. Whether a similar situation holds for other south of England LEA's is open to question but with the already demonstrated benefits of paired reading it is difficult to understand why such a valuable aid to young children's reading acquisition has been neglected. If

lingering doubts about the validity of paired reading studies are responsible for this situation it is essential to avoid the technique being labelled just another fad and passing into oblivion.

Secondly further research is needed to counter exploitation of the paired reading technique by educational publishers. It could be expected that educational publishers should be prompted by more than commercial motives, but such publications as Paired Storybooks (Gillham, 1985) are lamentably lacking a research basis; a more detailed critique will be provided later. Morgan (1985) argues that the provision of special readers for paired reading defeats the whole ethos of the technique which is based on children choosing the books they want to read.

Finally a more cogent argument for further research into paired reading must be the apparent failure of a plethora of remedial reading techniques to produce a lasting improvement in the reading performance of delayed readers. There is no doubt that the literature review will demonstrate the complacency and despair which has bedevilled most remedial reading techniques over many years. For this reason it seems important to document a little more fully the general ineffectiveness of remedial reading.

A note of caution is sounded by Pumfrey (1986). In his opinion the paired reading strategy is not the panacea that its more fervent advocates have suggested. He judges that "On balance it merits the attention of those interested in minimizing children's reading difficulties ." and "... contains the potential for many developments, but

care is needed." It is his opinion that a demonstration that paired reading makes a unique contribution to improving the attainments of children with reading difficulties remains to be demonstrated.

1.2. RESEARCH AIMS OF THE PRESENT STUDY

The general aim of the present study is to address the concerns described above and to try to avoid some of the deficiencies in design and methodology in previous studies of paired reading. The summary of chapters provided below will show how the more specific aims are derived.

In chapter 2 the ebb and flow of the "partnership" between parent, child and teacher from the early decades of this present century is portrayed in detail. The paramount need for such a survey will become evident because of the increasingly crucial part played by parents in their children's education particularly demonstrated in paired reading. The neglect of this relationship until recently will be documented.

Chapter 3 outlines the origins of paired reading and goes on to discuss research into the technique. The review emphasises that paired reading arrived on the educational scene at a time when remedial reading strategies for delayed readers were a demonstrable failure. A survey of the literature will describe the "classical" paired reading approach of Morgan (1979) and Topping (1985a). The survey will go on to show that competing claims that modified or deviant forms of paired reading are as effective as the technique developed by Morgan and Topping are unsubstantiated. Secondly the claims that children's

comprehension progresses at a markedly greater rate than their overall reading progress is open to question. Thirdly, the use of peer or cross/age children as tutors, insofar as paired reading is concerned, is in its infancy and consequently at present research is very limited. Finally claims that initial reading gains persist into the longer term need to be examined.

Chapter 4 is concerned to develop a definition and a model of reading acquisition to form a theoretical underpinning for paired reading. Various models of reading acquisition will be described. Miller's (1981) composite paradigm incorporating elements from each of these models is used as a basis for discussion. Modifications will be made to Miller's paradigm derived from a further consideration of the individual models. In addition a review of the literature relating to the cognitive style "conceptual tempo" will show that it may subserve an important function in children's reading acquisition of reading and hence there is a need to incorporate it in Miller's paradigm.

NB: Miller (1981) refers to his composite "model" as a "paradigm". In the interests of clarity therefore individual "models" of reading acquisition will continue to be termed "models" and the composite "model" developed from Miller's "paradigm" will continue to be termed a "paradigm".

Chapter 5 deals with the assumptions of the present study and a statement of the hypotheses. It will consider the arguments for the respective merits of quantitative and qualitative research techniques in education and identify the emphasis to be made in the

present study. The chapter will also develop a rationale for assumptions about the operation of the Hawthorne Effect in small-scale studies.

Chapter 6 will provide a detailed account of the pilot study preparatory to the main study and conclude with recommendations for the conduct of the main study.

Chapter 7 outlines the methodology adopted for the main study. The chapter will also provide a critique of test instruments to be used in the main study. Because of the importance of identifying a suitable test a number of reading tests in current use have been analyzed at length and a justification is made for the final choice. The aim will be to provide if possible a more accurate assessment of comprehension relative to a reading accuracy score than has been achieved in previous paired reading studies. Attitude to reading tests are also examined with the emphasis on the Dundee Attitude to Reading Test ATR2 Global. Finally the Matching Familiar Figure Test is described as the measure for conceptual tempo.

Arising from this brief synopsis the specific aims of the present study are summarized here.

(a) To make comparisons between the effectiveness of paired reading with 'deviant' methods which claim that either one of the components of paired reading, that is INDEPENDENT reading or SIMULTANEOUS reading, is equally as effective.

(b) To make a comparison between the relative effectiveness of parents acting as tutors and peer or cross-age children acting as tutors.

(c) To examine unfounded speculation about long-term gains.

(d) To determine whether impulsive children as compared with reflective children benefit in terms of reading progress from the structured reading programme which paired reading provides.

(e) To examine attitude to reading, attitude to school and estimates of own ability and their links with reading performance.

(f) To provide structured and open-ended questionnaires to augment the quantitative data obtained from test instruments and to provide evidence of the degree and quality of parental participation.

CHAPTER 2

HISTORICAL BACKGROUND

2.1. PARENT - TEACHER COLLABORATION: HISTORICAL TRENDS

To gain an informed understanding of the implications of the growing enthusiasm for paired reading it is important to place the trend in an historical context. The benefits claimed for paired reading are more significant than are indicated by the mere improvement in reading scores. It will be argued that the co-operation between parents and teachers which this technique demands is substantially another phase in the ebb and flow of the relationship over nearly a century.

2.1.i. Early 20th century

There are at least two enlightened documents which refer to parental co-operation with teachers just after the turn of the century. The Board of Education Code of Regulations for Public Elementary Schools (1904) urges that schools should enlist, as far as possible, the interest and co-operation of the parents and the home in the elementary curriculum, though the Board of Education Report to the Consultative Committee (1906) regrets, in a reference to the "working classes" that "... the co-operation of parents cannot yet be counted on to go very far...". Tizard et al (1981) refer to the pioneer ideas of Margaret McMillan, who encouraged parental involvement in primary schools in Deptford south-east London during the second decade of this century. She provided parents' rooms within schools and

encouraged teachers to visit parents in their homes. There does not appear to be any evidence that these pioneering efforts were expanded in any systematic way though, no doubt, quietly and unobtrusively, teachers did continue this practice without any official acknowledgement.

2.1.ii. Later developments

The Hadow Report (Board of Education, 1931) on nursery and infant schools notes that some schools had set up parents' associations but they had a distinctly Victorian ethos with teachers dispensing advice to "ignorant" parents. Very limited concern was being expressed about children's home backgrounds and their attainment in school. Sharrock (1968) quotes a study undertaken by Hughes (1934) into "Discrepancies between results of intelligence tests and entrance examinations to grammar schools." It tentatively suggests that an interaction between home and school might be responsible and Burt (1947), quoted in Sharrock (1968), also made reference to this possibility. Waller (1961), writing about the early thirties, concludes that "... parents and teachers usually live in conditions of mutual distrust and enmity..." and that they are natural enemies predestined each for the discomfiture of the other. Studies, such as those of Hughes (1934), were probably instrumental in posing questions about parent/teacher co-operation which bore fruit, if tardily, in the post-war years. Indeed, the war years, as Williams (1970) comments, brought to light that, in spite of seventy years of compulsory education, a large proportion of young men and women were unable to read or write.

In May 1944 concern about the quality of education led to the setting up of a committee for parent/teacher co-operation which initiated research conducted and reported by Wall (1947). The final report was based on replies to questionnaires, dealing with the possible benefits of parent/teacher co-operation, sent to all schools in Nottinghamshire in 1945. In summary, the need for co-operation was felt where a child's emotional and moral development was concerned and where he was encountering difficulties with his lessons. Co-operation was deemed to be valuable at all periods of school life. That little impetus to parent/teacher relations was given by this report is probably accounted for by the inability of teachers to specify other than in a "singularly vague and generalized manner" what the aims of such co-operation should be. Indeed teachers' endorsement of such co-operation should be judged along with their reservations about its precise benefits and drawbacks and that over one-third believed it would lead to criticism of the teacher at home! Thus any fruit of pre-war concern was slow to develop.

Tizard et al (1981) refer to a booklet produced by the Ministry of Education in 1959 recommending guidelines for primary education which makes no mention of parental involvement. Wolfendale (1983) reports that there is a consensus that there was virtually no parent/school contact prior to the 1960's and "... in many a school one saw a notice 'no parents beyond this point'..." Sadly, in isolated cases, in my experience, this is still true. Clements and Alexander (1975) are of the same conviction when they

conclude that, in the early and middle 1960's, parental involvement in the direct educational process was almost non-existent. However it is noteworthy that Morris (1966), in a useful book dealing with standards and progress in reading, produced evidence of a connection between parental encouragement and the reading attainment of primary age children.

2.1.iii. Recent D.E.S. reports

Wolfendale (1985a) states that "Each of the reports on education and child services from Plowden to Warnock on special education ... has drawn attention to and emphasised the potential of collaboration between professionals and parents to enhance children's development and learning." She notes that these reports include Plowden (DES, 1967), Bullock (DES,1975), Court (DES and DHSS,1976), Taylor (DES,1977) and Warnock (DES,1978). Bullock, for example, is in no doubt about the value of parental involvement in children's early reading and he urges careful thought to its nature and to the attitudes concerned with it. It would appear that, in terms of parental involvement, the response to these reports was somewhat patchy; indeed Rogers (1980), in a similar review, observes that the most dispiriting aspect of successive reports was the failure to take effective action in implementing greater parental involvement. Tizard et al (1981) aver that, from the early seventies, the enthusiastic advocates of parental involvement were educational theorists, not teachers. This may be open to question, but, whatever the source of the impetus, they note that in 1975 for the first time the DES

selected parental involvement in education as a priority for research.

2.1.iv. Contemporary surveys of parent/teacher co-operation

A good guide to the contemporary state of parent/teacher co-operation is the series of reports which evaluated the success of the Liverpool Parent Support Programme during the years 1982 to 1984 (Liverpool Education Department, 1982-1984). Forty per cent of teachers now regard the programme more favourably. Even so, responses to a questionnaire were disappointing. For example, whilst there was general agreement among teachers that parental involvement was important and desirable, response towards "Do you feel the scheme was of value? " was polarized, though admittedly this may reflect on the scheme itself rather than the general principle. In addition there was strong agreement with such expressions of opinion as "Parents don't know enough to be meaningfully involved in curriculum matters" and mixed attitudes to "It is your job to work with children not parents" and "Parents should not be involved in the classroom". The report concludes that very little is yet being made in most schools of the myriad opportunities they have for involving parents in curriculum work and, perhaps surprisingly, they regret the lack of acknowledgement of the scheme from "the education office" in spite of the fact that the scheme was carried on under the auspices of the Liverpool Education Department.

Thomas (1987) presents an encouraging picture of parent/teacher co-operation in Oxfordshire where these efforts have been actively encouraged by the Education

Authority though it would be unwise to assume that this is happening nationwide. Thomas (1987) concludes on the basis of questioning 82 teachers that primary teachers in Oxfordshire have conceded the need for co-operation. All but one teacher had someone extra involved with them in the class for part of the week; in fact in nine out of ten cases this was usually a parent, almost exclusively a mother. Thomas is of the opinion that the move to integrate children with special needs is partly responsible for accelerating this co-operation.

Where reading is concerned, during the last five years, a growing number of school-based studies, together with some more rigorous research directed by University Departments of Education and Colleges of Higher Education, has demonstrated that, where parents, in most cases the mother, read with their children at home there is a significant progress in reading. It is worth mentioning that Pilling and Pringle (1978) note the relative scarcity of investigation into the fathers' role in the child's development compared with that of the mother. They conclude "... that it is not yet possible to answer specific questions about exactly how and when the father's influence is felt." They urge the need for further research. Perhaps there should be efforts commensurate with those which have gained mothers' co-operation to enlist the interest of fathers. Where parents generally are concerned, initial indications are that, where children regularly read to them, their progress is such as to challenge the whole approach to the teaching of reading by professionals. There is of course

no doubt that the link between reading at home to parents and children's progress has been known for decades but the full impact and implications of this link have not been realised until recently. It is perhaps this challenge and the subsequent questioning of reading "methods" developed over the years which has brought a growing number of teachers to value the contribution which parents can make to the educative process.

The Thomas report, commissioned by the ILEA to report on ways of enhancing "... the confidence and achievement of children of primary age with particular reference to the needs of working class children." (ILEA. 1985), comments that "An important change has occurred in teachers' attitudes towards parents' involvement in the teaching of reading." Whereas a decade or so ago parents were warned that it was inadvisable for them to help their children to read because the anxiety engendered would make matters worse, they conclude that few teachers now go that far.

Stierer (1985) conducted a postal survey to examine the extent of volunteer reading help in primary schools in the UK. The random sample of five hundred schools reflected socio-economic and geographical diversity. Three hundred and eighty schools responded and over half of these reported that unpaid helpers assisted with school reading on school premises on a regular basis. Over 45% received help from parents which is a substantial increase over the 26% reported by Cyster et al (1980) in an NFER survey. The authenticity of the comparison is confirmed by the fact that

well over half the schools reported that assistance had begun since 1979. Headteachers reported the benefit of home/school co-operation as a strengthening of relationships and only 10% reported problems of staff resistance. On the negative side 47% of schools did not enlist help; many of these saw reading as a professional responsibility as distinct from volunteer help for cooking and swimming etc. There was also disagreement among the staff of these schools. It is interesting to note that Caudrey (1985) reports that the teachers' unions in general welcome and recognize the contribution of parents as long as they defer to the authority of the teacher which of course may vary considerably. As Griffith and Hamilton (1984) observe, there is evidence from both research and practice that, where parents help consistently with reading, their children gain both in reading age, quality of reading and enjoyment.

Branston and Provis (1984) report on extensive attempts to encourage parents to hear their children read throughout schools in West Glamorgan. They conclude that all children in the scheme benefited whatever their level of ability or the stage of reading they had reached. Morris (1972) concluded, after eleven years of research for the NFER, that good readers were made before ever they came to school in homes where mums and dads read and where homes were filled with books. Williams (1970) says of her that she rediscovered parents.

An important study of parent/teacher co-operation in children's reading is that of Hewison and Tizard (1980) and Tizard et al (1982) who conducted a study in primary

schools in the London Borough of Haringey. The project was a relatively unstructured reading intervention carried out between 1976 and 1978. It was undertaken at the behest of the LEA because of their anxiety about the scale of the reading problem within the borough. The aim was to compare the reading progress of groups of children being heard to read by their parents with control groups attending the same schools and thus to find out whether there was a causal relationship between active parental help and reading performance. One control group received additional teacher help to exclude the possibility of "time on task" functioning as an independent variable. All the children were in the top infants and bottom junior classes at the start of the project and parents were asked to help for two years. Six primary schools were involved and there was a random element built into the groupings. No training was provided but basic advice was given. Some further advice was offered to parents if, after the limited number of monitoring sessions, a particular aspect of parental tutoring appeared to be counter-productive. Otherwise the technique was very much left to the parents. Books were supplied and suggestions made as to how much children should read with a reminder to avoid attempting to read during favourite television programmes. The project took place in a very deprived part of Haringey and generally schools had a very serious reading problem. The area was ethnically very mixed.

The difference between the home tutored groups and the control groups did provide evidence for a causal

relationship between parents hearing their children read and improvement in reading attainment. On task tuition of itself, provided by additional teaching, did not appear to function as effectively as parental involvement. Hewison and Tizard (1980) draw the following conclusions:

(a) it is reasonable to involve nearly all parents in formal educational activities with infant and first year junior children even if the parents are non-literate or largely non-English speaking,

(b) most parents express great satisfaction in being involved in their children's reading as they experience their increased keenness and improved behaviour,

(c) the improvements noted in their reading are greater than when they were taught by highly competent specialist teachers and

(d) where children were failing to read the co-operation was very effective.

Typical of the response to the enthusiasm with which parents and teachers entered into the Haringey Project is that of a headmaster of a Northants junior school who initiated a similar but small-scale study. Perhaps however his reluctant conclusion that "Teachers' views on parents lack of expertise may therefore be overrated, and the benefits of bringing parents more fully into our confidence, while equipping them with a few skills and back-up guidance, may outweigh the possible dangers of pressuring children." are indicative of the conservatism of the teaching profession.

The Haringey Reading Project (Tizard et al, 1982) is often quoted with favour but it is difficult to judge how much influence it has had. For example, the Times Educational Supplement, in its editorial of 16.1.1981, writes about this piece of action research "... which - if it gets the attention it deserves - could explode a whole area of primary practice and way for a new and optimistic start. The message is simple. Involving parents systematically in teaching their children to read produced quite spectacular results."

Where home reading has been linked to home/school liaison teachers these special efforts to contact parents have proved very rewarding (see Hegarty et al, 1981; Tizard et al, 1981 and ILEA, 1968). Another positive note is sounded by Tizard et al (1981) who mention the value of making use of parents' work experiences in the school. Whether or to what extent the statutory requirement to involve parents as school governors will also be successful is not yet apparent though, in the writer's experience professional distancing is still possible.

By contrast to these essentially more encouraging comments Hannon and Cuckle (1984) report a study of sixteen infants and first schools in a northern LEA during 1981. Their findings are depressing. Only six headteachers allowed books home without expressing any reservation though they seemed to be warmly in favour of the practice. Only three out of twenty teachers interviewed allowed books home without expressing reservations. The majority of parents received little or no guidance nor was there any evidence of

systematic monitoring of children's reading at home. Out of 36 children questioned in classes where taking books home was allowed only five had done so the previous evening and only two could demonstrate that they had actually read at home. The authors stress there was nothing unusual about the interview date. They also point to a discrepancy between what is actually happening and what teachers claim is happening: that schools are already co-operating with parents hearing children read at home and the typical comment "We've been doing it all the time."

If further evidence is needed for the continuing unsatisfactory nature of parental involvement in schools the following comments are quoted from sources generally regarded as reliable. Crystal (1984) states that "... little is done to develop awareness of those most implicated in the welfare of the language handicapped child - his parents." Widlake (1984) can still talk about "... schools which act as if their walls were as thick as a medieval castle...". The Reading University Centre for the Teaching of Reading, in commenting on the involvement of many parents in their children's pre-school reading, asks "Is it reasonable to sever the parental involvement in children's education at age five?" (see Reading School of Education, 1983). Indeed Meighan (1981) reports that parents have been accused of "spoiling" infants' schooling for a child by admitting that he can already read. Perhaps a remark by Rutter (1985) is the best comment on such attitudes: "It is striking how very limited are the benefits stemming from intervention that are confined to the school environment."

At the extreme there are examples of schools which apparently encourage every conceivable liaison with parents. Many of the schemes are imaginative and could readily imply that there is really no problem and that teachers generally are welcoming parents with open arms. Meetings and socials, parent-teacher associations, parental assistance in classes as general helpers and some more active assistance in subjects such as cookery, handwork and games; open days, conferences, school booklets and brochures, book clubs, school bookshops, evening classes, notice boards, outings, easier access to school and to staff and more frequent interviews, mothers' clubs, reports on children's progress and advice of a general nature, etc. suggest that much progress has been made in parent/teacher relationships. DES (1968), Wood and Simpkins (1976), Birmingham Education Authority (1980), Tizard et al (1981) and Hegarty et al (1981) give typical descriptions of this kind of effort over the last two decades. But, as Topping (1984) caustically comments, "... asking a few middle-class parents to wash-up paint pots is no longer enough."

It is evident that most of the activities described are engaged in by middle-class parents with varying degrees of professional interest from teachers. It is quite possible for a teacher to be involved in these activities without a lowering of the professional barriers. Tizard et al (1981) conclude that the general run of parental involvement just described does nothing to raise children's achievement levels and only lip-service is paid to getting information to parents or to thorough-going

attempts to explain school organization in an accountable way.

Blyth (1967) was expressing a similar concern nearly twenty years ago and Wood and Simpkins (1976) observed that, even when parents attended a plethora of school functions they still felt like " 'useless lumps of pudden' ". Bacon (1976) concluded that parental involvement in school merely gives an illusion of local participation in the decision-making process and adds that perhaps professionals merely become more adept and subtle at manipulating children by manipulating parents. Quoting further anecdotal incidents Wood and Simpkins (1976) mention an example of a school which would pass with high marks in number of parent/teacher activities but where some parents were still referring wistfully to Mr. D, who frequently launched a blitz' on spelling and sent home word lists to be learned over the weekend. The authors claim that this attitude was typical; parents had attended all that was provided for them but still something was lacking. Perhaps such attitudes are symbolic of a deep-seated expression of a need by parents for greater involvement in their children's education.

2.1.v. Reasons for recent attempts to foster parent/teacher co-operation

It is not proposed to make a specific analysis of the reasons why there has been such a marked growth in the number of studies, deriving both from enthusiastic teachers and academics into the development of schemes which encourage parents to hear their children read at home.

Reference to the bibliography of Topping (1987a) will amply demonstrate this. However, apart from much genuine concern to strengthen parent/teacher relationships, it is submitted by way of a tentative proposition that the growing concern with the behaviour problems often linked with reading failure has provided some impetus to enlist parental co-operation. Rutter (1974), quoted in Morgan (1976), who initiated paired reading in the UK, concluded that emotional problems were a common primary cause of reading disability and he (Morgan) noted that anti-social disorders occurred among as many as one-third of backward readers. Research is clearly needed into their conclusions because it may well be that the relationship between maladjustment and reading disability has a more complex explanation. Heath (1980), in his unpublished paper, noted from his experience as an educational psychologist in South-East London, "The association between behaviour problems and reading failure noted in my casebook is supported in the literature in terms of "maladjustment" and its link with reading failure. (Little,1977)." It is probable therefore that it was not only the "despair" of many educationists with the lack of reading progress among working-class children and minority groups which gave rise to home reading, but to some extent also a growing alarm at the increasing incidence of emotional disturbance among primary age children in particular (see also Wall, 1947).

2.2. TEACHERS' ATTITUDES TO PARENTS

A closer examination of the traditional and changing attitudes of teachers to parents both generally and in relation to reading will provide an additional backcloth against which the apparent success of paired reading can be examined. It is said that some parents hesitate to help children with reading because they may interfere with what teachers do (see Williams, 1970) and this attitude has been bolstered by the parallel reluctance of many teachers to give parents access to school reading schemes. However this is a rather bland statement of a problem which hides a deeper malaise, since where this comparatively trivial aspect of the problem is concerned, teachers' fears are readily resolved in practice. Typically, the ILEA Centre for Urban Educational Studies (Elder, 1980) has found that teachers' fears were put at rest when they realised their professionalism was not in any way eroded by working with parents, but was rather enhanced.

The deeper-seated problem is their finding that teachers tend to see parents in inner-city schools as apathetic and unco-operative (also see Robinson, 1985). Weinberger et al (1986a and 1986b), commenting on the contemporary scene, conclude that schools often do not attempt to involve parents on any large scale in disadvantaged circumstances because of the belief that few parents will participate. A reason for this belief may derive from the false assumptions made by writers in the mid-sixties about the parents who frequently contacted

schools to enquire about their children's progress. These parents were predominantly middle-class. In retrospect it is easy to decry their conclusions that working-class parents were not interested in their children's education because they seldom visited the schools. Many such conclusions made during the decade seemed to have been "bogged-down" in class distinctions which were quite irrelevant to the particular issues. Such studies as Douglas (1964), Morton-Williams (1967) and Musgrove (1967) are typical of this period. John and Elizabeth Newsom's studies went some way to redress the imbalance when in 1963 they found that 82% of Nottingham working-class parents helped their children to read though they found the schools quite alien (see Newsom and Newson, 1963).

Some seven years earlier Granowsky et al (1979) were despairingly emphasising that parents will turn out if told they are wanted and needed and that teachers have valuable information to share with them about their child's learning needs. O'Sullivan (1980) did not overstate his case when he contended that "... pathological models of home background inform teachers' interpretations and explanations of minority group and working-class underachievement to the exclusion of factors within the school such as teacher expectation, curriculum and regime."

Tomlinson (1984) quotes what he regards as a not untypical teacher comment: "What can you expect from Johnny, just look at the family." Unfortunately some researchers reinforce this attitude. Rathbone and Graham (1981), for example, naively state "The social composition of an area

remains one of the safest indicators of its children." It should be an axiomatic procedure on the part of all professionals "managing" children in any capacity that when they encounter failure,ey ask "What am I doing wrong? " without recourse to specious excuses about lack of motivation, low IQ, home background or laziness, etc.

Haigh (1977) observes "... to assume that working-class parents are not interested (in their children's education) is one of the most damaging false assumptions which teachers and educationists can make." Hannon (1986), in an interesting study of how parents hear their children read, makes some enlightening conclusions. He notes that the implications of the study as a whole should strengthen confidence in parents' abilities to hear their children read. Tizard et al (1981) found that some parents declined invitations to visit school because they felt ill-at-ease and attribute this partly to the outcome of teachers' attitudes and the common view of professionals, not confined to teachers, that professional integrity should be defended against amateur involvement and criticism. Indeed, a belief that parents are not entitled to discuss the curriculum is all too common. One of the foremost objections by teachers to paired reading, which will be discussed below, is that the professionals should be in control of the reading process because parents would not be interested / literate/ persistent enough to co-operate (Topping and McNight,1984). Corbishley (1983) urges teachers to think solely in terms of the needs of children and parents, to swallow their pride and, where both teachers and parents are concerned, to treat

each other with respect, to listen to and be more open to each other and be humble enough to admit that "we are occasionally wrong". Thus we may not, she urges, be doomed to spend the next twenty years still just talking about working together.

However not all teachers by any means have buried their heads in the sand. Coventry LEA, who have been among the pioneers of community schools, note that it is their teachers who have concluded that relinquishing a monopoly on expertise and demystifying the curriculum, far from being a threat to the professionalism of teachers as mentioned above does in fact enhance it (see Widlake and Macleod, 1984). Their efforts to involve parents have been carefully planned and developed. Over the last twelve years or so a tradition of parental involvement has been established where children have been socialized into a school system where there are few barriers between home and school (see Widlake and McLeod, 1984). They point out that Coventry is arguably the leading city in Europe from the standpoint of community education and quote Eric Midwinter, who was largely responsible for many of the initiatives, as saying that "Study after study has pointed out that we must reverse the educational equation: the community educates and the school, the weaker vessel fits in as best it can."

2.2.i. A model of parent/teacher relations

In a most helpful analysis of parent/teachers relationships which covers the range of co-operation shown by this review, Cunningham and Davis (1985) suggest that professionals hold one of three models. The most alienating

is the "expert" model where the teacher is deemed to have total expertise in relation to the parent and where consideration of parental views and feelings, the need for mutual relationships and negotiation are all given a low priority. They term the second model the "transplant" model. This model is used by professionals when they view themselves as having expertise but they also recognise the advantage of parents as a resource. Some expertise is "uprooted" and "transplanted" into the care of parents where it will grow and be fruitful. Meanwhile the professional retains control over decision making; and it is perhaps under the aegis of this model that many parent/teacher associations are developed. The third model described by Cunningham and Davis (1985) is termed the "consumer" model where parents are seen as having the right to decide what they believe is "appropriate for their consumption". Under this model, whilst decision making is in theory under parental control, negotiation with the professionals would appear to become typical though very few schools have made such enlightened advances. It can certainly be expected that the present study will exemplify the "transplant" model with the hope that there would be a move towards the "consumer" model.

2.3. TIME FOR A GREATER PARENTAL ROLE

Perhaps it is time for parents to educate teachers. How long will it take professionals to be convinced that most parents are gifted amateurs? The Thomas Report (ILEA, 1985), states that they were impressed by the articulateness of some parents who apologised for being

articulate and others who showed great perceptiveness who thought they lacked perception. It is interesting to juxtapose contemporary urgent injunctions to pursue partnership between parents and teachers and the research which has evaluated such attempts; they reinforce one another.

For example, where the principles of partnership are concerned, Sheila Wolfendale's paper "Working Together", delivered at a conference in 1983, is useful (see Wolfendale, 1983). After quoting a number of definitions she summarizes these principles, "... that is mutual involvement, mutual accountability, mutual gain." It will be convenient to retain in mind these three important emphases as the present study develops. These principles are matched by the recommendations of the Thomas Report (ILEA, 1985). They urge that all schools should achieve a two-way passage of information between schools and parents to help children to learn better wherein a sharing of knowledge, skills, experience and commitment takes place.

Widlake and Mcleod (1984) argue that the only method of raising the level of educational performance on to a higher plateau is "... by enlisting and equipping the parents and other adults in our society to provide a more fitting locus for children." Brennan (1985) urges that parents should become active participants in their children's learning . In a recently published Penguin Trelease (1984) urges the virtues of parents reading aloud to children and quotes Meek (1982) that the "... key to children's reading success lies with parents who share the

fun of reading with their children." Where research is concerned, Townsend (1981) traces research evidence over 30 years showing that the child's home background is more important than the school in determining success or failure in reading and quotes Gray (1937), Clark (1978), and Hewison and Scholfield (1981).

2.3.i. A word of caution

With all the enthusiasm and some optimism for the future of parent/teacher relationships it is hoped that paired reading will form an integral part. It is salutory however to note the comments of two sociologists (Farber and Lewis, 1975) on what they term "The symbolic use of parents..." in the USA. After mentioning that their school systems are business enterprises, they express scepticism about the "parent-as-pedagogue" model of education set within an "enterprise model". They query the sincerity of attempts to involve parents, many of which they dismiss as "merely symbolic gestures" to meet the public demand for a net gain in the education of their children and the shareholders' concern about profit on investment. Farber and Lewis (1975) go on to express further scepticism about parental participation programmes occurring at a time when widespread conventional wisdom is concerned about the apparently reduced salience of parental involvement in the lives of their children. Such popular belief they argue "... facilely reduces many social problems to a single proto-problem - the breakdown of the family." Thus they argue that educational effort directed to family participation creates the appearance of "profit" and neutralizes the public

pressure for accountability. The third point made is that teachers have a built-in scapegoat for children's failure - the inability of some parents to act as teachers or tutors to their own children. With moves to the privatisation of education and payment by results there is a trend towards an enterprise model of education in the United Kingdom.

No doubt attention should be paid to the concern of Farber and Lewis though it may well be that they have somewhat caricatured the reality of educational practice in the USA; it is comparatively easy to make out a convincing case on the basis of anecdotal evidence of spurious professionalism. What is important is for educators in the UK to take note of what conditions could give rise to an increase in educational innovations of doubtful value to palliate public and political pressure. In their summing-up Farber and Lewis (1975) do comment that the parent-as-pedagogue in education does produce many beneficial results.

There is an interesting "aside" to Farber and Lewis's article. Gardner (1983) discusses the "Suzuki Talent Education Method" which has operated for many years in Japan. It is a "... carefully structured technique of music education which begins virtually at birth and has as a principal goal the training of accomplished musical performers in young children." However it is the child's mother who is responsible to a very large extent for the development of the programme. Significantly, if the child does not want to practice, the mother is considered to be at fault, and she is counselled on how to restore motivation and initiative to the child. As with paired reading the

"instrument", in this case the violin, is a means of "... maintaining intimacy netween child and parent.

2.4. A SUMMARY

As this survey of parent/teacher relationships demonstrates there are many genuine and successful attempts to foster such relationships. At the same time many of the initiatives are half-hearted and only designed to pay lip-service to the principle of parent/teacher relationships out of a misguided apprehensiveness for the consequences. It is, and will be increasingly apparent that parental involvement in reading and paired reading in particular has introduced an entirely fresh climate of opinion which is engendering a large amount of mutual goodwill which can only be of benefit to children's educational development

CHAPTER 3.

"CLASSICAL" AND VARIANT FORMS OF PAIRED READING

3.1. PLAN OF CHAPTER

Before looking at the origins of paired reading this chapter will briefly examine the credentials of remedial reading techniques. It will be shown that paired reading has injected a welcome fillip into unsatisfactory remedial reading strategies. The chapter will go on to describe the origins of paired reading and develop a definitive description of the technique comprising it. This description will form the basis for what is designated for the purpose of the present study as "classical" paired reading. In subsequent sections the main variations of the classical mode of paired reading will be examined and a number of miscellaneous variations will be described. Empirical studies of classical paired reading will be summarized to provide both quantitative and qualitative data followed by a consideration of the claimed advantages and disadvantages of both classical paired reading and the main variations. The final section in this chapter will describe the origins of peer and cross-age tutoring generally and more specifically where the tutoring of reading using the classical technique is concerned.

3.2. REMEDIAL READING: THE CONTEMPORARY SCENE

In recent years there has been a growing criticism of the whole concept of remedial reading. Bushell et al (1982) express doubt about the value of providing increasingly complex remediation procedures when there is a steady proportion of failing readers who resist every effort by schools and supporting agencies. Surkes (1987) quotes Dr. Hewison who was associated with the Haringey project (Hewison and Tizard, 1980) to the effect that most remedial reading methods rely on analyzing children's linguistic and perceptual deficits and are inappropriate for "... youngsters whose reading problems had social roots." Meek (1982) is sceptical of the value of continuing with remedial reading groups and classes claiming that "Most schools now recognize that the hospitalizing effect of putting "poor" readers into small groups separated from the rest of their peers is more serious than the slower growth of reading ability in an ordinary class." Such hospitalization lets the children think that they need never encounter the real difficulties of learning to read because thay have an alibi for not trying. That "most schools" now recognize this must be open to question.

Where research is concerned there has been a failure to demonstrate any long-term improvement in the reading attainment of delayed readers who have received remedial reading. Simm (1986) states that the bulk of studies have been pessimistic about long-term effects. He regards the summing-up in the Bullock report (DES, 1975) as

a typical conclusion: "...children who received remedial education showed considerable short-term gains, particularly in the more mechanical aspects of reading, but this progress was not sustained."

Similarly Cashdan and Pumfrey (1969) relate reports of short-term gains of two to three months of reading age per month of remedial treatment though, whilst gains were found on word recognition tests, gains on comprehension tests were smaller. Follow-up studies for periods up to three years showed that the improvement was not sustained.

A typical study, quoted by Lovell et al (1963), examined the records of 261 children who had been referred to reading centres in an English education authority. These records were compared with the records of a matched group of children who did not attend reading centres. After a mean period of three and a half years from the time of referral, no difference in the mean reading ages could be found between those who had and those who had not attended remedial centres.

Simm (1986), after criticizing many studies of remedial reading because of the small numbers involved and the short length of the remedial period, conducted his own study. With well over a thousand children receiving remedial reading in Cheshire with whom to conduct definitive long-term studies, he unaccountably wasted the opportunity. Five hundred children were tested, initially at the beginning of intervention, after intervention and three years later using either the Burt or Schonell graded word reading tests. He

criticizes his own study when he states that the standard deviation of the tests increased with age and no control group was used, which makes comparisons very difficult. He concludes that there is therefore no way of knowing what might have been achieved over the period during which the children received no remedial help. His use of the Burt and Schonell tests is to be regretted; they were used apparently interchangeably without any explanations or attempted justification (e.g. reference to statistical data reporting correlations between the tests).

Cashdan and Pumfrey (1969) suggest that there is some slight evidence that children's gains in reading are proportionate to the duration of remedial reading. Studies designed to show this are lacking and the statement by Presland (1981), quoted in Simm (1986), that the very fact that progress stops or diminishes when remedial reading is finished is a clear indication of its value is no evidence for its long-term effect.

It would appear that remedial reading is in a state of disarray. Gittleman and Feingold (1983) make the following unequivocal comments: "No teaching programme has been known to induce significant improvement in the reading ability of children with learning disorders."; "... a survey of the literature has failed to identify a single random assignment investigation of reading retardation vs control treatment in children with reading disorders" and "... only very scant effort has been made to evaluate the merits of remedial tutoring." When it is generally agreed that, at a conservative estimate, three out of ten British

schoolchildren have difficulty in learning to read there is an urgent need to pay greater heed to and to examine the claims for paired reading made by its practitioners.

In the USA Yarington (1978) published a book called "The Great American Reading Machine" which may well be equally apposite to the teaching scene in the UK. He concludes that the teaching of reading has been a national failure from as long ago as the early part of the century. The author was engaged for fifteen years in the training of reading teachers. He observes that where there is good teaching it is inhibited by research which has been shoddy, ill-designed, irrelevant, misconceived and generally a waste of time and money. It has also been bedevilled by poor materials. Yarington (1978) is also of the opinion that "Schools do more harm to children under the guise of remedial reading instruction than in any other area is shocking but true." He quotes teachers who blame "... genetic factors, perceptual difficulties, developmental lag, hyperactivity, lack of physiological integration, disadvantaged background, emotional maladjustment, ego deficiencies... lastly instructional methods and techniques. All related to the child except the last one."

Yarington's "solution" is for the provision of teachers who are "competent" as human beings which is a lot more than success in academic work or a general competence. He suggests that the one area of reading which has been neglected for years has been the "affective domain" - attitudes, feelings, emotions, interests, likes, dislikes, values etc., - those psychological variables, he believes,

which so affect learning. Learning takes place more rapidly and more thoroughly in a positive affective environment than in a neutral or negative one. Yarington argues that variables in the affective domain cannot be quantified or measured as easily as variables in the "cognitive domain". The affective domain, he concludes, has been largely ignored because many teachers are just plain afraid to involve themselves in human relationships with pupils. "My feeling is that at least 60% of the variance in learning to read is due to affective rather than cognitive variables; that is more failures are due to affective factors rather than cognitive factors." There is no doubt that some of these statements could be vigorously contested. However, when the present study is analyzed, it will be seen that considerable weight will need to be ascribed to the "affective domain".

Lawrence (1971, 1972, 1981 and 1985) exemplifies this emphasis on the "affective domain" with his humanistic model of reading. More detailed attention will be given to his research later. In substance he is concerned to demonstrate that remedial readers make greater gains in their reading progress if they attend regular counselling sessions. Counselling is usually provided by a "responsible sympathetic adult" and consists in discussing the child's interests - any subject which may be dominating the child's thoughts at a particular time.

With the note of optimism provided by the humanistic model of reading acquisition and its emphasis on affective factors in mind, the ensuing examination of the origin and credentials of paired reading and the subsequent

development of a composite model of children's reading acquisition will attempt to show that the humanistic mode has the potential to explain in part the claimed success of the paired reading technique.

3.3. ORIGINS OF PAIRED READING

It should be emphasised that paired reading has almost certainly been exclusively developed in the UK. With so much research in the social sciences being initiated in the USA in recent decades it is not surprising that an assumption has been current that paired reading using parents has derived from that country. It is safe to assume that research into paired reading involving parents does however derive almost exclusively from the UK. So far as can be ascertained there is only one intriguing reference to paired reading in an American journal. Henk et al (1986) refer to Greene (1970) using two students to read the same text aloud who were "temperamentally compatible". The reference is particularly interesting because the unpublished manuscript referred to is entitled "Paired Reading". In spite of prolonged attempts through the British Library, the university concerned and the citing author it has not been possible to obtain it.

Morgan (1986a) explains that paired reading derives from a review he was making of the treatment of a boy with a severe stammer at the Child Treatment Research Unit in Birmingham. He had been trying to regularize the boy's speech by reading with him simultaneously. This gave him the idea of applying the technique to children with reading problems. The Foundation for Reading Aid in

Birmingham, a small charitable tuition centre, was set up to carry out pilot trials using volunteer tutors and subsequently these trials were repeated in an LEA treatment centre in Kent (see Morgan, 1976 and Morgan and Lyon, 1979).

Morgan's (1976) paper is interesting because it explains the growth of the paired reading concept. He concludes that "... the uncertain aetiology ... of most cases of reading disability, and the lack of generally accepted and well-tried remedial techniques derived from aetiological hypotheses," made it reasonable "... to base remedial approaches upon the phenomenon rather than the aetiology of reading disability, and to apply behavioural approaches acting directly upon the observed deficit in reading skill." Morgan's behavioural approach is based upon the work of a number of researchers (Rachman, 1962; McKerracher, 1967; Staats, 1973 and Karen and Le Bow, 1973).

The majority of the studies using paired reading since Morgan and Lyon (1979), which is the study regarded by Morgan and Lyon themselves as a definitive description of the method, used the method described in that study or some slight variation.

3.3.i. The two components of "classical" paired reading

In seeking to provide a "classical" definition of paired reading which encompasses the salient steps the experience of Topping (1985b) is drawn upon to amplify it. Keith Topping is an educational psychologist and leader of the Kirklees Paired Reading Project in West Yorkshire. Because of the experience he has gained working on the project, the "paired reading pack" which he has published

and his substantial adherence to Morgan's original technique his comments are invaluable. Morgan and Lyon (1979) describe the two basic components of paired reading as simultaneous reading and reinforced individual reading or independent reading. The first component offers a means whereby correct reading responses may be acquired and the second component is said to increase the probability of correct responses through reinforcement.

In simultaneous reading the parent and child are in "close synchrony" reading together; the parent is both a model and a continuous prompt. The child is required to pronounce all words, the parent signalling failure to give an acceptable pronunciation and allowing time for a second attempt before continuing, modelling the reading of the word again if necessary. Children are found frequently to pronounce unfamiliar and complex words, adjusting their pronunciation continuously and rapidly to the parents' model.

In independent reading the child reads to the parent and receives frequent and positive reinforcement particularly for spontaneously corrected errors and difficult words. An important feature of the transition from simultaneous to independent reading is that the child is asked to signal when he or she wants to continue alone. After the need for further correction simultaneous reading resumes until a further signal. As the child progresses praise is regular but less frequent.

3.3.ii. Topping's variation

Topping's (1985b) description of paired reading is similar but his experience leads to additional emphases. He is concerned that during natural breaks in the story parent and child should discuss the book and he anticipates that, initially, simultaneous reading can be difficult to achieve by urging parents to adjust their speed of reading to that of the child. The need for some pointing is also mentioned; preferably the child should do this thereby setting the pace but occasionally it may be necessary for the parent to point.

The only variation of substance between Morgan and Topping is that Topping accepts that praise is appropriate during the simultaneous mode, but Morgan insists that reinforcement should be confined to independent reading, particularly at the point where the child indicates that he or she wishes to proceed alone. This will be discussed later though Jungnitz et al (1983) observe that, in the reading together phase, errors are relatively rare and hence praise is less appropriate than in the independent phase.

3.4. THE DEFINITIVE "CLASSICAL" PAIRED READING TECHNIQUE

Both Morgan (1986a) and Topping (1985b) emphasise the importance of not deviating from the basic technique. Indeed Morgan for example urges the utility of the technique because it remains at present the most evaluated and useful. Topping criticized many studies for failing to give instructions for paired reading in a precise operational manner. He emphasises the need for clear guidelines because

of the difficulty of effectively testing a technique if every school adopts idiosyncratic approaches.

Latterly Topping (1986b) has been even more trenchant in his concern that the growth of variation of a tried and tested technique without careful evaluation would engender "short-lived fads and fashions" and the whole movement forfeit credibility because of the failures of the few. He adds: "The field of parental involvement in reading currently faces this danger of death by dilution."

A prime example of a reading technique which the authors misleadingly refer to as "paired reading" is that of Hunter-Carsh and Cortazzi (1986). It involves splitting information from a text into two sections which the pairs read individually. They then come together to discuss the passage. It is difficult to understand how a contemporary researcher in reading in the UK can write an article which professedly expresses an awareness of "paired reading" and then introduce something which so markedly differs. The need for adherence to an accepted technique is essential.

In summary a typical paired reading session encapsulating the technique and placing the emphasis on Topping's refinements would develop as outlined below. For the purpose of this study this description will be referred to as the definitive or "classical" method.

a. Parent and child decide on a regular daily reading period of fifteen minutes free from interruptions or competing interests.

b. The child will have chosen a book preferably without any help from the parent.

c. When the parent and child are comfortably seated with the book conveniently placed between them reading will begin with the pair reading in unison. This is termed SIMULTANEOUS reading.

d. An observer will note that reading together normally proceeds smoothly with few interruptions to the flow. It will be apparent that, where a child is uncertain about a difficult word, a brief hesitation will occur but frequently the impetus will be maintained and the word pronounced correctly.

e. Where the child does fail to pronounce a word the parent will allow about eight seconds for the child to make an attempt. If the child is still uncertain the parent will pronounce the word and require the child to repeat it correctly. Reading in unison will then proceed.

f. When reading in unison is proceeding smoothly and the child is feeling confident, at a prearranged signal which may be a nudge or a tap on the book, the child will indicate that he or she wishes to read alone. This is termed INDEPENDENT reading.

g. The child will read alone until an error is made. If the child self-corrects reading alone continues.

h. If it is necessary for the parent to supply the word after the child pronounces it incorrectly the pair revert to reading in unison until the child is confident to signal again.

i. Progression continues in this way with the pair alternating between simultaneous and independent reading.

Many questions are begged by this simple description of the paired reading technique. A fuller discussion of the precise details will be provided in chapter 7. The sequence described above will be used but additional refinements will need to be included.

3.5. MAIN VARIATIONS OF CLASSICAL PAIRED READING

3.5.i. Shared reading.

There are two main variants of classical paired reading as defined in this chapter: the "shared reading" of Greening and Spenceley (1984 and 1987) and the "relaxed reading" of Evans (1985) and Lindsay et al (1985). Greening and Spenceley (1987) state that shared reading was devised by a teacher with Cleveland Learning Support Service and an educational psychologist. Essentially shared reading is a variant of the simultaneous reading component of paired reading. It was developed in response to the conclusion that "... the independent reading mode is not a crucial element in the paired reading process." Greening and Spenceley's (1984 and 1987) unconvincing attempt to demonstrate the deficiencies of the independent mode will be examined more closely later. Their simplified version of the simultaneous mode is as follows:

(a) parent and child read together,

(b) parent adapts tempo of reading to child's pace,

(c) "Parent is instructed to pay no attention to mistakes but to continue reading ... even if the child could manage only a few words of the text.",

(d) children should choose their own book,

(e) a minimum of ten minutes should be devoted to each session and

(f) the emphasis should be on enjoying the story and sharing the fun of books.

Greening and Spenceley (1984) claim that one practical merit of their study was that the simplified version of paired reading made home visits unnecessary and was therefore much less demanding on teacher time. They summarize the results of data obtained from nine primary schools in the Cleveland area involving 107 children. They state that 20.5% of the sample made reading gains of nine months or more although the mean gain was six months.

Greening and Spenceley (1987) claim that shared reading has a different theoretical base from that devised by Morgan. They quote from Bushell et al (1982) to the effect that, in their view, the theoretical basis of paired reading was the function of the enhanced self-esteem of the child to "... stimulate the various psycholinguistic aspects of reading." At this level Bushell et al (1982) claim there is an opportunity "... for semantic and syntactic prediction to occur by reducing the amount of time and attention given to difficult words..." Whilst they are not "unsympathetic" to behavioural explanations they conclude that paired reading success is not produced solely by operant procedures. Morgan acknowledges the contribution of psycholinguistic factors to explain the success of paired reading though he still regards it as "... well described in largely behavioural terms."

Whatever merit there may be in "shared reading" as developed by Greening and Spenceley (1984 and 1987) there have been no adequate comparative studies designed to assess the respective merits of shared reading as opposed to paired reading. Nevertheless they feel able to summarize that "... the shared reading method is more suitable for use with the primary age range than the paired reading technique devised by Morgan (1976). "It is regrettable that they do not allow the effectiveness of the limited studies of shared reading to speak for themselves. By so doing they might have avoided the misleading and unfounded objections they make against the independent mode of paired reading which tend to reduce their arguments to a sterile polemic.

3.5.ii Relaxed reading

Evans (1985) and Lindsay et al (1985) conducted an interesting comparative study of what they call "relaxed reading" and paired reading. "Relaxed reading" is essentially independent reading and is similar to Morgan's (1976) technique but it omits the simultaneous reading component of paired reading. The sequence of instructions to parents is set out below.

(a) Child reads alone.

(b) If child mispronounces a word or cannot attempt it, it is modelled by the parent.

(c) No instructions are given as to whether the child must repeat the word; this is left to the discretion of the parent and child.

(d) No attempt should be made to teach anything or comment "no" or "that's not right", etc.

(e) Parents are advised to use as much "natural sounding" enthusiastic praise as possible.

(f) Books are chosen by the child.

(g) Session length is recommended as fifteen minutes for six days a week.

One rather puzzling feature of these instructions is that if the child is not required to repeat a mispronounced word after the parent how can learning through modelling occur?

The subjects for the Lindsay et al (1985) study were twenty failing readers aged between eight and ten years old whose mean level of reading retardation by comparison with CA ranged from 12.4 months to 16.4 months as measured by the Neale Analysis of Reading Ability. Subjects were allocated to one of four conditions: paired reading with monitoring either by phone or visit and relaxed reading either by phone or visit. The authors conclude that statistical analysis shows no significant difference in the reading accuracy gains over the four conditions. The mean gains were eight and a half months over a six week period. There would appear to be no difference in the gains whether progress was monitored by telephone or by a visit - not everyone of course is likely to have a telephone.

To ensure that the literature review is as comprehensive as possible other reading techniques bearing some similarity to relaxed reading are briefly mentioned. There are some intriguing references in the literature which imply elements similar to paired reading but for which there is no evidence of subsequent research. In Britain Cherry and

Sayers (1956) refer to what they call "simultaneous reading". They were trying to achieve the "... total inhibition of stammering by external control..." a technique whereby the subject shadowed a control reading from a book without seeing the text and progressed to extended simultaneous reading. The technique in this case does not appear to have been utilised for remedial reading, though, along with other methods, it appears to have been quite successful with stammerers. Robinson (1985) refers to a book about the psychology of reading, (Huey, 1910), where the author comments that "... the secret of it all lies in parents reading to and with their child."

3.6. MISCELLANEOUS VARIATIONS OF CLASSICAL PAIRED READING

3.6.i. Young and Tyre's study

A report of Young and Tyre's (1983) research is referred to here because it is introduced with some provocative and apposite comments and also uses the paired reading technique in a study of dyslexic children. They make some trenchant remarks in their critique of contemporary efforts to solve the reading "problem". They affirm that for too long learning to read in school has been shrouded in technical mystique and we in schools must shoulder much of the blame. They assert with Gollop (1984) that remedial teaching too often means "... little more than finding out what the children can't do and giving them a hell of a lot of it. This kind of remedial help has been likened to throwing a drowning man both ends of a rope." Young and Tyre (1983) go on to argue that "... there is now sufficient theory, research and examples of good practice which point

to (how reading can be taught) bridging the gap between psychological theory and practice." In similar vein Stanovich (1984) suggests that research in the psychology of reading necessarily takes place at the interface between developmental, experimental and educational psychology though why cognitive and social psychology are omitted is not explained. Both this latter comment and Young and Tyre's assumption seem to be fulsome claims and over-optimistic responses to research developed in the psychology of reading during the last ten years which Stanovich describes as "... nothing short of explosive ... Both in terms of quality and quantity ... (where) progress has been both steady and exciting." Neither writer gives well-founded evidence for their assumptions and Stanovich's (1984) final summary is probably nearer the truth when he avers that, whilst there has been significant progress in understanding reading, "... stronger evidence of the existence of causal links between various sub-processes and reading ability, as well as evidence of the influence of developmental changes in such links..." is vitally needed. Topping's (1985a) comment is salutary "A pre-occupation with the dissection of the skill of reading has left many researchers carving their names on a tree but unable to find their way out of the wood."

Young and Tyre's (1983) research involved fifteen children between eight and thirteen years of age who were two years retarded in reading. Significantly they had been independently diagnosed as "dyslexic". Thirty other children were selected who matched the dyslexic children in age, sex, reading age and general ability. Fifteen of these children

were designated a control group, fifteen a matched group. The dyslexic and matched group received the parental guidance and encouragement and 30 minute instruction a day for a year while the control group took no further part in the project until it was complete when their reading age was retested. Young and Tyre (1983) concluded that all the children who had been helped by their parents were markedly superior in their reading abilities measured by appropriate tests, as compared with the children in the control group. What must however be of particular interest is that there was virtually no difference between the reading improvement of the dyslexic and the matched group. It should however be stressed that, whilst Young and Tyre's remedial programme included paired reading, the whole package was considerably more "sophisticated". It is included here because it is indicative of the "power" of paired reading with parents acting as tutors to effect an improvement in reading performance with a most intractable group of dyslexic children.

3.6.ii. Barrett's technique

A form of paired reading was used in a study by Barrett (1986). The project was a very limited one with only five subjects. The parent read with the child for five weeks using simultaneous reading, followed by five weeks of full paired reading. The sessions lasted for ten minutes for five nights a week. Barrett (1986) states that the results

suggested a trebling of the previous rates of progress but no further details are supplied.

3.6.iii. Bryan's technique

The Bryan's et al (1985) study, which Topping (1986b) calls a variant of paired reading, though it is probably in an entirely different category, involves the parent reading a passage, followed by the parent and child reading the same passage together and finally the child repeating the same passage alone. Three such studies reported reading accuracy increasing markedly and comprehension less so.

3.6.iv. Pause, prompt and praise

The several "well-structured" studies of pause, prompt and praise, a technique which speaks for itself, yield two and a half times normal progress (a term discussed below in section 7.ii) (see Wheldall and Mettem, 1985). The pause, prompt and praise studies deserve more detailed consideration. Because the technique bears only slight resemblance to paired reading as defined in this study further discussion would be superfluous. It is however a technique well worth the attention of comparative research. A further reference will be made to the technique when child tutoring is discussed below.

3.6.v. Henk's technique

Worthy of mention here however is a reading technique which derives from the USA and bears some similarity to paired reading but with certain unique features. It rejoices in the cumbersome description of "The

Neurological Impress Remedial Reading Technique" or NIM for convenience. It is well described by Henk (1981 and 1983) and by Henk et al (1986). Henk (1981) notes that, for the most part, research has produced positive results. NIM is a system of unison reading in which the student and teacher read aloud simultaneously at a rapid rate to which students gradually adjust and enjoy, even though the accelerated pace may sound like mumbling. The book is held by both student and teacher with the student seated slightly in front of the teacher so that the teacher's voice can be directed to the ear of the student. It is emphasised that, in this way, words are seen, heard and said. The teacher should slide his finger at the "... precise location of the spoken word." The aim is to achieve fluency without pause either for mistakes or for unknown words. There is therefore no struggle and the tempo is maintained. A secondary aim is to cover as much material as possible in a ten minute session over a period lasting for about ten weeks. The pace should not be such as to cause discomfort to the child but if the child slackens speed the pace should be forced. Teachers are discouraged from making reference to pictures or context nor does the teacher ask questions though the child's questions are not discouraged. The ideal, it is claimed, is to reduce anxiety about reading. At appropriate points the student should be praised. Initial sessions should use familiar material for practice. As improvement occurs the child can take over the pointing. The ultimate aim is for the student to take over the vocal lead with the teacher gradually reducing the amplitude of his voice so that the student's voice becomes

more prominent. If the student falters the teacher increases amplitude. The reading material is also gradually increased in complexity.

Henk (1981) says that the term NIM was coined by Heckelman (1966). It is interesting to note that Heckelman's experience paralleled that of Morgan; Heckelman derived the technique from a direct language feedback which had proved successful with stutterers. When the voice of the subject was redirected back to the ear stammering stopped (see Cherry and Sayers, 1956). Heckelman hypothesised that this "... process of feedback could be initiated in a reading situation and that it might effect a neurological change." It is not proposed to devote further space to NIM apart from a brief mention of the reasons given in the literature for its success. Henk (1981) incidentally makes a similar comment about traditional reading methods as is made by many writers on paired reading; that such methods make the student increasingly over-analytical and thus reading fluency is even more disrupted.

The success of NIM is attributed by Heckelman (1966) in his early paper and later by Henk (1981) to the following factors:

(a) it encourages students to interact with the strategies of efficient readers within a pressure-free natural language context. Learning is maximized and stress minimized;

(b) it is a method of breaking the "phonics-bound" tradition which occurs in many children who have had

intensive phonics training and still have not learned to read fluently;

(c) the correct systems are deeply impressed by reinforcement;

(d) efficient readers process language information automatically; NIM requires more productive attention strategies which facilitate this;

(e) a neurological network system is operating in the form of sophisticated perceptual integration. Visually the child follows the graphic symbols as the auditory counterparts are supplied directly to the ear by the model. Though Henk (1981) says that this bimodal stimuli aspect has been physiologically demonstrated by various researchers he does add that the findings should be interpreted with caution since modal tasks are susceptible to contamination and

(f) generally NIM has a motivating effect on reading attitude.

Whilst items (a) to (d) and (f) match the reasons for the success of paired reading given by researchers and are discussed below, item (e) needs further verification.

3.6.vi. Paired reading "readers" using variations of classical paired reading

At least two publishers are providing a series of books designed for "paired" or "shared" reading. The first of these is associated with a variant of paired reading and is particularly relevant to this section. Gillham (1985) and a gifted illustrator, Margaret Chamberlain, have produced a

series of readers published by Methuen "emblazoned" Methuen Paired Storybooks. The instructions to "tutors" as to how to apply the paired reading technique are printed on the inside back page. They amount to a variant of paired reading in a number of important respects: the correction procedure is abbreviated in that error words are repeated by the adult with no requirement that the child should repeat them correctly; tutors are told gradually to increase their reading speed once a degree of synchrony is established and subsequently the tutor is enjoined to lower his/her voice as the child becomes more confident to the point where he/she drops out altogether; when the child stumbles paired reading should resume, but the tutor should "drop out again" quickly; the story should be read right through once a day and after about five to eight readings the child will usually be reading the book independently. There is no emphasis on praise, one of the essential elements of classical paired reading.

An unattributed review in the Kirklees Paired Reading Bulletin (1986) comments on the absence of any empirical research to substantiate the effectiveness of this variant of paired reading other than an inadequately documented study with poor readers in top infant and first year junior classes in the Nottingham area (see Gillham, 1986). "There is no specification of numbers involved, test used or indeed results - except to say that 'the project was successful even very successful'." The reviewer states further that the Nottingham workers found that the paired reading technique had to be adapted and simplified to make

it more natural which is not in line with the majority of other studies with non-readers from top infant schools. Gillham is quoted as saying that this variant of paired reading has proved to be more natural and less obtrusive than the original form of the method; a comment which seems to be based on very little experience.

This variant, it is submitted, has been worth discussing at length because it follows up an early comment on paired reading readers. It is difficult not to agree with the anonymous reviewer when he/she says "These story books are attractive and likely to be well received by young children. It is a pity that they have been shrouded with trappings of what may well be interpreted by many observers as cynical commercialism." The thinking behind the publishing of this series is evident from Gillham (1985). With a growing number of proponents of paired reading he is inclined to the psycholinguistic model of reading. Gillham's good intentions are clear. He avers that it enables children to read books of their own choosing right from the start and Methuen Paired Storybooks are designed to meet that need though that is rather like saying "You are free to do what you want providing you do it my way." He criticizes most beginning readers: they either have no story at all or no story of any significance, and they lack a rich vocabulary to appeal to the child's imagination. He also argues that they should go for meaning beyond the level of words to be decoded to show children what reading is about. By contrast most schemes "... are trapped by the dogma of the restricted initial vocabulary much repeated." It is however inherent in

the paired reading technique that there is no such book as a paired reading reader.

Ginn and Co. Ltd. have also produced "...an exciting new programme of children's books" to augment their successful Ginn 360 scheme. The publishers state that the series takes full account of the difference between home and school as learning environments; it would be interesting to know what these differences are and how this is reflected in the production of the series.

3.7. EMPIRICAL STUDIES OF CLASSICAL PAIRED READING

3.7.i. Plan of section

This section will be entirely devoted to paired reading studies using the "classical" form.

Before identifying the advantages and disadvantages of paired reading it will be useful to summarize the results of recent studies many of which can be found reported in greater detail in Topping (1985c, 1986c, 1987a and 1988a) as part of the Kirklees Psychological Service paired reading project. The reports are cumulative; hence most of the information given here will be from Topping (1987a).

3.7.ii. Topping's quantitative analysis

Keith Topping appears to wear two hats and this calls for some caution. As director of the paired reading project he has presented a large amount of evidence in the three annual reports designed to show how successful paired reading is in improving children's reading performance. When he is writing journal articles however, as quoted above, it

will be noted that he is critical of much paired reading research, a dimension on which his annual reports place less emphasis, though perhaps it is implicit in what he omits to say. An example of this is where, in Topping (1987a), he says "It should be noted that these results have been obtained on many different reading tests" and he goes on to give an analysis of the tests used in thirty-four studies. The Neale Analysis of Reading Ability (Neale, 1966) was used in ten studies and the Standard Reading Test (Daniels and Diack, 1958) in eight studies. Seven other tests were also used. It is surprising that the Kirklees project continues to favour the Neale when Topping (1985b) is critical of its use as a measure of comprehension concluding that the gains in comprehension scores have, in some cases, been so large as to be barely credible (see analysis of early studies of paired reading and the critique of Neale Analysis of Reading Ability in Appendices 7 and 26). The analysis of available reading tests which is made later in this study will show how unsatisfactory most tests of reading are.

With these comments as a background Topping (1987a) calculates that during the first three years of the project 2,030 children participated and evaluation data on objective tests is available for 1,595 children. He calculates that, over the three years combined, project children have on average improved their reading age at a rate of 3.4 "times nomal progress" in accuracy and 4.7 "times normal progress" in comprehension. It should be evident that "times normal progress" is defined as progress commensurate with increase in chronological age. (Henceforth

"times normal progress" will be referred to as "tnp".) During the years 1985 and 1986 Topping (1987a) also reports the findings of a total of 42 studies using "control" groups and 21 studies where chilren's progress had been compared with baseline gains. In control group studies treatment groups have gained 4.3 "tnp" and control group children 2.2 "tnp". The high rate of gain for control groups is attributed by Topping largely to enthusiasm and interest by non-participating staff and children to emulate the experimental groups. Over three years 23 sets providing baseline data show children progressed at 0.98 "tnp" during baseline and 2.8 "tnp" during projects. It is interesting to note the average size of study groups. Topping states that, in 1986, there were 42 projects involving 865 children which would give an average of approximately 20 children per project. An analysis by the writer of over 60 projects nationwide suggests that the average number is lower, at 15 per study.

3.7.iii. Topping's qualitative analysis

In an analysis of subjective data taken from a random sampling of 1985 checklists Topping (1986d) gives an indication of the trends in paired reading. He used questionnaires on 219 children from 17 projects.

Teacher responses gave

61% of children reading more in class,

51% understanding reading better,

55% reading more widely and variously,

57% showing more interest,

54% showing more pleasure,

71% showing more confidence,

65% reading more accurately,

68% reading more fluently,

43% showing better concentration and motivation and

20% showing better behaviour.

40% of parents stated that they intended carrying on with paired reading.

An analysis of questionnaires completed by children showed that 88% liked reading better, 94% felt more competent and 72% wanted to carry on. Miller et al (1986), in a conference paper, found that parental take-up rate of paired reading can reach as high as 60%.

Topping's analysis finally notes that, whereas the majority of initial paired reading projects were undertaken with children who needed remedial help, this was no longer so. In 1986 only 30% of the projects associated with the Kirklees project were directed to helping "remedial" children. The tendency was towards greater involvement of children with mixed ability. The writer's own analysis confirms this trend. Of the earlier projects 31 out of 41 studies examined were concerned with "delayed" readers - an umbrella term for a number of categories. Topping is also correct when he states that studies have included children of average and above average ability to those five and a half years retarded, "dyslexic" children, children across

the range of ability and of age and children from severely disadvantaged, and middle-classs and ethnic communities.

3.7.iv. Other analyses

Further summaries of research (cf Miller et al, 1986 and Morgan, 1986) confirm that factors such as differences in chronological age and in accuracy and comprehension scores at the onset of the study, English Picture Vocabulary Test scores and sex appear to be unrelated to children's reading gains during paired reading and Miller et al (1986) make the point that "... attempts to select particular failing readers for such projects by criteria such as these are not warranted." This statement reflects the recent conclusion of Branston and Provis (1984) who found that all children whatever their ability or stage of reading reached benefited from being heard to read regularly at home.

One crucial question which needs answering is whether the initial success of classical paired reading is sustained in the long-term particularly with the knowledge that most remedial reading schemes fail in this respect. Topping (1987a) states that follow-up results are available on six data sets and that, though acceleration at normal rates does not continue, advantages accruing to paired reading children over non-paired reading children do not "wash-out". Carrick-Smith (1985) conducted a paired reading study with 30 delayed readers. Both parents and 6th formers were used as tutors. Over a two month experimental period gains for reading accuracy and comprehension were in excess

of twice those of the control group. However the important finding bearing on the present study is that improvement was maintained during a one-year follow-up period albeit at a much reduced level. The present study has been designed in part to examine this issue.

3.7.v. The comprehension score controversy

One particular outcome of paired reading research which should be treated with reserve is discussed above in general terms and more specifically when available reading tests come to be reviewed. This is the all-round improvement in comprehension scores which in many cases markedly exceeds the improvement in reading accuracy. A carefully researched study by Miller et al (1986) leads to an interesting conclusion. They note that over the eight week experimental period the mean gains in reading accuracy were 2.43 months for the treatment group and 0.81 months for the control group whilst mean gains for comprehension were 4.36 months for the treatment group and 1.69 months for the control group.

Their conclusions are worth quoting in full: "Other studies have frequently suggested that paired reading has a particularly dramatic effect upon reading comprehension, the gains in comprehension scores being approximately twice those for accuracy. However the present study has shown this to occur also for the control group and the difference in comprehension gains between the experimental and the control group to be not statistically significant. This suggests that comprehension gains from the two administrations of the Neale Analysis of Reading Ability

(Neale, 1966) which has been the test used in a majority of studies, may in fact be due far more to characteristics of the measure used in this way over an eight week period." This question will also be examined by the present study.

3.7.vi. Deficiencies in methodology

In summary what reliance can be placed on paired reading studies? The criticisms levelled at the technique by Hannon and Tizard (1987), quoted in the introduction, that it has been oversold and that researchers conclusions are distorted are indignantly rejected by Topping (1987c) when he expresses astonishment that coverage by the Times Educational Supplement should be given to a report based on non-significant results for only 70 children on group reading tests of doubtful validity and reliability. He argues that this is a cynical and biassed conclusion by two academics of standing. They ignore the unique nature of the spread of paired reading in schools which to a large extent has been effected by enthusiastic teachers; many of the studies can be "torn apart" by uncharitable critics as the facts adduced below will show. No doubt paired reading has been oversold and this is precisely why such studies as the present one are necessary.

Before commenting further on Hannon and Tizard's (1987) remarks the following facts should be considered. The writer has made an analysis of 62 studies quoted in the bibliographies of Topping (1985c, 1986c, 1987a and 1988a) and Robinson (1985). It is true that they have all been undertaken with varying degrees of advice and assistance from educational psychologists and that details of the

studies are often somewhat imprecise. Some facts however can be collated with precision and these are set out below.

a. In 24/62 studies the number of children involved is less than ten.

b. In 35/62 studies controls are lacking.

c. 24/62 studies deviate from standard paired reading practice. (This has been deprecated by both Morgan, 1986a and Topping, 1985b).

d. In 31/62 studies there were no home visits to assist parents to maintain the consistency of the paired reading technique.

e. In 28/62 studies methodological weaknesses of a general nature were noted (e.g. use of different reading tests for pre and post measurement, lack of random allocation of subjects where control groups were used etc).

f. In 28/62 studies the Neale Analysis of Reading Ability is used. Whilst it is easy to decry the use of the Neale with its dated standardization and presentation, during the period the studies were undertaken, as will be shown below, it was the best measure among a mediocre bunch. For a small number of studies the Burt, Schonell and Holborn tests continue to be used.

The preceding analysis shows that it is quite possible to select a number of paired reading studies and demonstrate defective methodology as Hannon and Tizard (1987) have also demonstrated. It is however submitted that Topping's (1987b) considered conclusion in the light of his analysis earlier in this section that "Whilst paired reading does not pretend to be any sort of panacea, there is now a

great deal of research evidence on the positive aspect of the method on children's reading skills," is substantiated. If the analysis of subjective evidence is also considered, it would be difficult to produce much evidence of weight dissenting from his general conclusion. Morgan (1986a) supports this assessment. In summarizing the progress of paired reading he avers that it is probably the most widely evaluated technique in education used by teachers and psychologists, though clearly, he goes on, as is constantly being reiterated, much of the quality of the research is questionable.

3.8. Comparative studies

Four studies are described below. They are those of Burdett (1985), Wareing (1985), Jones (1987) and Grigg (1984). They compare classical paired reading with "individualized reading", "the reading aloud method" and the "traditional method" respectively. The two former methods differed only in name from relaxed reading and were structured techniques. The two latter studies used the traditional method which means that a parent heard a child read - there was no attempt by the researcher to impose a structure.

Burdett (1985) conducted a study in British army schools in Hong Kong with 48 children either failing in reading or who would benefit from remedial tuition. She compared reading progress between a parent tutored reading group using paired reading and an "individualized" reading group which was also tutored by parents and involved them hearing their children read using a technique which varied

only marginally from "relaxed reading". She concluded that the methods were equally effective with the paired reading groups making five times the progress of a control group and the individualized reading three times the progress measured by the Wide Span Reading Test (Brimer, 1972) though her figures would suggest that classical paired reading was markedly superior to relaxed reading.. She did however conclude that paired reading was more effective in reducing the error rate and also suggests that boys responded slightly more positively to paired reading than girls.

Wareing (1985) conducted a comparative study of three methods of parental involvement in reading and found that the differences were insignificant. The methods were paired reading, a reading-aloud method tantamount to "relaxed reading" and a linguistic method which involved a parent reading part of a story and then discussing what had been read with the child. The child then retold the story in his/her own words while the parent committed it to paper. Finally the child read this version of the story aloud. What is surprising about the project is that for no method was the gain in reading accuracy or comprehension from pre to posttest significant. In addition the author subsequently discovered that, of the children who participated (sixteen apparently), in the paired reading and linguistic method group all but three had reverted to the "reading aloud" mode before the end of the eight week duration of the study. For this reason little credence can be placed on the findings. It may not be surprising that the paired reading method degenerated when it is well documented by Topping that

fortnightly visits to parents are necessary to maintain interest and momentum. In Wareing's study only one visit was made during the course of the study and that after three weeks.

A further comparative study was conducted by Jones (1987) with 43 top infant children divided into two randomly selected groups; there was no control. One group engaged in paired reading whilst the other group was heard to read by their parents using the traditional method. Though the pre and posttest differences did not reach statistical significance they would indicate that most success was gained by the paired reading approach. Children in both groups made significant gains in their reading ability; three and a half "tnp" for paired reading and two and a half "tnp" for parent reading.

Another study making a comparison between paired reading and the traditional method where parents hear children read is that of Grigg (1984). He used 48 children between eight and ten years of age in three randomly assigned groups of 16 each; they were a paired reading group, parents hearing children read traditionally and a control group. There was no significant difference between the two treatment groups in terms of reading age which was "greater than could be predicted".

3.8.i. Comments on comparative research

In the light of the comparative element in this present research it is appropriate to look more closely at the comment made by Swinson (1986) "... that there is NO conclusive evidence which shows that one method of listening

to children read is more effective than any other." It would be more true to say that there are strong grounds for stating that the progress in reading accuracy and comprehension of children who have participated in paired reading studies appears to be greater than children who have been the subjects of traditional parent/child home reading schemes, but that there are no comparative studies providing the conclusive evidence to which Swinson refers (see Topping, 1986c). Swinson quotes the three studies which were reviewed earlier when he says "... they have failed to find any significant difference between paired reading and a traditional approach:" (see Grigg, 1984; Wareing, 1985 and Lindsay et al, 1985). Of these three studies, Wareing's (1985) findings are invalidated for the reasons given above. Grigg (1984) and Lindsay et al (1985) were making differing comparisons. Grigg's two comparative groups were paired reading and a traditional approach whereas Lindsay et al (1985) compared paired reading with a form of independent reading. Grigg's negative findings are the only empirical evidence for Swinson's statement. In fairness to Swinson it should be noted that he emphasises that his criticism is not of the paired reading approach but of its "blanket" application in all settings.

There are difficulties in conducting comparative research using "traditional" parent/child reading as one of the treatment groups. How is the "traditional" method to be defined? For example Swinson (1985) quotes the Lindsay et al (1985) study as a comparative study between paired reading and a traditional approach. This is not so. Lindsay and his

colleagues compared paired reading with what they termed "relaxed" reading which is described above and is tantamount to the independent mode of paired reading. Traditional methods can vary considerably from unstructured sessions where parents are requested by the school to read with their children to highly structured studies where parents receive varying degrees of advice and guidance; the plethora of confounding variables is apparent. "Traditional" might also describe what many parents have always done which would include elements of reading to and reading with their children and/or also hearing them read.

Topping makes a general comment about recent studies and projects which have used traditional listening methods involving parents. He refers to PACT, the "Parental Involvement in Education Through Reading" which is an initiative based on Hackney Teachers' Centre in London; the "Caper" project of West Glamorgan County Council and the well-known Belfield Project. He concludes "...it is noteworthy that (these) projects have failed to publish any data." (see Topping, 1987b).

With all the attention directed to parent tutoring of paired reading there seems to have been little consideration of the use of teachers as paired tutors. So far as can be ascertained there are no published studies comparing the effectiveness of parent tutors with teacher tutors. However Topping, speaking at a conference on paired reading at Dewsbury, West Yorkshire in November 1987 stressed that his experience showed that teachers were less effective than parents as tutors of paired reading. It

should also be borne in mind that paired reading is very much seen as supplementary to classroom experience and it would be very time consuming for a teacher to tutor on a regular basis.

3.8.ii. Topping's consumer guide

By way of summarizing this section on variant forms of paired reading Topping's (1986b) "consumer guide" to parental involvement in reading is useful. It reviews a wider range of studies than the variations of paired reading referred to above, and its conclusions are significant. The "parent listening" studies of Tizard et al (1982) and Swinson (1985) provide "... solid evaluative evidence from control studies " that children tutored by parents usually progress at twice times normal progress (this in spite of the findings of the Belfield Project, Hannon and Jackson, 1987). The shared reading of Greening and Spenceley (1984 and 1987) and "Pause, prompt and praise" (Wheldall and Mettem, 1985) are assessed as "GOOD VALUE" whilst the relaxed reading of Lindsay and Evans (1985) in Topping's opinion needs further evaluation. For the "pure form" of paired reading there is "... massive evidence from 70 published' studies, including baseline, control and follow-up data...that the children progress on average at a rate of three times normal progress in reading accuracy and five times normal progress in comprehension." Various "fringe" methods are also described but they are too diverse to identify here. Topping (1986b) concludes that, in his opinion, paired reading in its pure form is still "BEST BUY". He adds that there is little point in inventing

further techniques until we are clear about the effectiveness of present ones which, in part, this present study aims to achieve.

3.9. AN EVALUATION OF CLASSICAL AND VARIANT PAIRED READING TECHNIQUES

The following analysis of the advantages and disadvantages of classical paired reading is based, for the most part, on the conclusions from questionnaire data and subjective impressions from experimental studies involving paired reading schemes. It will be noted that many of these benefits are by no means exclusively confined to paired reading. They reflect the single-minded enthusiasm for the technique which reinforces the previously expressed need for definitive research.

For this analysis compare the following authors: Branston and Provis, 1984; Bush, 1983; Bushell et al, 1982; Cunningham and Davis, 1985; Gillham, 1986; Greening and Spenceley, 1984; Griffiths and Hamilton, 1984; Hayden and Fagan, 1983; Heath, 1980; Jackson and Hannon, 1981; Morgan and Lyon, 1979; Pflaum et al, 1980; Radcliffe, 1980; Robinson, 1985; Rosenshine, 1978; Topping, 1984 and Webb et al, 1985.

3.9.i. Advantages for children

a. Paired reading acts as a bridge between the stage of reading to children and children reading for themselves.

b. Paired reading enables children to achieve fluency right from the start and encourages them to read for story rather than just word recognizing.

c. Children are in control in that they can choose the books they want and therefore pursue their own interests; they can also indicate by signalling when they wish to read independently.

d. There is no failure, no leaving the child to struggle and no fussing about errors; apathy is overcome.

e. There is a lot of praise within a warm setting and frequently the attention is patient and sensitive.

f. Children get private attention; there is respect for the child.

g. There is an improvement in children's attitude to reading and to school generally; they gain in confidence to tackle books on their own and it is a technique which they find enjoyable.

h. The concept is designed to capitalize on any strategy used by the child to discern meaning and maximum benefit is derived from context-cueing strategies.

i. There is no breaking up of words.

j. The "scaffolding" dialogue between adult and child enables and encourages the child's cognitive development.

k. Lees (1986) in a personal communication claims that her research indicates that paired reading encourages the development of phonological skills without the need for explicit instruction and notes that, if true, this should come as a welcome relief to both children and teachers.

l. Bush (1986), also in a private communication, found that paired reading enables "difficult" words to be acquired after three repetitions.

m. There has been an improvement in children's behaviour where this has been of concern to the mother and father.

3.9.ii. Advantages for parents

a. It is a flexible procedure.

b. It is clear and straightforward and easy for parents to acquire; they know exactly what to do.

c. Parent and child enjoy a shared experience.

d. Parents become highly motivated.

e. Co-operation extends over all economic groups. (This is a matter of record: see Topping, 1987b.)

f. Where there has been tension in the home it has decreased in many cases (cf however Spalding et al, 1984 who found some parent/child friction).

3.9.iii. Advantages for teachers

a. Home/school barriers are broken down - removal of "them" and "us" attitudes.

b. Teachers can devote more time to refining the more technical aspects of reading.

c. Paired reading complements work in school rather than replacing or replicating it.

d. It subserves the aim of the individualization of a reading programme.

3.9.iv. General advantages

a. No specialist expertise is required.

b. It is economical.

c. It eliminates the uncontrolled effect of the need to alert parents on occasions to their child's failure.

d. Books are seldom lost or damaged.

3.9.v. General disadvantages

Topping (1985a) assesses the disadvantages by concluding that:

(a) there is no check on frequent error words,

(b) there are no further specific teaching techniques and

(c) there is no promotion of independent self-correction of errors.

3.9.vi. Other disadvantages

Topping (1987b) also responds to two stated disadvantages of paired reading which he places in quotes but fails to provide the citation. He says "... it is difficult to see how paired reading can be censured for helping teachers to 'remain aloof professionals' when many projects build in supportive home visits by class teachers - not a feature found in many traditional listening projects." As discussed above however a superficial examination of some individual projects could well establish the point. He also states that paired reading has been criticized for "not being natural". He suggests that this very novelty is a major reason for its success and questionnaire responses, particularly from children, suggest that it has not been found to be more "cumbersome" than any more "naturalistic" technique in use before.

Of more concern are the claimed disadvantages for paired reading noted by Doyle and Lobl (1987): that it is

time-consuming, overtime for staff, difficult to monitor, takes over the life of the school, that parents can become "invasive", that it needs staff to develop counselling aids and finally that non-participating parents and children feel left out and guilty. Any initiative designed to improve children's reading attainments is likely to place additional demands upon teachers, a demand to which a great number of teachers have responded. It may be that the lengthy period of recent "industrial action" accounted for some of these objections. Surely if "paired reading takes over the life of the school" it is no bad thing; an alternative phrase would put it in a different light: that its effectiveness engenders considerable enthusiasm on the part of children, parents and teachers. If it were true that non-participating parents and children feel left out and guilty this also could be said to be a good thing assuming that all children had the opportunity to take part. However it should be borne in mind that Topping (1987a) regards the high rate of reading attainment gain in control groups as due to the enthusiasm and interest of non-participating staff and children.

So far as can be ascertained Spalding et al (1984) are unique in finding much parent/child friction but they then surmise that this could have been due to the children not being given a completely free choice of reading material. By way of warning rather than criticism Morgan, in an unpublished comment, speaks of "The risk that efficacy will become dissipated unless training and supervision (albeit both simple and brief) are sufficient to prevent a

degeneration into simply "listening to a child read".

3.9.vii. Greening and Spenceley's objections to classical paired reading

Greening and Spenceley's (1984 and 1987) summary of disadvantages is confined to the independent reading component. As discussed above they argue that the independent component is unnecessary; that paired reading should be confined to the simutaneous reading component. Their objections are derived from Bushell et al (1982), Morgan (1976), Morgan and Lyon (1979) and Heath (1980). In summary they make the following points.

a. Parents find the independent mode of instruction difficult to acquire.

b. Some children dislike independent reading and are loth to knock i.e. to signal to the parent that they wish to carry on independently.

c. Parents have difficulty in remembering to reinforce their child to knock.

d. Parents have problems generally in providing reinforcement during independent reading,

e. There is a damaging focus on mistakes; it is negative.

f. Stopping to correct mistakes interferes with the enjoyment of the story.

g. Too much time is needed to train parents in the independent technique.

h. Regular monitoring sessions are needed to ensure that parents do not deviate from the correct method.

i. Paired reading is only suitable for those children who have a basic phonetic knowledge and therefore it is not feasible to include inexperiencedaders with non-existent skills.

j. Paired reading ignores the fact that what is needed is parental involvement in reading from the earliest years of schooling.

k. The method of signalling is complicated.

l. "Morgan's method of simultaneous reading is a rather disjointed procedure as the child has to attempt every word and parent and child stop to correct all errors."

3.9.viii. Response to Greening and Spenceley

In a wide-ranging analysis of well over 100 studies of paired reading made by the author, of the first eight items taken from Greening and Spenceley (1984) only item (d) received any general corroboration and indeed the pilot study associated with this present study showed a similar reluctance to praise among some adult tutors. Morgan (1986a) expressed concern that parents did not praise sufficiently but nevertheless notes that they were creating a very warm and encouraging atmosphere (also see Burdett, 1985). The pilot study showed that often a cuddle was an acceptable substitute for a word of praise. It would appear that items (a), (c) and (d) are quoted by Greening and Spenceley (1984) from Bushell et al (1982). Item (d) has been dealt with but there would appear to be little justification for the forthright statements of items (a) and (c). What temporary difficulty parents were experiencing was clearly resolved because Bushell et al (1982) go on to say

that, in response to a question about how difficult it was to acquire the various elements of paired reading, all the parents found the technique easy apart from "not making a fuss" over mistakes. Item (b) is stated to derive from Morgan (1976) but no trace can be found of any comparable statement nor can any reference be found in either Morgan (1976) or Morgan and Lyon (1979). What Morgan (1976) does say is that "... a great deal of encouragement has been found necessary during the first few hours of tuition." The most telling response to Greening and Spenceley's quote is that Morgan's (1976) study was a pilot study of three children so how could it have been stated that "some children disliked independent reading"?

Items (e) and (f) of Greening and Spenceley's objections to the independent mode of paired reading are at variance with the accumulated experience of the many studies which the literature review has analyzed. The essence of paired reading is to encourage parents to eliminate as far as possible any criticism of the child's performance and indeed many parents find it difficult to refrain from adverse comments. To refer to the correction of mispronounced words as "negative" is an astonishing conclusion and there is no evidence available to this survey which finds that correcting mistakes in paired reading interferes with the enjoyment of the story. It is not clear what the objections are to item (g) and (h); they are an integral part of the paired reading technique and indeed do require some commitment of time amd effort on the part of teachers.

Items (i) to (l) are taken from a later paper by Greening and Spenceley (1987). Generally they state that paired reading theory requires independent reading as the main component. Whilst it is true that Morgan does regard the achievement of competent independent reading as one aim of paired reading he also argues that "... the need to dissect the effects and processes of its various components (is) less pressing given that it appears that the package as a whole works" (see Morgan and Gavin, 1985). Morgan (1986b) also calls simultaneous reading a "potent learning situation". Item (i) suggests that children need a basic phonetic knowledge before embarking on paired reading but so far as can be ascertained this is not confirmed by any research; what research there is, is to the contrary, that paired reading encourages the development of phonological skills (see Lees, 1986).

Factual evidence for the statement at Item (j) would be welcomed as a careful analysis of many studies for this literature survey can find no such implication though Greening and Spenceley (1987) appear to be adept at basing an argument on the exceptional quote.

Item (k) is a matter of opinion which is quite unsupported.

Responding to Item (l) it is quite clear from Morgan's (1986b) book "Helping Children to Read" that, if simultaneous reading is practised in accordance with the guidelines, that mistakes are infrequent. It is remarkable how a child will get a "piggy-back" through difficult words and keep the reading flowing smoothly.

In an attempt to demonstrate that shared reading is probably as effective as paired reading Greening and Spenceley (1984) adduce two advantages for which no empirical evidence can be discovered in the literature namely that it is "... appropriate for younger children and beginning readers." and "... more flexible in application to different reading requirements." A third advantage may well be true, that the "tuition" package is easier to acquire and is therefore less demanding upon teacher/parent time.

In summary Greening and Spenceley's critique of paired reading is another example of failure to take a balanced overview of the literature and hence of falling into the trap of making definitive conclusions on the basis of one or two studies. That they were also misinterpreted could indicate that Greening and Spenceley (1984) decided in advance that the independent mode of paired reading was unnecessary to its success.

3.9.ix Claimed advantages for relaxed reading

Lindsay et al (1985) claim that, if it can be shown that there is no difference between the effectiveness of relaxed reading and classical paired reading, relaxed reading is more cost effective, simpler and less demanding of teacher/parent time. They proffer the general explanation for the success of both methods that children's anxiety is reduced, but whether they have isolated the factor or factors which they claim paired reading and relaxed reading have in common is open to question and further more definitive studies are necessary.

3.10. REASONS FOR APPARENT SUCCESS OF CLASSICAL PAIRED READING

A further analysis of research by the author into classical paired reading over the last six years shows a number of attempts to explain the reasons for its apparent success. Inevitably there will be some overlap between these categories and the categories listed under "advantages" since by implication these will assist in the elucidation of what is regarded as "success". Morgan and Lyon (1979) were unclear as to which elements of the paired reading package are effective. Indeed, two points should be emphasised; firstly, apart from one or two studies discussed below, there is little empirical evidence to underpin the speculations about the reasons for the success of paired reading though in many cases there is considerable subjective data; secondly, the explanations listed will be discussed subsequently under the heading of "theories of reading". The explanations suggested by various researchers for the success of paired reading are set out below.

a. The concentration on a successful performance effectively selects and strengthens any successful decoding strategies and culls out the ineffective ones.

b. The modelling function of the parent and the fact that it is more effective than that of the teacher.

c. The immediacy of the feedback; the task is rewarded by the parent's praise and is also self-rewarding.

d. The message is understood before it is read.

e. Print is used as a prompt to memory.

f. Regular practice where scanning can be "automatized" and hence the focus can be upon meaning.

g. The child's self-esteem is capable of stimulating the various psycholinguistic aspects of reading.

h. The emphasis on the bond between the participants - the "mum" effect already referred to.

i. It is learning to read by reading and getting it all together with a reduced anxiety and fear of failure.

j. The carefully planned and structured approach.

(see Bushell et al, 1982; Greening and Spenceley, 1984; Hannon and Tizard, 1987; Hayden and Fagan, 1983; Heath, 1980; Morgan and Lyon, 1979; Morgan, 1985 and 1986a; Topping, 1985d and Pumfrey, 1987.)

As a general comment on these points, there is no doubt that Morgan (1985) designed classical paired reading with a participant modelling concept in mind "... in which the child receives a model and a continuous prompt for correct reading, during his own attempt to read the words." Morgan's emphasis on praise for signalling the wish to read independently and for correct reading during the independent mode was clearly designed to establish "operants". However he accepts that, given the complexity of the reading process and the variety of theoretical approaches, explanations for its success contributed by other learning principles are clearly valid. He emphasises that hypotheses for his own research were derived from behavioural principles. Morgan (1985) is now concerned that additional theoretical considerations yield ideas for the continuing practice of paired reading whilst believing that the research findings

presently available support some behavioural explanations, as is evident from the preceding analysis. Beard (1987) uses the analogy of learning to drive as illustrative of what happens in paired reading. Learning to drive involves the instructor with a duplicate set of clutch and brake pedals and he sometimes leans across to assist with steering and gear selection; "The availability of prompts and assistance ensured that I learned to drive by learning through an appropriate experience of what driving is really like." Hannon and Tizard (1987) adducing evidence for Item (j) above are of the opinion that parental help with reading only suceeds when it is part of a carefully planned approach.

In a series of studies conducted in Derbyshire primary schools Miller et al (1985) and Miller (1987) draw some useful conclusions which have a bearing on this present research. They were seeking to determine which characteristics of the paired reading technique correlated with reading gains. They looked at four variables: total time spent on paired reading, the percentage of words read independently and the quality respectively of the independent and simultaneous modes. "High quality" was defined as the degree to which parents conformed to the recommended paired reading technique. Though the correlations were not high the suggestion is that it is the quality of the independent reading in the sense of a tutor allowing at least a four second delay for correction of a word before a return to simultaneous reading which was significant. Miller (1987) goes on to argue that whilst

simultaneous reading itself does not contribute to reading success, it is the return to simultaneous reading after the child has made errors during the independent mode which is important because parents are thereby restrained from engaging in criticism which they habitually find some difficulty in abandoning.

Miller warns that too much simultaneous reading may be detrimental; though he does not provide any reasons for the statement it may derive from suggestions that, where simultaneous reading is overdone, a child's reading speed may be adversely affected. It would seem that such a study does not warrant firm conclusions and that too much stress upon the correlational analysis of isolated features of paired reading might detract from the fact that the whole is often greater than the parts. Such an evaluation of the precise factors of paired reading which contribute to its success would be a laborious and time consuming exercise.

Tizard et al (1982), whilst they are in favour of further research if the variables underlying the relationship between parents hearing children read and reading attainment are to be understood, stress that the lack of understanding may not be important for most practical purposes. In similar vein is Topping's (1984) comment that "Paired reading will work in different ways and at different levels for different pairs."

Miller (1987) makes some interesting speculations that, under certain circumstances, paired reading is likely to be particularly successful: "When the teacher or parent is reluctant to begin some form of parental involvement,

when ... the child needs some incentive to choose his own book, at least in the early stage, before he will begin;" and when "The parent finds it extremely difficult to check negative reactions to the child's errors." It should be stressed that these comments are largely intuitive, based on some observations and inadequate correlational data.

3.11. PEER AND CROSS-AGE TUTORING

3.11.i. Its origins

Before looking at the origins of peer and cross-age tutoring it will be helpful to avoid the cumbersome repetition of the term and call it "tutoring" where general terminology is required and also to prefer the use of the term "pupil" instead of "tutee".

The antecedents of peer and cross-age tutoring are somewhat different from those of parental tutoring which is predominantly and almost exclusively associated with reading in the UK at present, at least insofar as teacher/parent initiatives are concerned.

Allen, (1976) suggests that the dictum "Qui docet discit" (He who teaches learns) probably testifies to the persistence of children used as tutors through the centuries. The Moravian teacher Comenius, in the early seventeenth century, uses a similar dictum: "He who teaches others teaches himself". Classical references are of interest. Conrad (1975) notes that tutoring as an educational tool dates from the time of Plato. Krouse et al (1981) refer to the first century Roman rhetorician Quintillian who mentioned the idea of older children instructing younger children and the adoption by seventeenth

century Jesuits of a formal tutorial system. As Salmon (1932) also observes, monitors were prescribed in some of the statutes of Elizabethan grammar schools and employed sporadically through the ages at home and abroad.

At the beginning of the nineteenth century tutoring had two able proponents: Andrew Bell, who published a book in 1798 entitled "An Experiment in Education Made at the Male Asylum of Madras..." and who used "... a few good boys selected for the purpose, as teachers of the respective classes ..." and Joseph Lancaster who observes, writing in a book published in 1803 "This system of tuition is mutually for the advantage of the lads who teach and those who are taught; by it the path of learning is strewed with flowers..." Predominantly through their efforts and after Andrew Bell's return to the UK the practice of tutoring proliferated here. The Bell-Lancaster system, as it came to be called, attracted widespread public attention and acclaim. Joseph Lancaster was particularly vigorous in publicizing it and in 1816 it was estimated that over 100,000 children were being taught by the system in England and Wales (in this respect see Salmon, 1932). The increased allocation of public money to education in the late nineteenth and early twentieth centuries and the growth of professionalism among teachers largely contributed to the decline of the tutorial school.

However it is in the old one-room village schools where much interaction took place among children of diverse ages where tutoring lingered on. Allen (1976) records that, in a review of 110 one-teacher schools in 1974 some form of

regular tutoring took place in 31% of schools and, in another 25%, informal tutoring. There was much asking for help and much listening to older children's lessons to the benefit of younger children to whom the older children felt a sense of responsibility.

Bruner (1972) has made some important observations about tutoring which are perhaps displayed to greater effect if they are placed within an historical context. He discusses the enormous difficulties created for the young in contemporary society by the necessity for delaying their vocational identity; for a lengthy period of time it is possible, he argues, to enact only one legitimate role, that of student. Bruner urges strongly "... that we use the system of student assisted learning from the start in our schools." as one means of dealing with the psychological problems associated with prolonged schooling in a technological society. Bruner's comments are supported in the USA by the Coleman Report (Coleman, 1974) who argues that youth should have the opportunity for responsibilities that effect the lives of other persons and one of these strategies was the responsibility for tutoring other children (see Allen, 1976).

3.11.ii. Experience of child-tutoring in the USA

The potted history just oulined is very sparse but it does provide some idea of the precursors of the present enthusiasm for child tutoring. The resurgence has been particularly strong in the USA. Felman et al (1976), in a critical review of tutoring research, refer to the big increase in tutoring programmes since the 1960's. A survey

of the use of tutoring in the USA conducted by an agency called The National School Volunteer Program found that more than two million volunteers were tutoring more than five million children in a host of programmes. von Harrison and Reay (1983) reported a "recent" ERIC search producing over 270 references since 1968. Their survey was confined to primary schools across the USA and sampled teachers' attutudes to child tutoring in general. The views of 3,000 teachers were obtained. Peer or cross-age tutoring was rated as very or moderately valuable by 60% of the sample and a further 30% considered the results "somewhat valuable". Felman et al (1976) also took a nationwide stratified sample taken at random of teachers' opinions of parental, cross-age and peer tutoring. They found that 60% of 2,597 respondents were very or moderately favourable towards both parental and student pairings which tallies with the von Harrison survey findings. Their analysis of 77 studies also showed that, on average, students "made two years' growth in one year". Conrad (1975), in a review of a large number of American peer tutoring studies, found that in all the studies reviewed there was a trend for tutoring to be superior to classroom instruction alone. It should be stressed that only a small proportion of these studies are confined to reading. However along with paired reading studies in the UK tutoring research in the USA leaves a lot to be desired. There is no evidence that Devin-Sheehan's (1976) assessment of studies has been heeded when he concluded that research was unsystematic, haphazard and lacking suitable controls.

Later Devin-Sheehan et al (1986) conducted a critical review of research into child tutoring in the USA which is exclusively concerned with cross-age tutoring using a variety of highly structured reading programmes. This diversity makes comparative studies impossible particularly where paired reading is concerned. The studies reported all use an "independent" reading mode, indeed, as noted above, there is no evidence that paired reading in the classical form developed by Morgan and Topping is used in the USA. Devin-Sheehan et al (1976) conclude that these programmes have effectively improved the reading performance of pupils and, in some cases, that of the tutors.

Two main reasons were given for the resurgence of tutoring in the USA. Paolitto (1976) is of the opinion that renewed interest in tutoring was triggered-off by a concern about an impending teacher shortage though this is certainly not true of the UK. Krouse et al (1981) attribute the reasons for the increase in peer and cross-age tutoring in the USA after "most western nations lost interest" during the late 1900's, to the opportunity it gave prospective teachers to gain experience, to the challenge to be innovative as a result of the general climate of social reform and the goals of compensatory and anti-poverty programmes and finally to the notion that it was time to be cost-effective (also see Conrad, 1975).

3.11.iii. Experience of child tutoring in the UK

Contemporary experience in the UK of studies using peer and cross-age tutors demonstrates its very recent growth here. In a "Paired Reading Bulletin" which includes

an account of the first national paired reading conference held at Dewsbury, West Yorkshire on November 3rd, 1984, Topping (1985a) records that one of three main themes pervading the contents of the bulletin was the increasing use of classical paired reading as a technique in peer and cross-age tutoring projects in schools. Winter (1986) comments that the first reported peer tutor project in paired reading in the UK took place in Cleveland in the spring of 1984.

Topping (1987c) summarizes ten projects which have a mixture of peer and cross-age tutoring. He explains that all ten projects were operated by classroom teachers with only minimal support and guidance in paired reading methods or research techniques and thus the evaluation, the design and method were varied. The age of the pupils varied from eight to fourteen years and that of the tutors from eight to eighteen years. In seven out of ten projects pupils were delayed by up to four years; the other three were of mixed ability. Topping (1987c) adopts a similar argument in defence of his evaluation as with the much more comprehensive evaluation of parental involvement in paired reading, that the "meta-analytic" significance of collating results of a large number of projects is likely to be greater than their individual impact since use of reading tests to measure meaningful gains over short periods of time is questionable. Indeed he adds that seven different reading tests were used in these ten studies all of which have been criticized on one count or another. A summary of the results shows that both tutors and pupils made an average

improvement in reading skills of four "tnp". Topping also observes that tutors in cross-age projects tended to gain more than tutors in peer projects and submits that the evidence cited is "adequately substantial" to merit the dissemination of peer tutored reading on a wider basis. He adds that further work is needed on gathering the subjective perceptions of project participants in a structured manner which would render them susceptible to analysis.

Of studies not included in the Topping (1987c) analysis both Crombie and Low (1986) and Townsend (1986) using small groups with controls tend to support the conclusion that peer tutoring is a viable alternative to parent tutoring with a similar impact on pupils' reading accuracy although for comprehension peer pupils did not show up as well. Townsend (1986) helpfully comments that any fears teachers might have about using older children as tutors can be dispelled because of the progress which they also make. She does however believe that parental tutoring is preferable because of its beneficial side-effects on relationships and behaviour. However side-effect benefits are not confined to parent tutoring as will be seen below.

Winter and Low (1984), using fifteen cross-age pairs, found that children preferred being helped by other pupils rather than by teachers or parents. This was a short study of only six weeks and three fifteen minute periods per week. Litchfield (1986) reports a cross-age tutoring project in Leicester primary schools which differed in some respects from classical paired reading. In this study fourth year junior children tutored first year junior children in

reading. She claims that the two-fold aim was achieved by improving the reading performance and attitudes of the younger children and of developing a sense of responsibility, confidence and care for others among the older children. No data are supplied.

A study of peer-tutoring in the UK by Wheldall and Mettem (1985) is being treated separately because it is probably the only thorough study undertaken in Britain. Whilst thay do not use paired reading their strategy is a valuable contribution to its study because of the refinements of method used. They use the "pause, prompt and praise" technique which they say was inspired by the work of Clay (1979) and resulted in the development of this behavioural method for tutoring oral reading by McNaughton and Glynn (1981) in New Zealand. The method is based on a model of reading which assumes that readers rely heavily on syntactic and semantic information to predict where errors would naturally occur; self-correction was also a natural and desirable behaviour. Research showed that attention by a pupil to an error should be delayed by more than five seconds; thus pupils were encouraged to self-correct and reading accuracy improved. If no self-correction was forthcoming up to two prompts were applied and finally, if necessary, a model. The "praise" part of the technique is encouraged at appropriate times and after self and prompted corrections.

Their study took place in a comprehensive school in a large Midland's industrial town. The experimental group consisted of eight sixteen year old low achievers who were

trained as tutors; their pupils were eight twelve year old remedial children. There were also two matched control groups, one receiving untrained tuition and the others were required to read silently without a tutor. The pairings were all same sex. The experiment was spread over eight weeks and involved 24 sessions.

The reading age, as measured by The Neale Analysis of Reading Ability (1966), improved by six months in the eight week period for the experimental groups; 2.4 months for the first control group and 1.8 months for the second control group. By contrast with paired reading schemes Wheldall and Mettem (1985) followed the McNaughton and Glynn (1981) practice of using a school reading scheme. The scheme selected allowed pupils to progress through levels "... whilst maintaining a "reasonable" level of difficulty and whilst also sustaining their interest. However promotion to a higher level provoked some difficulty because the series was based on levels of approximate reading age which was unsatisfactory due to variations between reading tests; this also gave initial placement problems. Wheldall and Mettem (1985) describe strategies to cope with these two contingencies which leave the inevitable questions: why not let the children choose their own book? and to what extent did this contingency process affect the children's progress? Hopefully it will not be long before other cross-tutoring studies will be undertaken in the UK using the pause, prompt and praise technique with larger samples to enable a more mature judgement to be made of its effectiveness.

3.11.iv Claimed advantages and disadvantages for peer and cross-age tutoring of reading

A summary of peer and cross-age tutoring in paired reading yields the following claimed advantages or disadvantages: advantages are said to be that both tutors and pupils improve, that it is easy to monitor and cheap, that there is increased friendliness, it is easy to change partners and, where disturbed children are used as tutors, there is an improvement in behaviour. Disadvantages are said to be the amount of space required, the noise level, the problems of cover for part classes, interference with the normal reading programme and the difficulty of sustaining motivation (see Doyle and Lobl, 1987 and Topping, 1987c).

3.11.v."Ideal" type of tutor

Devin-Sheehan et al (1986) make a number of additional observations about the most effective type of tutor, sex-pairings and tutor-pupil age differential. They conclude that empirical evidence produces conflicting results about the most effective "type" of tutor; the suggestion is that a very broad range of tutors can act effectively and also that tutors with a variety of personal characteristics benefit themselves from acting as tutors to younger children. Based on academic gains Devin-Sheehan et al (1976) report that the literature shows no difference between same sex or opposite sex pairings. An improvement in racial attitudes is recorded deriving from cross-race tutoring though generally the authors say there has been insufficient research in this area. There is also a lack of available research into the optimum age differential between

tutors and pupils. Although it is only on the basis of one study Devin-Sheehan et al (1976) also report that there is a suggestion that superior results are obtained when tutoring is "in place of" classroom time instead of "in addition to" which is a point needing further research evaluation. In any case there would be more "time on task".

Where the personality characteristics of the tutors are concerned however Cloward (1976) shows that they would appear to be better predictors of whether their own reading would improve than academic and intellectual characteristics. They conclude that there is no clue as to why the "... first four variables to enter the prediction formula for pupil gains were scores from the tutors personality scale." and it is suggested that this could prove a fruitful area for research. Bush (1987), in a UK study, required that tutors had a sympathetic nature, good reading ability and an interest in books.

3.11.vi. The benefit to tutors

One influential, if dated study, of a cross-age tutoring programme of primary age children in reading skills where the tutors were 250 fourteen and fifteen year old children is reported by von Harrison and Reay (1983). They quote The American National Commission of Resources for Youth (1968) who showed that both tutors and pupils benefited significantly. Benefit to the tutors is repeatedly emphasised by American researchers (cf Cloward, 1976; Felman et al, 1976; Paolitto, 1976 and Sarbin, 1976). In a research review Sarbin (1976) comments "One conclusion appeared over

and over: profound scholastic effects are produced when an older child engages in a tutoring relationship with a younger child." Paolitto (1976) also reviewed sixteen studies and found that ten specifically benefited the tutor, whilst the other six were divided between the tutor and the pupil.

Winter (1986) suggests that the explanation for the reading gains of tutors is to do with the opportunity given to re-evaluate attitudes and refine and develop reading skills in a similar way from the pupil. Other reasons advanced are that the tutor feels "powerful" and generally good about himself, that the role of the tutor is beneficial to a child's growth and the possibility that children can explain skills and concepts better than adults and learn to relate to each other and to other members of the class (cf Allen and Boraks,1978 and Bowermaster, 1978).

3.11.vii. Need for rigorous research

It is necessary continually to re-emphasize, when considering individual surveys and studies, the need for definitive research accompanied by "sound" methodology. Sharpley and Sharpley (1981) noting the proliferation of peer and cross-age tutoring over the years, record the common absence of control groups in research studies. An earlier study, that of Stainback et al (1975), urges further research arguing that methodological weaknesses tend to render findings ambiguous. Allen and Feldman (1973) stress that "Tutoring by children is a very complex psychological process: it involves elements of cognitive social and

affective behaviour from both the tutor and the tutee ... and a great deal of additional empirical research is necessary." If the need for research into the technique of peer and cross-age tutoring itself is very necessary it is equally imperative that comparative studies are made into child tutoring using the classical paired reading technique.

CHAPTER 4

PAIRED READING IN THE CONTEXT OF MODELS OF READING

4.1. PLAN OF CHAPTER

After a review of the literature relating to definitions and models of children's reading acquisition both a definition and a model will be developed. With the aim of enhancing the value of the model a tentative attempt will be made to widen its scope to incorporate cognitive style. Research into the role of cognitive style in children's learning processes is somewhat diffuse because of the large number of styles which various authors have claimed to identify. However the cognitive style "conceptual tempo" (impulsivity/reflectivity) has been thoroughly researched and is probably the leading contender in establishing a link with children's reading acquisition.The ensuing literature survey of cognitive style and of conceptual tempo in particular will adduce reasons for its inclusion in the model of children's reading acquisition; not the least of these reasons will be the postulated link of conceptual tempo and the psycholinguistic model of reading acquisition.

4.2. LACK OF CLARITY OF DEFINITION

There is no doubt that a failure to agree on a definition of reading lies at the root of much professional

friction particularly among practitioners immediately involved with children, namely teachers, educational psychologists and speech therapists. The degree of precision needed or indeed possible in relation to a definition or model will be discussed below; it maybe that a model provides better guidance to educators concerned with children's acquisition of reading than a definition alone. Twenty years ago a number of writers were urging the need to provide good definitions. Spache (1964), quoted in Clymer (1968), was insisting that a clear definition of reading was essential to planning the goals of instruction programmes and Latham (1968) was arguing that, in the absence of a definition, clarity of aim must suffer. She also argued that prevailing models and definitions affect training college practices: if reading is seen as a decoding process infants' teachers will be trained in an understanding of the correlation of visual with auditory images for example.

Jenkinson (1969) also demonstrated that the lack of an accurate definition had already plagued educators for many years. Whether present attempts meet their objections can be judged after the ensuing discussion. Perhaps these attempts will be less likely to be subject to the criticism of Jenkinson (1969) that, because the learning and teaching processes were rarely examined independently "... the intellectual dynamic activity of the reading process has been confused by linking this with the techniques and skills which need to be acquired in the learning to read process." Nevertheless the complexity of the reading process is increasingly realized as Southgate et al (1981) observe (see

also Crystal, 1984) which means that definitions do not trip lightly off the tongue.

The situation is well depicted in the poem by John Godfrey Saxe "The Blind Men and the Elephant"; our discipline orientation, the procedures we use to study the process of reading and the methods we use to teach it give each of us a limited perspective of "what it is" and so all our views of reading processes are partly in the right and all in the wrong.

The range of contributing disciplines does not make the problem of definition or modelling easier: philosophy, linguistics, social /cognitive /developmental /educational/ physiological psychology to name but a few. Jenkinson (1969), after examining the contribution which various disciplines could make to explicating a definition, could still speak of "... the eternal conundrum of the meaning of meaning in reading." It was apparent to him that it was necessary to bring these related disciplines together in co-ordinated research efforts. The sequel will show that in part this has happened. (A resource book quoting much of the literature referred to in this present study dealing with models of reading is that of Spooncer, 1976.)

It will be useful to look at attempts to categorize the various models. Lest confusion be compounded these categories will be kept as few as possible but in spite of this there is some overlap. Hittleman (1978) estimates that as many as 77 models of reading acquisition have been proposed, the preponderance reflecting an information processing point of view with the present focus

KENT LIBRARY UNIVERSITY

being on cognitive aspects and a consensus of opinion that reading is a complex of cognitive skills - linguistic, psychological, psycholinguistic and physiological processes combined.

4.3. MODELS OF READING ACQUISITION

As a basis for discussing models of reading acquisition the categories of Miller (1981) are utilized namely psycholinguistic, developmental (which is the equivalent of Miller's "underlying psychological processes"), behavioural, humanistic and primary skills.

4.3.i. A psycholinguistic model

Goodman (1967) describes the psycholinguistic model as a guessing game, a sampling to confirm prediction. In this respect, Furth (1970), quoted in Athey (1971), launched an attack on the "obsession" of some schools with reading to the exclusion of what he sees as its primary function, teaching children to think. The implication here is that if young children are given an enriched environment which promotes thinking, reading skill can be acquired almost casually and informally in the way it is suggested language is acquired. In the psycholinguistic model the flow of information is two-way; syntactic and semantic predictions are being confirmed or rejected by reference to the print and this sampling is informing new predictions (see Miller, 1981). It will become apparent that the psycholinguistic model of reading of which Frank Smith is one of the leading proponents (see Smith, 1985) has important implications and explanatory power for this study. Indeed Morgan (1986a), for example, is of the opinion that

the model needs to be acknowledged as an explanation for the success of paired reading. For these reasons considerably more space will be devoted to a consideration of the psycholinguistic model of children's reading acquisition than for other models. It should be noted that what is termed the "cognitive" model of reading acquisition is in large measure indistinguishable from the psycholinguistic model. This is evident from Hittleman's (1978) summary where he speaks of the selective attention to the bits and pieces of a communication, to anticipate what will come next and to look selectively for the key words and phrases that convey the basic meaning of the message.

Very reluctantly Smith and his colleagues have bowed to pressure and have agreed to call their approach to early reading acquisition "psycholinguistic". The flexibility of their model is reflected in their rejection of precise terminology. They make two important points: first that the term psycholinguistic "...should be regarded as an identifying label for an area of theoretical concern, not a philosophical commitment."; secondly, the composite nature of the term indicates the common ground where psychologists and linguists meet to explore the way language is actually learned and used. Essentially however Smith and Goodman (1971) expressed their initial resentment at this label by saying that it made as much sense "...as a culinary method of boiling eggs."

Currently the psycholinguistic model is popularly and meaninglessly represented as the "reading approach". Smith (1982) contrasts the behaviourist view of learning

with the psycholinguistic model of reading acquisition. He argues that a discussion of which is the "right" view is sterile because there is no means of deciding between the two - they are both trying to make the same evidence explicable though in quite different ways. The question should be which theory is the most useful? No one theory can claim to offer a complete account; in constructing a working model most of those described will contribute something useful with Smith's theories now to be described playing a co-ordinating role.

At first acquaintance Smith's statements about reading will appear to be simplistic. What he has done is to challenge traditional and established methods of teaching reading which have been demonstrably unsuccessful. He has stripped away the highly structured programmes for teaching children to read with their almost machine-like efficiency to reveal a person underneath trying to get out. That he is not alone in holding this view is shown by Goodman's (1979) pungent comments. He avers that we must reject the skill sequences, "mastery learning" programmes, "direct teaching", legally mandated minimal competency, simplistic phonics programmes and the evaluation establishment which dominates the teaching of literacy through tests, the federal and state guidelines which mandate tests and technology, but lock out knowledge and humanity. The transatlantic emphasis is nevertheless equally apposite in the UK and the element of caricature is not inappropriate. Smith (1977) maintains that children need two basic insights to learn to read; that print is meaningful and that written language is different

from speech. Both of these insights are acquired and developed through hearing written language read aloud. Smith (1985) makes an important and subtle distinction when he explains that children do not learn to read in order to make sense of print but that they strive to make sense and, as a consequence, learn to read.

Continually underpinning Smith's advice is the statement that "... a child learns to read by reading; it is the teacher's job to facilitate their understanding and to permit them to make mistakes without the disruption of correction." He reiterates that "It is not difficult to make reading impossible."; all that needs to be done is to ensure that the reader is apprehensive about making a mistake. It is appropriate to mention here Smith's (1985) summary of the constraints placed upon reading by the brain's ability to process information and the manner in which these systems can be overloaded. In terms of random letters the limit to how much can be seen at any one time is four or five; the rate at which the brain can identify random letters in reading is also four or five letters a second. In addition the average number of digits which can be retained as a sequence in short-term memory (STM) is seven. Smith shows how that a concern to provide a beginning reader with a mass of detailed information about letter sounds and strategies to sound out words is not only confusing but overloads the brain's capacity to process information. If a child is expected to read nonsense, i.e. words in isolation, progress in learning to read will be minimal. If the teacher ensures that what they are reading makes sense to them the four or

five random letters become four or five words; the same amount of information but seen in a flash because they make sense.

Smith (1985) also demonstrates how tunnel vision occurs when the brain is overloaded with information - the width of the field of view is restricted. He wisely points out how tunnel vision can also occur because children have insufficient prior knowledge of what they are required to read and it is the teachers' task to supply it. Similarly STM can be overloaded by too much attention to the unnecessary detail of print whereas it is well able to hold six or seven "chunks" of meaning which also facilitates transfer to long-term memory (LTM). In summary he recommends that readers need to make use of all forms of redundancy in written language to avoid overload - orthographic, syntactic and semantic - and clearly pictures and diagrams come into the same category. Goodman and Goodman (1979) outline the process very tellingly; they describe readers' integrating grapho-phonic, syntactic and semantic information as they strive to construct meaning. Somewhat dramatically they speak of reading consisting of "...optical, perceptual, syntactic and semantic cycles each melting into the next as readers try to get meaning as efficiently as possible using minimal time and energy." Nevertheless putting children into a "garden of print" does not enable them to read of itself.

Having considered Smith's (1978) basic statements about children learning to read it will be instructive to consider what he and his colleagues, who typify the psycholinguistic viewpoint, present as more definitive

explanations. Goodman (1967), in his early work, was calling reading a selective process which involved partial use of available minimal language cues which were selected from perceptual input on the basis of the reader's expectation. Processing of this partial information led to tentative decisions which were confirmed, rejected or refined as reading progressed. Goodman (1980) draws attention to research in the early 1930's which provided evidence that young children were actively involved in self-learning in the area of language, reading and writing to the extent of categorizing speech sounds and inventing their own spellings. She also argues that skill in reading does not necessarily imply greater precision, but more accurate first guesses based on better sampling techniques, "...greater control over language structure, broadened experiences and increased perceptual development." She quotes research which would indicate that, even with the beginning reader, assuming that the reading material is fully formal language, there is evidence to show that they begin to sample and draw on syntactic and semantic information almost from the start, though clearly more graphic information is needed and a greater "precision" than for skilled readers. Later Goodman (1972) set his views in a wider setting. He accuses teachers of teaching reading as a set of skills to be learned rather than a language process to be mastered, of treating children as though they were beginners in language learning rather than as competent users of oral language and of feeding them with strings of letters or strings of words thus ignoring the language structure. He affirms that there is no evidence

that teaching children to match letters to sounds is a necessary or desirable step in getting meaning from written language. However it is submitted in the light of the work of Bryant and Bradley (1985) that both Goodman and Smith are too dismissive of the value of phonics. At times they both appear to adopt a pragmatic and flexible approach to other models of reading whilst also being outspokenly intolerant.

Nevertheless the message is consistent: children learn to read in spite of teachers. Goodman (1972) draws a parallel between the childs' speech moving from unintelligible babbling to effective speech; a range of strategies is needed from the beginning which increases their control over the whole process, mastering details only after the whole has moved forward. Similarly, in reading, provided the beginner is exposed to "... whole, natural, meaningful language" the child progresses to proficient reading through successive approximations. Goodman regards motivation for language learning as intrinsic because people need to communicate. Instruction is needed but it will only be successful as it capitalizes on children's language learning ability and existing language competence enabling them to acquire useful learning strategies.

Burke (1977) adduces many studies to show that children appear to form strategies for remembering familiar words the nature of which is linked to a growing proficiency whereby their errors are grammatically acceptable in context and cause only slight, if any, loss of meaning. Carter and Stokes (1982) suggest that young children show considerable metalinguistic awareness developing three strategies to

extract meaning from print: a decoding strategy, a meaning strategy and a memory strategy. Research showed that all children developed some confidence with each approach but most revealed decided, if temporary, preferences for specific approaches. They conclude that a continuing search for the strategy to match the method is fruitless. All strategies should be integrated into a single approach (also see Hittleman, 1978 and Lundsteen, 1977).

Smith, in similar vein, emphasises that children learn to read by conducting an ongoing series of experiments. He makes much of the "experiment" being a prediction: prediction is the prior elimination of unlikely alternatives, asking questions and comprehension is getting these questions answered. By thus minimizing uncertainty, Smith (1985) maintains, the visual system and memory are relieved of overloading. He gives the simple example of a child achieving insight when he can predict meaning although he is unable to recognize a word - e.g. a label "CARDS" in a shop. It is this identification of meaning in a text without the necessity to identify individual words which, Smith stresses, is the hardest idea to grasp in his book; meaning doubles the rate at which we can read and a lot of the mistakes children make, make sense when they discover they should not waste time looking at individual words.

Smith's(1985) advice to teachers is quite succint. He is anxious to emphasise that, when he says children cannot be taught to read, he means that it is the teacher's task to set problems and leave children to discover solutions. It is this approach he argues which is

misunderstood by teachers because they will not accept that it is possible for children to learn to read without teaching sub-skills. Smith (1982) sees teachers as facilitators and guides, developing intuition and insight and, where individuals are concerned, getting to know their feelings, their interests and abilities. In this respect no formal programmes are adequate and indeed programmed instruction can be a systematic deprivation of information.

Stauffer (1975), quoted in Hittleman (1978), adds another important dimension: "It is through pupils' action upon materials and their interaction with each other that sound intellectual reading skills and appropriate emotional dispositions are best acquired." Whilst this is probably more true of older children it is one of the few comments to refer to interaction. It is submitted that much of the impetus for learning to read, indeed, to make any progress with a child who has lived with discouragement, deriving from whatever source, is firstly the establishment of a relationship with his teacher and secondly with his peers. This may also have to do with the incidence of maladjustment already referred to associated with some categories of delayed readers who have been deprived of affection and care and for whom the relationship achieved during paired reading may prove to be such a beneficial experience.

Smith (1985), by way of summary gives a list of "DO NOTS" for teachers which gives considerable insight into his model of reading. They are summarized below.

a. DO NOT aim for mastery of the rules of reading; they may become useful after some skill at reading has been developed.

b. DO NOT ensure that phonic skills are learned and used.

c. DO NOT teach letters or words one at a time, making sure each one is learned before moving on. It has been calculated that eight year old children learn nearly thirty words daily - they don't get the credit for these fantastic feats.

d. DO NOT make word perfect reading a prime objective; too much attention is devoted to individual words.

e. DO NOT discourage guessing: insist that children read carefully; comprehension is less likely and short-term memory is overburdened.

f. DO NOT identify problems as soon as possible: it creates anxiety and reading can be made almost impossible.

g. DO NOT correct errors immediately.

h. DO NOT use every opportunity during reading instruction to improve spelling and written expression and also insist on the best possible spoken English; it will overload the reading task.

Smith's overall conclusions about methods of reading can be summarized as follows: children are incredibly flexible and appear to learn to read despite the method used. "Tens of thousands of studies" (sic) convey one incontrovertible conclusion, that all methods of reading

work with some children and no method works with all children. Smith's (1985) antipathy towards phonic skills is based on detailed analysis. He argues that the links between letters and sounds are too complex and cannot be specified; they are not one-to-one and indeed he estimates that there are about 200 sound correspondences in the 6,000 commonest English words where, in most cases, there is no way of predicting when a particular correspondence applies. The confusion is such that children who are led to believe that they can read unfamiliar words just by "blending" or "sounding" them are likely to develop into disabled readers. He dismisses the argument that phonics aid the understanding of unfamiliar words by saying that children either skip them or make sense from context; the subsequent reading often clarifies the passage. On the more positive side Smith maintains that reading makes phonics progressively possible and that a lot can be gained by demonstrating the relationship between spelling and meaning; words that look alike tend to mean alike; words with different meanings tend to look different.

4.3.ii. A developmental model

The developmental model of reading has been fostered in the USA since the 1930's and has only gained currency in the UK since the second world war. Latham (1968) summarizes the developmental process from "The Sixtieth Yearbook of the National Society for the Study of Education" (Witty,1961) "First, reading is seen as an aspect of the sequence of related progressive changes which follow one another as the individual progresses from birth to

maturity." Its progress forms an integral part of the total growth of the individual, related closely to physical, emotional and social development. In common with these developmental processes the acquisition of reading is seen to be sequential, having its roots in pre-school linguistic and life experience and proceeding through lower order to higher order reading skills. Finally the ideas acquired through reading influence psychological and social development as the child moves through this sequential process. Elaborating on the sequential acquisition of skills Frith (1980) uses the example of reversal errors involving b, d, p and q, pointing out that these errors occur only as frequently in poor readers as one would expect from their reading level i.e. no more than in equally unskilled younger readers. She mentions memory for sequences and left to right scanning as two examples of a large number of skills which, she maintains, are prerequisites for learning to read and which can be regarded as basic milestones in mental development that happen whether or not reading will be acquired later; a part of normal growing up.

It is the acquisition of automaticity of the various processing levels which distinguishes the skilled from the unskilled reader. Each of these levels or milestones has to be passed, not necessarily in sequence, but the failure to pass a milestone can become the focal point of a reading and writing problem which may block progress. Frith (1980) adduces a number of examples such as the "failure" to understand the concept of phonemes, a specific reference to which will be made below. Bryant and

Bradley (1985) summarize a number of studies showing that all children, both normal and backward readers, read in different ways reflecting a deviation in the acquisition of various skills which are broadly sequential. Topping (1985a) makes a similar point by confirming that research is beginning to show a degree of utility when it considers reading as a developmental process with the implication that, at different ages and stages, different types of failure might occur.

In a study of seven, eight and nine year old pupils from twelve county primary schools Burke (1976) suggested that the increasing miscues of a syntactic and semantic nature through the age groups indicated a shift with increasing age from a reliance on mainly graphic similarity clues as a basis for word recognition to the additional use of contextual clues in a search for meaning. Baumann's (1983) research however showed that contextual clues did not contribute as much to increased apprehension span as had previously been reported; though orthographic and semantic regularities did. Lundsteen (1977) is of the opinion that a teacher who accepts the developmentally oriented rationale would base prediction of performance on each childs' stage of developmental language and thought functioning. Whatever the child's concepts of reading are now, they could serve as a base for the next stage. When it is borne in mind that strenuous attempts have been made for many years to produce adequate developmental sequences for reading acquisition this and similar practices are more

easily described than effected.

4.3.iii. A behavioural model

The principles of learning practised by B.F.Skinner and his colleagues are well known and no citation is necessary. Operant conditioning is a powerful instrument for the shaping of behaviour. Its basic tenet affirms that behaviour will increase in frequency and be subsequently maintained by the rewards or reinforcements that are forthcoming as a result. As Topping (1985f) remarks the implication is that failing readers in particular who lack intrinsic motivation to read will require stronger or more frequent reinforcement. The social reinforcement which a parent who is hearing a child read is able to dispense can, as Topping suggests, be word-for-word if necessary. This parental encouragement is much more potent than any attempt which the teacher is able to make.

It is submitted that classical paired reading contains many intrinsic patterns of reinforcement. These patterns range from the successful decoding of a new word and hence the continued participation in the reading situation with an interesting book, the activity of making all the cues fit in with small successes breeding success and not least the encouragement which a child derives from enjoying a free choice of book. These features may also be typical of other reading techniques. What makes classical paired reading different is the intimate reinforcing involvement of a parent in particular in simultaneous reading where the child is presented with a model and a continuous prompt for correct reading (see Morgan, 1985).

Morgan also points to the praise for a correct response during independent reading and for signalling to read independently.

Reference is frequently made to "bottom-up" models of processing the written word namely the process which starts with the cues offered by the word filtering through to the brain at the top. As Otto (1982) indicates the theory of learning underlying "bottom-up" views is behaviourism (i.e. stimulus, response and reinforcement) where patterns of nerve conduction are established through frequent use and form the basis for practice activities used in most reading skills.

It is also interesting to note that Athey (1971) adduces the work of Bereiter and Engelman (1966) and Gray and Fygentakis (1968) to support his thesis that operant conditioning models imply that there is no "critical period" beyond which language learning does not take place. They argue that "... the teacher may analyze and build in the child's skill at any point in time by systematic reinforcement of sequential stimuli, calculated to assist the child in learning new generalizations, discriminations and mediating responses." The behavioural model "nicely" complements and augments the developmental model.

4.3.iv. A humanistic model

The humanistic model of reading is exemplified by Lawrence (1972). An hypothesis taken from one of his later studies (see Lawrence, 1985) effectively describes the model: "Children who receive remedial help with the skills of reading will show higher gains in reading if this help is

supplemented by a therapeutic approach aimed at enhancing self-esteem." Lawrence's earlier work, which is considered below, was partly inspired by a quote from Bradshaw (1953) who stated that "At a time when we all pay lip-service to the emotional concomitants of backwardness, it seems odd that all our efforts should so often take the form of a direct attack on the presenting symptom."

There are two problems which render work in this area very difficult. The first problem is that of agreed definitions of self-concept and self-esteem. Lawrence (1981) provides historical notes. He refers to one of the first attempts to define self-concept, that of James (1890), who defined it as a hypothetical construct which is reflexive, the "knower" and the "known" being the same person. Recently, Lawrence goes on, the particular aspect of self-concept termed self-esteem has been studied and is defined as a personal judgement of worth lying along a dimension with positive and negative ends and with behavioural and emotional components. There is a lack of agreement in Lawrence's opinion over whether the term self-esteem should be reserved for a "global" attitude as originally defined by Allport (1937) or whether it should be used in the William James' sense of specific attitudes. Different opinions are also expressed as to whether self-esteem is the degree of correspondence between the "ideal self" and the "actual self" or whether it is the individual's affective evaluation of this discrepancy. Whether also "... self-esteem is the degree to which a person accepts him or herself or whether

it is the person's evaluation of aspects of him or herself - the feeling of worth."

In an attempt to bring some order into a situation which Lawrence clearly believes to be somewhat confused a debt is due to Bailey (1985) who has clearly elucidated some of the issues involved. Many of the following comments are taken from Bailey's dissertation. After noting the "plethora of self-referent terms found in the literature" he conveniently "homes in" on self-concept and self-esteem. Burn's (1977) definition of self-concept is useful: "...that individual and exceedingly private dynamic and evaluative picture that each person develops in his transactions within his psychological environment..." As an aid to understanding, Bailey suggests that there are two main attitude components of self-concept namely self-image and self-esteem.

Self-image or "self-picture" relates to how a person perceives himself consisting of the various roles a person has in life denoted by name, age, sex, bodily feeling, bodily image, job etc. and the resultant "ego-identity".

Self-esteem is seen as "...the extent to which a person approves and accepts himself and regards himself as praiseworthy, either absolutely or in comparison with others." Self-esteem can be considered as being the way a person feels about the self-image and is the emotional or affective component of the self-concept.

There would appear to be three distinct perspectives which an individual may take in his view of

self: (a) the perceived or "cognized self" (self as I am), (b) the "ideal self" (self as I should like to be) and (c) the "other self" (self as I believe others perceive me). In turn these three perspectives can be divided into four aspects: physical, social, academic and emotional.

Research is inconclusive as to the nature of the discrepancies which can occur between these perspectives and between the self-image and the self-concept. Horney (1950) argues that extreme incongruence between the ideal self perspective and the cognized self perspective is a cause of psychological imbalance because of the unattainability of the ideal. Katz et el (1975) challenge this view by suggesting that such imbalances are a sign of maturation rather than disturbance and point to the fact that older children tend to have higher discrepancies. Rogers (1951), a psychotherapist and the eponymous originator of Rogerian counselling, suggests that mental ill-health can be traced back to a lack of congruence between the self-image component and the ideal self-perspective. The effect of therapy is to lessen the discrepancy.

Where the self-esteem component of the self-concept is concerned Cohen (1959) suggests that self-esteem can be viewed as the degree of congruence between the actual self and the ideal self while Argyle (1975) regards self-esteem as the individual's affective evaluation of this discrepancy.

Bailey goes on to discuss factors affecting the development and modification of the self-concept. This aspect can be considered with greater certainty than the

precise nature of the internal dynamics of the concept. Researchers suggest that the self-concept moves from a concrete construction of self in younger or less mature children to abstract constructions of self in older or more mature children (see Livesley and Bromley, 1973 and Kagan, 1982).

Considerable emphasis is rightly placed upon the role of significant others in the development of the concept in children. It is not intended to prolong this discussion by adducing research evidence to support the importance of significant others or whether for example parents or teachers subserve the more important role. What is vitally important is to stress the crucial part that they do play, the "power" they possess to inculcate high self-esteem in children or through neglect to generate negative attitudes with all the implications for achievement.

It is submitted that this is where Lawrence's research has shown how counselling apparently works to restore children's damaged self-esteem with the subsequent benefit to reading progress.

Additional evidence that it is affective factors which have been identified as important variables in learning to read comes from Sawyer (1974). She quotes Athey (1970) who provides a bibliography of the research literature on affective factors in reading. She found that self-concept feelings of adequacy, personal worth, self-confidence and self-reliance seem to emerge as important factors in the relationship with reading achievement. Underachieving readers tend to be characterised by emotional

immaturity, impulsivity and negative feelings concerning themselves and their world. Spache (1954 and 1957) is also quoted as finding that poor readers were inferior to normal readers in interpersonal skills, social participation and satisfactory recreation. Sawyer (1974) comments that the effects of a severe reading disability are so pervasive in the life of a school age child that little remains on which to build feelings o$*I*self-worth. She quotes Shatter (1956) who found that fourth grade boys who were retarded readers made significant gains in reading as well as in maturity, independence and self-reliance as a result of a group therapy programme.

There is a substantial body of literature addressing the problem as to whether self-concept is the cause of increasing academic achievement or contrariwise. Typically Calsyn and Kenny (1977), in a study comparing a counselling approach to a skills approach to academic attainment, concluded that the acquisition of skills preceded the development of the self-concept. An equally thorough study and review of the literature by Schierer and Kraut (1979) found that, in several studies, academic achievement followed from the enhancement of self-concept though they themselves favour the view that learning derives from "... the reinforcement of one's social environment for specific learning skills." - the position of behaviourist social learning theory also favoured by Morgan as an explanation for the success of paired reading. However, generally, Schierer and Kraut (1979) found that there was a lack of evidence from the literature for a causal connection

between self-concept and academic achievement which should in their view create caution among those educators and theorists who have assumed that enhancing a person's feelings about himself would lead to academic achievement. It seems clear that the answer is likely to lie with an interactive model, not as a fence-sitting exercise, but in recognition of the complex interaction between nature and nurture.

A second problem arises directly from the failure to agree upon a definition of self-concept: that of measurement. This will be seen in the ensuing limited review of the literature. Lawrence (1972) conducted a series of experiments with four matched groups of junior school children who were severely retarded. For equal amounts of time they engaged respectively in one of the following activities: individual counselling: equal sessions of counselling and remedial reading teaching, remedial reading teaching alone and no extra provision. After two terms the greatest progress was observed in the order as presented above.

Replication of Lawrence's (1972) work has been undertaken by Lawrence (1985), Cant and Spackman (1985) and Wooster (1986). Whilst the three studies confirm Lawrence's original findings that counselled children make a significant improvement in reading as compared with control groups, in each case different measures of self-concept were used and the processes of counselling differed. Cant and Spackman (1985) used The Canadian Self-esteem Inventory (Battle, 1977) and children were counselled in a group by

their normal class teacher for two twenty minute sessions per week over two months. Wooster (1986) used Children's Self-concept Scales (Piers and Harris, 1969); the counselling involved the teacher instructing children in social and communication skills as necessary. Lawrence (1985) used The Coopersmith Self-esteem Inventory (Coopersmith, 1975) and the LAWSEQ, a self-concept inventory devised by Lawrence (1981). The counselling lasted for twenty weeks with one weekly session of 45 minutes.

Coles (1977) attempted to replicate Lawrence's (1971) study without success. The subjects were second year juniors in three treatment groups of fifteen each: one group received counselling, another counselling and remedial reading and the third group remedial reading alone. Cole found no difference between the groups in terms of remedial achievement. Treatment was limited to a weekly period of 40 minutes over ten weeks. She also claims that there was no significant change in classroom behaviour or indeed in attitude to reading and attributed the failure of experimental groups to improve to the fact that remedial reading and counselling took place outside the classroom. Yet another measure was used for the Cole (1977) study - The Porter and Cattell Personality Questionnaire, Form A (Porter and Cattell, 1963).

In spite of these reservations about the precise dynamics of the self-concept which have led to the use of different test instruments and also to lack of agreement on the methodology of counselling to enhance reading progress, the work of Lawrence and his colleagues retains considerable

significance in explicating the humanistic model of reading acquisition.

4.3.v. The primary skills model

The primary skills model of reading acquisition typically involves the breaking down of early reading into individual skills. Redolent of this model is the controversy between whole word recognition strategies or individual letter-sounding and blending requiring sight vocabulary or phonic methods of teaching.

Research tends to show that backward readers fail to read because they lack an effective phonological code and are therefore unable to categorize words on the basis of their common sounds (see Bryant and Bradley, 1980).

To test the hypothesis that, in many cases, backward readers evince a lack of phonological awareness and are consequently insensitive to rhyme Bryant and Bradley looked at 400 four to five year old children of whom none could read. Children's scores on an initial rhyming test predicted their progress in reading and spelling four years later; they record the results as "resoundingly positive". These results were also confirmed by a longitudinal training study using control groups. They not unreasonably recommend that children should have every possible experience with nursery rhymes, verses and word games before they go to school. Jones (1981) emphasises additional and often taken-for-granted skills which children acquire from their parents; that text proceeds from top to bottom, left to right, left hand before right hand page, etc which may take

a child lacking these skills many months to acquire in school.

Two supportive pieces of research are of interest. Lundberg et al (1980) found that the most powerful determinants of reading and writing skills turned out to be the analytic ability to manipulate phonemes, an ability which could, in their opinion be stimulated among kindergarten children in playful contexts. Tunmer and Nesdale (1985), following Bryant and Bradley's (1985) research, found that phonemic segmentation was a necessary but not a sufficient condition for learning to read. In contrast to this emphasis on rhyme and alliteration the tendency to the "sterile teaching of phonics" is exemplified by Lewkowicz (1980), Marsh and Mineo (1977) and Oloffson and Lundberg (1983) in their attempts to correct the phonemic "deficit". These findings are fraught with significance for teachers.

Liberman et al (1977) also show that children up to the age of seven years gradually move from using a chunking strategy i.e. a whole word strategy using visual chunks or patterns of written words and sequencing of letters to using both a chunking and a phonological strategy. The important conclusion must be that look and say and phonic methods are complementary.

The range of skills which have been successfully taught and encouraged by teachers of reading merit attention.

Bryant and Bradley (1985) refer to "... multi-sensory methods (which) are par excellence tools for forging

links between these things." - "things" being auditory and visual aspects of learning which are not co-ordinated in many backward readers. In particular two books among many have been chosen to exemplify the large range of skills which can be taught. Ives et al (1979) categorize these as follows: visual configuration clues (word length and shape), word detail features, (characteristics of individual letters; dots, crossbars and symmetries), picture clues including maps and diagrams, implicit clues where topic may determine choice of word, explicit clues (synonyms and antonyms), syntactic clues (sentence patterns), word structure clues (roots, suffixes and prefixes) and phonic clues. There is perhaps a danger of over-fragmentation of the reading process but there is a stress throughout the book on presentation in a stimulating manner. Spache (1976) estimates that she provides 470 odd activities similarly categorized. However her suggestions are, it is submitted, more judiciously chosen. She emphasises that skills should be used in interesting and meaningful situations and should be chosen for child interest, ease of direction and for the variety and depth of the thinking involved.

One teaching approach which has proved of great value is worth separate mention here. The so-called language experience approach has been used by teachers with great success over many years. It simply involves teacher and child talking about what the child has been doing, the teacher writes it on the blackboard or on paper, the child writes it in his book and reads it back to the teacher. This can degenerate into merely "get your diaries out" to perform

a daily chore, but used imaginatively it is of much benefit as Goodacre (1971) and Young and Tyre (1983) rightly emphasise.

4.4. A DEFINITION OF CHILDREN'S READING ACQUISITION

It is proposed to provide both a definition and a model of children's reading acquisition and development. The large number of both definitions and models is indicative of the need for further research to provide greater precision of statement though, insofar as they reflect the range of professional emphases, they make a valuable contribution to understanding the reading process. With this in mind it is submitted that the definition and model provided will complement one another; the definition tending to provide greater precision and the model taking particular account of the lack of research evidence and thus being more venturesome in its scope and hence able to provoke further development. Robinson (1966) takes this view of models; that they order observations to permit understanding of underlying relationships between the various components of the phenomena and simplify knowledge so that both research and instruction can proceed in a more orderly fashion.

So little is known about why paired reading is apparently so successful that a definition and a model should help to provide a number of pegs on which to hang possible explanations for its success. Perhaps the pegs provided by a definition are more durable than those provided by a model but ultimately they are the pegs of the future passing through an experimental stage. In constructing a definition a wide ranging sample has been

taken of the literature. Most of the ideas represented can however be found in Melnik and Merritt (1972a and 1972b). The proposed definition is as follows:- Reading is a physiological and psychological activity which attempts to reconstruct and predict the meaning of the written word within the context of sentences. This reconstruction utilises the words of the author conveyed by the printed symbols and the sum total of the visual information - pictures, diagrams and syntactic clues - together with the readers background knowledge.

4.5. A PARADIGM OF CHILDREN'S READING ACQUISITION

The complementary paradigm of reading acquisition is based on one developed by Miller (1981). He mentions two inherent dangers: that each model involves a vast amount of literature and consequently the risk of serious omission is considerable. Miller also cautions against vague hunches which may be equated with well-established experimental findings.

With these two caveats in mind Miller provides an integrated paradigm of the main concepts of five models of reading acquisition which have been considered in the previous sections of this chapter: primary skills, what he terms "underlying psychological processes" (substantially equivalent to the developmental model), psycholinguistic, behavioural and humanistic. He emphasises that these models are his personal choice from a large number of those available. Miller maintains that the advantage of such a composite paradigm is to function as an aide-memoire but

also to prevent practitioners "... from becoming lost in the depths of a single model's literature."

In common with the conclusions of this study Miller concluded in 1981 that the usefulness of the primary skills model to stimulate research and inform the remediation techniques for failing readers was waning. Prior to that date both the primary skills model and the "underlying psychological processes" model (the developmental model) which had dominated American research into reading acquisition since the 2nd world war were dominant.

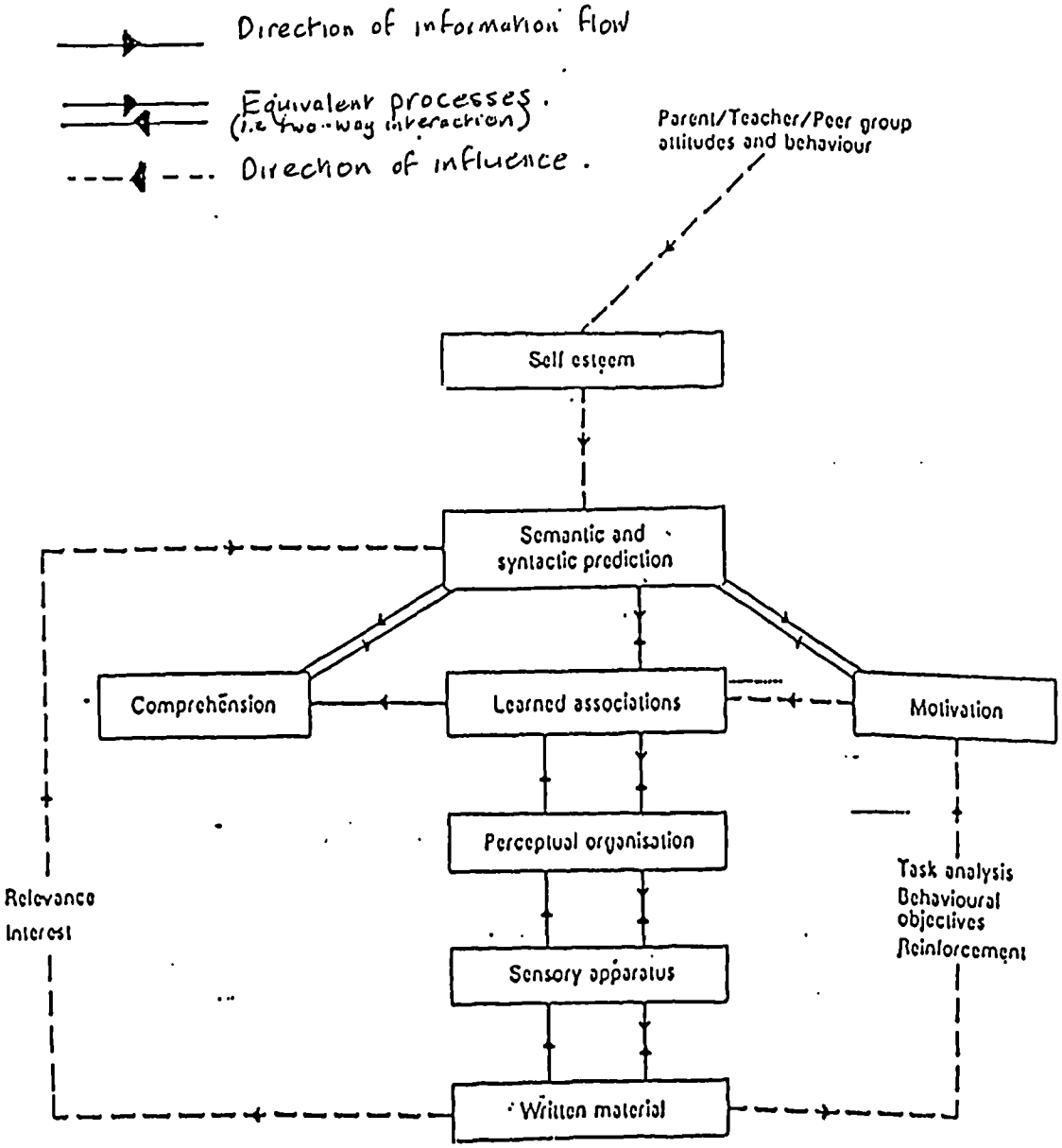
Miller quotes Kahn (1970) who argued that, at any one time, one paradigm is likely to dominate and direct research. Miller considered that the eighties would see the emergence of a dominant model from among the psycholinguistic, humanistic or behavioural models. It is submitted that the evidence adduced earlier in this chapter suggests that the psycholinguistic and humanistic models tend to dominate contemporary research and practice. This would however be difficult to demonstrate conclusively in the absence of a time-consuming analysis. What is however of greater importance for the present study is the recurring linkage of paired reading to both of these models.

NB. It will be noted that to avoid confusion the term "paradigm" is used for the composite "model" and the term "model" for the separate "models" of children's reading acquisition - skills, developmental, etc.

Miller proposed an integration of the five models as portrayed in Figure 1.

Figure 1.

MILLER'S (1981) PARADIGM OF CHILDREN'S READING ACQUISITION



Miller's (1981) paradigm is intended to be sequential in terms of the one-way flow of information along the left-hand route of the central boxes which demonstrate, in his view, the static nature of the developmental and skills models. These models are therefore dependent upon motivation and comprehension to energize semantic and semantic prediction. The right-hand two-headed arrow route through the central boxes is intended to exemplify the psycholinguistic model. The flow of information is two-way where syntactic and semantic prediction is being confirmed or rejected by reference to print. Miller comments "Extraction of meaning from print is seen as a spontaneous activity passing through and largely overriding perceptual and associative processes and requiring little external motivation if material is relevant and interesting."

That motivation is less crucial under the psycholinguistic model is a misleading assumption. For example Miller identifies the role of the humanistic model along the influence path of self-esteem deriving from parents, teachers and peer attitudes and behaviour which is intrinsically a powerful source of motivation in classical paired reading. The behavioural model is incorporated in the paradigm along the path of influence via analysing tasks, setting objectives and taking continual progress measures.

With the absence of any mention of ability it must be the assumption that the model "operates" more or less effectively with the varying degrees of ability of individual children.

Some further brief comments on the paradigm are necessary. It will be noticed that the relationship between the child, the parent, the teacher and the peer group has a crucial part to play in reading acquisition. It may be that the more a child's reading progress is delayed, and possibly the more he or she is behaviourally and emotionally disturbed the more vital to progress do these relationships become. The parent/child relationship should be dominant in the child's pre-school experience and includes breadth of experience of every day life, reading together, the enjoyment of nursery rhymes and word games and such things as the discovery that reading proceeds from left to right, books open from right to left and visual and aural discrimination etc. After the child starts school the relationship between teacher and parent (mutually and consistently) expresses itself in parental support and interest and in the teacher acting as a facilitator providing the skills and judicious encouragement/ reinforcement which enable the child to break the written code. Skills need to to be fed in as a child's development proceeds and often this may be an intuitive process on the part of the teacher to discern when they need to be augmented without creating confusion or overload. The relationship between the child and his peers cannot be ignored insofar as all-round stable relationships tend to aid 'academic' progress.

In examining the advantages claimed for paired reading and the attempts to explain its success which have been adduced by a number of authors, it will be noticed

that, in many cases, their emphases are included in the model. Morgan (1986a) stresses the behavioural basis of paired reading. The simultaneous element is seen as participant modelling, cues are coming from the printed page and from the tutor and at the same time the child is making his own attempt at each word and receiving a continuous feedback from the tutor. Morgan (1986a) comments "Behaviourally, this is a potent learning situation." What he regards as the second main behavioural principle on which paired reading is based is that of praise or positive reinforcement to increase correct reading. It is also true that the enjoyment derived from paired reading by both children and parents is mutually reinforcing. Morgan (1986a) adds that it would be remarkable if no other factors contributed to the success of paired reading and acknowledges the contribution of psycholinguistic factors.

Smith (1982) adopts a similar stance arguing that the behavioural and psycholinguistic models make some evidence explicable in different ways - no one theory can offer a complete account. Smith (1982 and 1985) together with Goodman (1979) stress the concepts of prediction, relevance and interest, experience, use of redundancy and feedback in their psycholinguistic model. Heath (1980), Miller (1981), Scott (1983) and Barrett (1986) agree that the paired reading technique contains many features of a psycholinguistic model of reading.

The skills model which is implicit in Bryant and Bradley (1980) and has been popular for many years is represented in the paradigm by the skills and experience the

parent is able to inculcate in the child during the pre-school period and later by the teacher in his/her role as "facilitator". Wareing (1983) stresses the humanistic model of what is happening in paired reading and indeed the humanistic model referred to by Miller (1981) and illustrated in the work of Lawrence (1982 et seq) is implicit in the relationship represented in this composite paradigm, in the "shared" experience and in the "mum" effect emphasised by Heath (1980).

Pumfrey (1986) regards paired reading as based on a sound theoretical basis in its recognition of cognitive, affective and motivational aspects of learning. He adds that "... it is a potent and beneficial educational prescription." Later he is more specific in stating that paired reading, in his opinion, draws on several theoretical orientations each of which is exemplified in the model. He refers to the "top-down" approach of the psycholinguistic model which regards reading as a complex skill, the involvement of "significant others", the modelling by the learner on a more proficient reader along with positive reinforcement and allowing the learner to control the provision of feedback about the text. Pumfrey (1987) concludes that the combination of these components is "... far more potentially potent than the sum of its parts."

4.6. COGNITIVE STYLE

The aim of this section is to provide a justification for including a further element in the paradigm of Miller (1981) viz. the cognitive style conceptual tempo, and also a justification for its inclusion

in the present research study. The concept of cognitive style is said by Messick (1982) to have had its inception in laboratory and clinical studies during the 1940's and, according to Kagan (1976), prior to that time there are no historical antecedents in the psychological literature. Gonsalves (1983) provides a selected bibliography for the years 1978 to 1982. She comments that there are at least twenty cognitive styles referred to in the literature. Two styles, field dependence /independence and impulsivity /reflectivity have been consistently studied with young children. Messick (1982) adds that the reason for their move into applied research and educational practice is the development of suitable tests to measure the styles. Of these two styles only impulsivity/reflectivity appears to be linked with the acquisition of reading skills and early progress. Before discussing these links in more detail it is necessary to define cognitive style in general terms and impulsivity/reflectivity, which, for convenience will be referred to as "conceptual tempo", more specifically.

No one writer gives a satisfactory definition of cognitive style. The following composite definition was developed by Diaper (1985) from Witkin (1965 and 1978), Goldstein and Blackman (1978), Guilford (1980), Saracho (1983) and Messick (1982).

"COGNITIVE STYLE IS A HYPOTHETICAL CONSTRUCT OCCUPYING THE MIDDLE GROUND BETWEEN INTELLIGENCE AND PERSONALITY, WHICH IS ALSO MANIFEST IN DIVERSE PSYCHOLOGICAL AREAS. IT DRAWS ATTENTION TO THE CONSISTENT WAYS IN WHICH INDIVIDUALS TEND TO ORGANIZE THEIR ENVIRONMENT AND TRANSFORM

INFORMATION. IT ALSO DESCRIBES QUALITATIVE DIFFERENCES IN THE PROCESS OF LEARNING WHICH ARE NON-VALUE LADEN IN GENERAL TERMS AND OPEN TO MEASUREMENT BY DEGREE OF SOME MANNER OF PERFORMANCE. THE 'DIVERSE PSYCHOLOGICAL AREAS' INCLUDE INTELLECTUAL, PERCEPTUAL AND SOCIAL FUNCTIONING." The importance of the possible implications for children's acquisition of reading of cognitive style and for its inclusion in Miller's (1981) paradigm are apparent within this definition.

Messick (1982) suggests that the term "style" may be too rigid. Various alternatives have been suggested such as "learning strategy" and "cognitive control" but usage has dictated that "cognitive style" or "learning style" is the most appropriate term. Evidence is accruing, and this will be considered later, that conceptual tempo can be modified with suitable training. This lends support to Messick's preference for the term "learning strategies" which applies an amenability to change. However it may become evident in the light of further discussion that, as Messick (1982) also suggests, both terms should be retained. Thus it would be possible for individuals not only to use a variety of problem solving and learning strategies that are consonant with cognitive styles, but also to learn to shift to less congenial strategies that are more effective for a particular task.

4.6.i. Conceptual tempo

Conceptual tempo has been extensively investigated among others by Jerome Kagan and his colleagues. Brown and Quay (1977) refer to the "Matching Familiar Figure Test"

(MFFT) as the primary index of conceptual tempo. The MFFT was developed by Kagan et al (1963); it has been used in an impressive body of empirical research to which reference will be made later. The MFFT requires the subject to match a figure with a similar figure presented as one of six others which have been altered in some small detail; there are a series of twelve of these. The responses are scored by timing the average latency to first correct match, together with a record of the total number of errors. An operational definition is appropriate for conceptual tempo if only because of its lack of correspondence with popular usage. Kagan (1965) defines conceptual tempo operationally as follows: "Judged by a subject's performance on the MFFT and determined by the means provided in the norms, impulsivity has a short response latency with frequent errors and reflectivity has a large response latency with few errors." Correlates of conceptual tempo serve to amplify the operational definition and are shown in the table below (cf Messer and Brodzinsky, 1979; Egeland et al, 1980 and Peters and Barnfield, 1980).

REFLECTIVITY	IMPULSIVITY.
More persistent.	More unstable in attention deployment and in autonomic reactivity.
Less distractible.	Less capable of sustained attention to visible inputs.
Choosing more difficult tasks.	
Less motorically active.	

Preferring solitary tasks and avoiding physically dangerous activities.	More prone to adopt a strategy of giving the first reasonable hypothesis.
More confident in approach to intellectual tasks.	Poor social and personal adjustment in school.
	Agressive.

Messick (1982) discusses cognitive styles in educational practice and why they should have educational import: they "... promise to provide a more extensive and more functional characterisation of students than could be derived from abilities alone." It is significant that these comments are made with particular reference to the work of Kagan. Of his work on perceptual tempo Messick (1982) comments that accumulating evidence clearly indicates that conceptual tempo at least influences how students and teachers interact. Messick also concludes that, because of the differentiated nature of their value implications they are less threatening concepts to people than are abilities and intelligence and hence more easily and directly communicable. In general, among other categories not directly relevant to this present study, he summarizes the potential contribution of cognitive styles to education as follows:

(a) improving instructional methods,

(b) enriching teacher behaviour and conceptions,

(c) enhancing student learning and thinking strategies,

(d) broadening educational goals and outcomes and

(e) tuning the stylistic demands of learning environments.

Ehrhardt and Corvey (1980), in a similar analysis of cognitive styles, judge that they are all based on four basic precepts: that individuals prefer to learn differently, that institutions have a responsibility to consider cognitive style in instructional delivery, that individual learning styles are identifiable and that institutions and students have a responsibility to structure their learning environment in accordance with their cognitive style.

4.6.ii. Conceptual tempo in teaching

Continuing in general terms there is no doubt that research into conceptual tempo is proving to be more promising as an aid to the teacher. The nub of the problem for research is summarized by McKinney (1975) in a very thorough examination of the problem solving strategies of reflective and impulsive children. He concludes that "... greater attention should be devoted to the manner in which task information is processed by reflective and impulsive children rather than the tempo of processing." McKinney's data indicated that reflective children process task information more efficiently than impulsive children and used more systematic and/or "mature" strategies. As recently as 1981 Fontana was urging more research into cognitive styles because, in his view, little thought is given in education to the best methods of helping children to extend the ways in which they explore and recognize the meaning of new material in front of them and to developing thinking

strategies most appropriate to it. Though admittedly in the context of a discussion of neuroticism, Eysenck (1978) emphasises that teachers should be in a position to capitalize on the particular personality factors and aspects which enable children to succeed in given tasks.

Scott and Annesley (1976) stress the absolute necessity for each child to be treated as a unique learner and for "... instructional modes to be chosen for specific tasks in accordance with the teacher's appreciation of the learners' pattern of styles in the range of cognitive dimensions." They also quote Hall and Russell's (1974) warning that, where conceptual tempo is concerned, teachers can inappropriately hurry reflectives or slow impulsives, though, as Logan (1983) comments, teachers more commonly tend to emphasise impulsive responses when they praise the first children to complete a task. Ehrhardt and Corvey (1980) in an overview of cognitive style stress the high promise of helping the educator and student jointly to determine the most effective environment for learning provided by cognitive style research.

4.6.iii. Conceptual tempo and reading

Davey (1983) makes many useful suggestions about the direction research into cognitive style should take and reviews a number of contemporary studies. She argues that the powerful effects of prior knowledge or schemata on reading comprehension have been demonstrated using various methodologies and adduces evidence for this. Davey suggests that "... it is at this point that cognitive style factors might be considered worthy candidates for study." with

attention directed to reader-based variables. She quotes tentative research linking conceptual tempo with phonic instruction methods which will be discussed elsewhere (also see Readence and Baldwin, 1978).

What is significant for this present study is, that after her careful analysis, Davey suggests general questions for further research. Among other questions she asks: how do cognitive styles relate to beginning reading approaches (language experience approaches, phonics, etc.)? and, to what extent might cognitive style interact with effectiveness of grouping arrangements? It is not surprising that among the grouping arrangements peer tutoring is mentioned. She concludes by emphasising that the careful study of individual differences is crucial as "...we attempt to design instructional programs in light of new conceptualizations of reading processes." and "...that cognitive styles may assist reading researchers to more fully describe aspects of the reading...process...and investigate salient variables..." Lopez et al (1979) make a similar point when they conclude, after comparing a number of studies linking cognitive styles with reading skills, "... they were interpreted as suggesting that differences in reading ability can be best understood in terms of a combination of stylistic variables as they relate to specific and distinguishable components of the reading process..."

It is perhaps wise to introduce a note of caution to inform the general discussion about conceptual tempo and reading achievement; a thread which will re-occur. Tamor

(1979) reviewed the relationship of four cognitive styles with reading progress and shrewdly comments that, whilst it is tempting to conclude that cognitive styles are a significant factor in determining reading development, at the same time it is true that for no style is the evidence overwhelming and more research is therefore required.

Finally Young and Tyre (1983) suggest that the aspects of reading disability which have predominantly occupied researchers are cognitive, neurological and sensory factors. They argue that "... vital dimensions of the child of far greater significance than a difficulty in reading are thus being ignored." Principally they submit that cognitive and behavioural variables should be appropriately measured and an examination of how children think in contradistinction to how effectively they think. They specifically refer to the cognitive style conceptual tempo. Where delayed readers are concerned, Sawyer (1974) argues that examination of a child's cognitive style is essential for effective beginning reading.

On the whole studies linking conceptual tempo with reading skills find that these variables correlate positively though care should be taken when interpreting correlational studies. The earliest study was conducted by Kagan (1965), the developer of the MFFT, who found that, in general, children classified as impulsive had the highest reading error scores. A number of studies in the early seventies confirm this finding. Blanton and Bullock (1973), summarizing research into conceptual tempo and reading achievement, conclude that there was a high degree of

relationship between high/low reading achievement and reflection/impulsivity but added that the relationship appeared to be stronger during the initial stages of reading acquisition. In confirmation of this latter conclusion Sones (1973) hypothesized "...that reading readiness would be related to the cognitive style of perceptual reflectivity and impulsivity." and this was confirmed by his research. The more impulsive children showed "...a greater propensity for having reading difficulties." Readence and Searfoss (1976) quote three researchers concluding that, among first grade juniors, reflectives performed significantly better on word recognition and comprehension than impulsives (see Becker, 1976; Erickson and Otto, 1973; Margolis et al, 1978; Scott and Annesley, 1976 and Shapiro, 1976).

Hood et al (1973) researched conceptual tempo and reading acquisition skills with the assumption of a psycholinguistic model of reading. Their findings are more detailed. Whilst noting that reflective children perform better on reading tasks they attempt to explain this. Their research found that reflective children made fewer miscues that differed from the text and fewer miscues of the most numerous category, word recognition. Reflective children also self-corrected a greater proportion of their word substitution miscues, specifically when the miscues were semantically inappropriate to the text and when they were syntactically inappropriate to the following portion of the sentence. An additional finding was that reflective children exhibit better comprehension.

In a more recent study, Halpern (1984), hypothesised that, where reading task characteristics closely approximate the task characteristics of the MFFT, there would be a difference between impulsivity and reflectivity scores but where these characteristics were dissimilar there would be no difference. For vocabulary recognition tests these hypotheses were confirmed. The weakness of the study, which could have interesting implications, is that it is not clear how similarity or dissimilarity of the "task characteristics" of the MFFT and the tasks administered were matched. The issues were further complicated because, whereas on word recognition tasks, impulsives scored the same as reflectives, on similar items on the comprehension tasks they scored lower. Halpern (1984) explains this by stating that comprehension tasks may be considered a more realistic measure of reading skills. This a posteriori comment is unsatisfactory nor does it take account of the fact that tests of reading comprehension tend to be very unstable.

Pitts and Thompson (1984) examined the links between reading comprehension and conceptual tempo along with field dependence/field independence and a further cognitive style which they term "attentional". They did not use the accepted measures for the first two styles but constructed a composite measure for the three styles using 23 traits "... which the literature suggests are characteristic of the three cognitive styles." This "style assessment instrument" was completed by class teachers. Whilst reflective children, as measured by this instrument,

performed better than impulsives the study is typical of a large number of studies involving conceptual tempo which use test instruments deviating in some respects from the MFFT and thus bring the findings into question for comparative purposes.

Two researchers among many, after expressing doubt about the link between conceptual tempo and reading performance, demonstrate in their own studies that, among young beginning readers, impulsives were markedly inferior to reflectives in terms of reading performance (cf Roberts, 1979 and Sousley and Gargiulo, 1981).

A minority of studies conclude that conceptual tempo fails to distinguish between good and poor readers. Typical of these are Denney (1974) and Margolis et al (1978). The latter study has a variant on the generality of conceptual tempo research. It sought to discover whether the conceptual tempo of kindergarten children could predict their "middle-of-first grade" reading performance but failed to find any correlation. Tunmer and Fletcher (1981) suggest that the relationship between reading acquisition and conceptual tempo is indirect through the relationship between phonological awareness and the MFFT - that reflectives are more phonologically aware - and indeed they demonstrate a moderate correlation between the two variables in their study.

The considered conclusions of Tamor (1979) appear to match the implications of the studies reviewed here. She says that "In summary correlational studies suggest that impulsivity/reflectivity does relate to the reading process

in some way although the achievement tests are too general to allow a solid cause and effect argument. That the associations tend to be weak should not be discouraging since there never was any reason to believe that cognitive style would be the only determinant of individual reading differences." In her own studies Tamor (1979) found that reflectives were better readers than impulsives though effects varied across grade levels which confirmed her opinion that the relationship between cognitive style and reading was a complex one.

Unfortunately sampling of studies seeking to examine links between conceptual tempo and various aspects of childhood behaviour, including reading performance, is constrained both by variants of the MFFT and a variety of reading tests used to measure the variables. Since it is proposed to use the MFFT in this study it will be examined in further detail below. It is however important to stress here that the studies referred to in the foregoing discussion on conceptual tempo and reading performence, apart from those of Erikson and Otto (1973) and Pitts and Thompson (1984), appear to have used Kagan's original version of the MFFT. However there can be no guarantee that this is so because it is not uncommon for researchers to refer to the MFFT without making it plain that the version they are using differs in some way. Where reading tests are concerned it must be apparent that tests used in many cases use idiosyncratic features which make it almost impossible to make rigorous comparisons between their scores and between the correlations between these and MFFT data.

Before proceeding it is important to note that no definite link has been demonstrated in the literature between IQ and the MFFT. Finch et al (1982) suggest that reflective children score significantly higher than impulsive children on the WISC. Campbell and Douglas (1972), also using the WISC, conclude that any relationship is not statistically significant. Brown and Quay (1977) claim that IQ is correlated significantly with MFFT latency scores but not with MFFT error scores whilst Messer (1976) makes quite the opposite conclusion.

4.6.iv. Attempts to modify children's conceptual tempo

If it could be shown that appropriate training would enable an impulsive child, as measured by the MFFT, to become more reflective and at the same time to improve his/her reading performance, the link with conceptual tempo would be strengthened. It might also be of more practical use to the teacher. McKinney (1975), in a very thorough examination of the problem solving strategies in reflective and impulsive children, concludes "...that greater attention should be devoted to the manner in which task information is processed by reflective and impulsive children rather than the tempo of processing." Earlier attempts to increase latency in the belief that accuracy would automatically increase had failed. McKinney's data indicated that reflective children process task information more efficiently than impulsive children and use more systematic and/or mature strategies.

Messer (1976), in his review of research into conceptual tempo, stresses that impulsivity has been found

to be modifiable by teaching improved scanning strategies using appropriate training methods and materials; he urges however that it is essential for the child to verbalize the strategies aloud. Messer goes on to make comparisons between training in scanning techniques and other training methods. He found that reinforcement for increasing latencies produced longer latencies and fewer errors but it is doubtful, in his opinion, whether there is a long-term change. Modelling of teachers by children appeared to increase the reflective time but the errors remained constant though there is some evidence that older children can effectively influence impulsives.

In this context Davey (1983) poses the question for further research of how cognitive style relates to grouping arrangements for peer tutoring. Messer (1976) insists that, for a reduction in errors to be durable, the training must extend beyond four months and the strategy must be spoken aloud. Egeland (1974) draws the conclusion that modelling and training to delay response is less successful than training impulsives to break down the stimuli into component parts, look at the component parts of each alternative and then refer to the standard to determine the correct form of each part.

Brown (1980) combines a "cognitive treatment procedure" with demonstrators on videotape as models. The emphasis is on verbalization at every stage of the strategy: slow response, avoidance of first figure selection on the MFFT, description of scanning strategy and a description of how decisions were arrived at. Brown found that this

procedure proved to be effective in both hyperactive and normal children. He added that no significant change in latency occurred whereas the number of errors were reduced i.e. cognitive performance seemed to be independent of latency.

Logan (1983) quotes a training strategy devised by Huhn (1981) which he claims gives impulsive learners a strategy for thinking and problem solving in any reading task. No evidence is provided for the use of this strategy in practice but its resemblance to other strategies quoted and the structured approach make a reference to it worthwhile. The strategy is called RSM2P standing for Rationale, Steps, Model, Practice (aided) and Practice (independent). "Rationale" involves making pupils aware of the particular strategy they are being taught and how to apply it; "Steps" of the strategy are provided for the pupil in writing (one-word flow charts) and explained orally; "Model" - teacher models the strategy, vocalizes the thinking and decision-making processes as it takes place; "Aided practice" follows when the pupil uses the practice by thinking out loud; "Independent practice" completed the cycle hopefully enabling the pupil "... to complete numerous similar tasks independently." Egeland (1974) also found that the training outlined above not only resulted in an increase in latency associated with a decrease in errors on the MFFT but was also associated with a marked improvement in reading vocabulary and comprehension.

A slightly different approach to conceptual tempo is investigated by Readence and Baldwin (1978). They utilise

an approach to phonics instruction outlined by Karlin (1975) who distinguished between the synthetic and the analytic methods. In the "synthetic" method readers are taught sound/symbol correspondences and are shown how to combine sounds and letters to form words. In the "analytic" method readers learn familiar words, or sight vocabulary, and work with the sounds within them making generalizations to other words which have phonic elements. In their study vocabulary and comprehension scores of impulsives and reflectives were compared in schools primarily using synthetic or analytic approaches to meaning. The results showed that, in the synthetic approach, reflectives performed significantly better than impulsives only in vocabulary tests whilst the reverse was true in comprehension tests. In the analytic approach reflectives performed significantly better than impulsives only in comprehension. They conclude that the terms reflective and impulsive are not covert labels for "good" and "poor" but that children possessing a varying balance of conceptual tempo are sensitive to different types of reading programme. Once again research suggests evidence for the link between conceptual tempo and reading performance but at the same time indicates that the relationship may be a complex one.

The quoted training strategies are an encouraging example of the way in which such research into cognitive style ought to be "assisting" the classroom teacher. It may be of significance that recent recommendations for the teaching of the dyslexic child are very similar to those just described (see Young and Tyre, 1983).

4.6.v. Conceptual tempo and the psycholinguistic model of reading acquisition

Running like a thread through the literature summary is the subtle re-occurrence of reference to psycholinguistic theories of reading. Attempts to explain the effectiveness of paired reading include reference to aspects of psycholinguistic theory as do attempts to explain the link between conceptual tempo and reading performance. Readence and Searfoss (1976) refer to problem solving behaviour in which the reader must generate and test hypotheses to reconstruct meaning from print, the reader must be a decision maker who selects appropriate cues and "... each individual approaches the task of reading with his own established patterns..." Readence and Baldwin (1978) also comment that, if reading is conceptualized as a situation of high response uncertainty then the notion of cognitive style has particular relevance for reading. Each of these statements is typical of both Frank Smith's and Goodman's proposals of psycholinguistic theory (cf Goodman, 1967, 1970, 1972 and 1979 and Smith, 1977, 1982 and 1985). Tamor (1979) is also worth summarizing. She urges that it is time to look beyond children's interactions with the content of reading and mastery of skills, to a view of a child as a fine, precision tooled mechanism programmed to process information and to learn. She goes on to comment that the study of cognitive and affective factors in reading presents a strong case for viewing the disabled reader as a problem solver, an information processor and an individual who interacts with his environment, not simply as a child who is

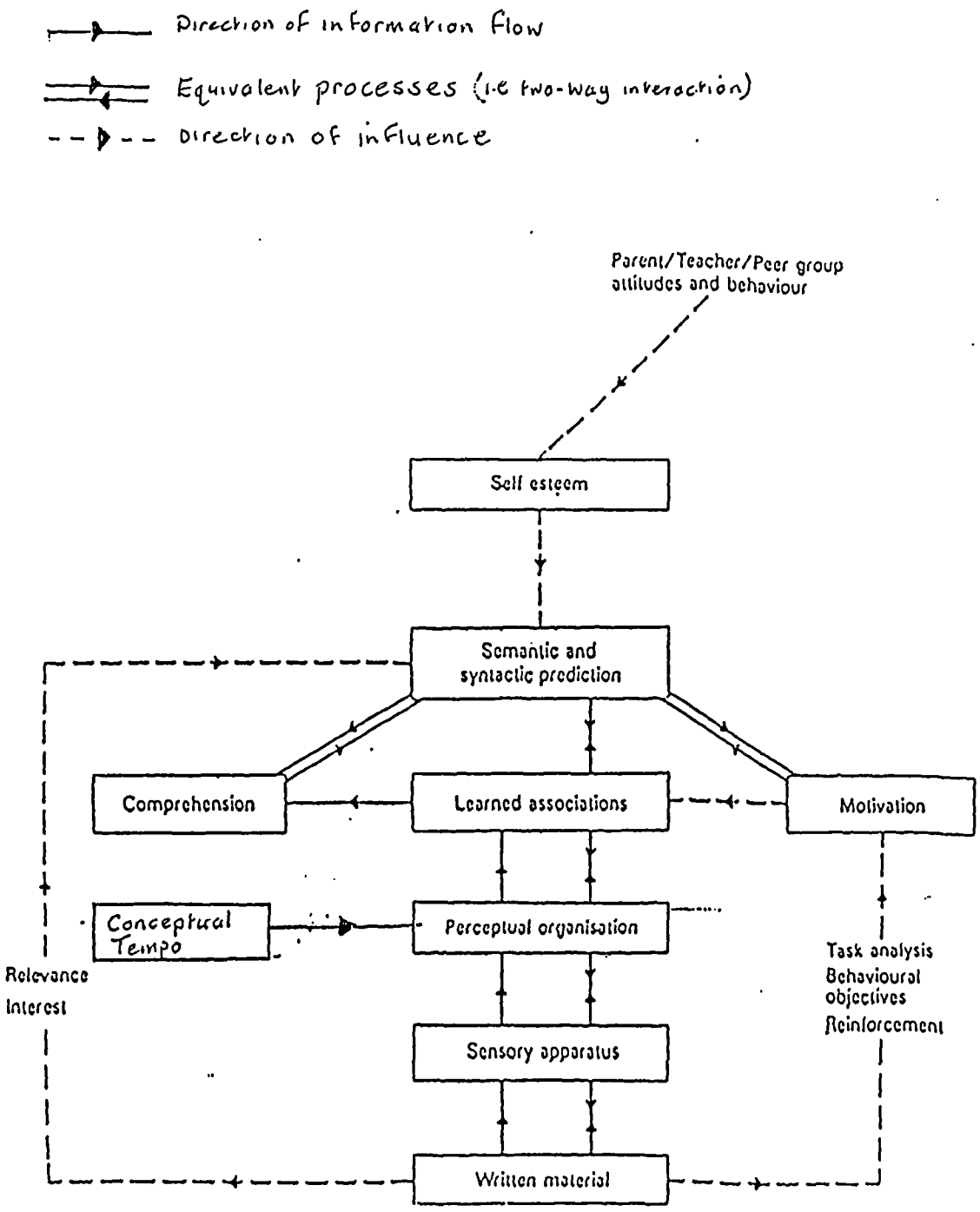
deficient in some reading skills.

4.7. THE FINAL PARADIGM

It is submitted that the inclusion of conceptual tempo as a further additional element to Miller's (1981) composite model of reading acquisition is justified on two counts: its intrinsic contribution and its link with the psycholinguistic model of reading acquisition both of which are demonstrated above. The paradigm is finally amended as shown in Figure 2.

Figure 2.

SUGGESTED AMMENDMENT TO THE PARADIGM OF MILLER (1981)



CHAPTER 5

ASSUMPTIONS AND STATEMENT OF HYPOTHESES

5.1. PLAN OF CHAPTER

The ensuing discussion is a very necessary preliminary before the methodology of the present study is developed. Firstly it will be apparent that important issues about the status of qualitative "research" by comparison with quantitative research remain unresolved. It is therefore essential for researchers in education to provide a rationale for their research designs to enable informed evaluative discussion to continue.

Secondly, the assumptions underlying widely accepted explanations for the Hawthorne Effect are shown to be highly questionable. Fifty years after the original research at Hawthorne, studies in the social sciences are still haunted by the pervasive but indeterminate influence of the Hawthorne Effect. A solution to this issue is a crucial one for social science research and ought not to be relegated to the status of an esoteric topic for dilettante discussion. The space given to the discussion of the Hawthorne Effect is perforce limited but it could profitably be examined at greater length. In an attempt to neutralize the Hawthorne Effect guidelines are drawn up to counteract its influence in the present study.

The final section of this chapter will introduce the hypotheses on which the present research is based.

5.2. PLAN OF SECTION

An important assumption of this present study is that the teachers, the parents and the children of the schools where the study takes place will have a lot to contribute to its conclusions. As an aid to elucidating more precisely what is being attempted and to provide a background for the methodology to be discussed later, some consideration is given to the basis for this assumption. This will involve looking at the attitude of teachers to research and to researchers and to the present state of educational research in the UK, if only in brief. Ways of improving relationships and co-operation between researchers and practitioners will be examined. Finally, for the purpose of this study, an attempt will be made to achieve some consensus about the crucial question of the balance between qualitative and quantitative research as it is applied to education.

5.2.i. Practitioners versus researchers: a tension

White (1985) argues that, until the late 1960's, educational theory was handed down from on high and, until recently, theorists have been seen as somewhat irrelevant appendages while practitioners get on with the job. Likewise Wragg (1985) concludes that the well-known antipathy of many practitioners towards theorizing and theorists is in part due to what is seen by them as the superior status accorded to theorists whilst they themselves are the real exponents of teaching practice. Bennett, (1978) presents the

teacher/research relationship as parasitic with educational researchers being primarily concerned to produce research results for the "community of scholars". His caustic comment that, at "... some unspecified future date an educational Moses will descend from the ivory tower and present the tablets of stone to the assembled teaching profession" is perhaps not fully justified. Research is a time-consuming activity and, by the time analyses and conclusions are reached, there may be a lapse of many months. It should be the concern of researchers in schools to provide interim feedback and not to convey the impression that a prophet has been among them who will deign to return at some future date, submit a report couched in technical jargon and shrink from the scene.

To redress the balance, Plant (1986) states that the evidence that teachers generally harbour resentment towards researchers is of the hearsay variety with little foundation in fact. Indeed it is probably true that much resentment is of a superficial nature and that the "right" approach from researchers will readily break down the apparent antipathy. In the course of these considerations the "right" approach should become apparent. By contrast to this caveat, Hewison (1982), reflecting the tension between research and intuitive comments, is dismissive of the common criticism of educational research by teachers, that it is trivial, artificial and irrelevant when she says that, on the other hand so-called commonsense can be used to justify quite contrary opinions.

Many statements about teachers' attitudes to research are too trenchant in their tone and serve only to perpetuate inaccurate assumptions. For example Chambers and Powney (1982) state that there is a total absence of research perspective in most teachers' perceptions of their roles. Admittedly many teachers are not equipped to interpret research reports, but equally many teachers welcome research, in the writer's experience, when it is presented free from jargon by someone who has the interests of children at heart.

Additional light on teacher attitudes to research is thrown by Jackson (1977). He argues that educational psychology is taught to teachers in training colleges with a mixture of "... pious optimism and subdued embarrassment" in their attempt to "... match student characteristics and instructional strategies." He quotes Cronbach who comments "... we enter a hall of mirrors which extends to infinity." Jackson (1977) also adds, in a way which tends to occlude the value of well-conducted educational research, that educational psychology cannot easily improve upon the wisdom accumulated by teachers going back at least to the time of Socrates. He does however add that he does not mean that educational psychology has not made any progress.

5.2.ii. The status of contemporary educational research

Kitwood (1976) maintained that the results of research in education since its inception in the forties have been disappointing and incommensurate with the time and energy expended. He suggests that the "scientific" mode of enquiry offered the prospect of clear and objective answers

to many controversial questions. Nevertheless the findings of research he argues, are given little attention by either teachers or policy makers. Whilst this may have been true generally, since 1976 there have been encouraging signs that this is changing. The Inner London Education Authority Research and Statistics Branch for example provides useful feedback and advice to teachers and other professionals in informing them of the results of research projects and guiding them with their own research.

Kitwood (1976) also states that the numerous journals in the field are hardly ever read except by practitioners of research. It may be that the average teacher could not afford to purchase them though they could of course be subscribed to by the larger schools. Bennett and Desforges (1985) also lament the lack of a generic journal of research in teaching comparable to the Elementary School Journal available in the USA.

Ten years ago Kitwood (1976) was also concerned about the complacency of researchers of whom he was saying that they presented a generally confident and untroubled exterior as if the aim, methods, assumptions and even the nature of scientific understanding itself were not seriously problematic. Whatever encouraging signs there may be, the pace of change is still slow though the development of in-service training for the teaching profession is helping to counteract this.

5.2.iii. Aims and problems of research in school.

Before considering the qualitative versus quantitative controversy some general observations about the

aims and problems of research within schools are apposite. Fox and Stronach (1986) emphasise that, for research in education to be of any value, it must demonstrate what they term "reflexivity" and "intentionality"; the educational intention should be clearly stated in the research and reflexion should be dynamic research on the research to ensure that the intention is sustained. It is hoped that this study will subserve precisely these two aims among others. Some practical considerations are worth emphasising. Plant (1986) complains that many teachers turned researchers adopt a register which makes it difficult for them to return to former intelligibility. There is no doubt that this occurs and may be due to practitioners engaging in research prematurely without sufficient theoretical understanding. Secondly we may all at some time have experienced the phenomenon of paralysis when we attempt to apply research to our own activities. Chambers (1983) urges that, far from being discouraged, we should be impelled to be like the centipede in Lazarsfeld and Rosenberg's story who, as a result of being asked how he managed his one hundred legs, reached the heights of the Bolshoi Ballet Company and scored more goals than all other centipede internationals (Lazarsfeld and Rosenberg, 1965). He emphasises that the "... application of research to one's own experience and activity is the only ultimate test of the sense of ... research findings." Chambers and Powney (1982) also mention the important role of educational research as a sensitizing influence on teachers helping them to make sense of educational processes. Nisbet (1974) would similarly judge

the worth of educational research by its effect on the attitude of teachers, its ability to increase the problem solving capacity of the educational system rather than to provide final answers to questions, and to its ability to inject vigour into flabby educational thinking.

Egan (1983) believes that the reason for the poverty of educational theory is the failure of the researcher to distinguish educational from psychological theory. The danger is that the plethora of facts generated by educational psychology and incorporated into theory is assumed to be available for educational research and practice when in fact, Egan (1983) argues, they may have very little implication for education. Facts, he emphasises, have to be organized within educational theory. One way in which this is done is suggested by Atkin (1968) who recommends that the task of the educational researcher is to begin examining the work of effective teachers in an attempt to validate generalizations that may be made about the elements which make the teaching strong. This should include an emphasis on intuitive and aesthetic dimensions, teachers who make the subject "alive" and about the "verve" characteristic of some teachers' approach. His qualitative aspect of research will be considered below.

5.2.iv. Methodology: quantitative versus qualitative.

Whilst the foregoing discussion exemplifies the need to involve teachers, especially those who are more experienced, in research being undertaken within the school it does not relate their contribution to the framework of the traditional hypothetico-deductive research method.

Whatever constraints are placed upon the abilities of experienced teachers to elucidate their skills for others it is essential to enlist their co-operation in research, hopefully that the benefits may be mutual.

Eggleston (1979) is clearly concerned with the many difficulties at the conceptual and technical level which bedevil the methodology of educational research. He discusses the tension between researchers who are convinced that the powerful research techniques of the physical and biological sciences should be used in educational research and others who advance cogent reasons why research in the social sciences cannot be conducted by these methods. Eggleston quotes three typical viewpoints: Yates (1971) who holds the opinion that many researchers in the social sciences and education in particular use "... the experimental designs of classical physics in order to gain the recognition of their academic colleagues."; Thouless (1969) who argues that the "crucial test" or the "decisive experiment" has, in the educational field a degree of impermanence not matched by the physical sciences - that results are crucial or decisive only in the existing situation; and Lovell and Lawson (1970) who maintain that the investigation of human behaviour cannot be wholly contained within the natural scientist's exploration of the matter-energy system but partly determined by "psychical" forces such as "mind" or "will" or even by "transcendental influences". In review perhaps Yates' statement is too trenchant and Lovell and Lawson's somewhat esoteric but the point is made. Perhaps surprisingly Eggleston tends to come

down against the qualitative emphasis in educational research; he concludes that human nature is not as idiosyncratic as the statements imply. He claims that "Advertising companies, actuaries, tax gatherers and the discipline of economics depend for their existence on aspects of human behaviour which seem to be remarkably predictable." Without labouring the point, the examples given could also suggest quite opposite conclusions: many aspects of insurance are risk-laden and loss-making; the world economic situation is hardly amenable to accurate predictions; tax gathering legislation is quite unable to cope with tax dodgers and some advertising may be relatively predictable because it appeals to basic personality traits though many major chain stores remain unconvinced.

Eggleston attributes the failure of scientific method to three main reasons: the failure to specify and to observe treatment variables with anything approaching the precision needed, the lack of reliable and valid methods for observing and measuring a broad spectrum of outcomes and irrelevance. Whilst urging that it is premature to discourage the use of scientific method for educational research, in something of a volte face, he accepts that the method needs elaboration in order to improve its payoff.

The qualitative approach deserves a deeper consideration. Kitwood (1976) portrays education "... in its essential nature, flexible, open-ended, spontaneous, alive and personal. Moreover, involvement in so human an enterprise requires values, skills and forms of awareness so subtle that they cannot be captured by the relatively crude

categories of a science. To eliminate these from education would be effectively to abolish both the genius and the rebel, which would be disastrous." It is clear that he expects qualitative research to take on a greater significance whilst arguing that quantitative research, which is so often presented as "hard" is often actually "soft" in that it represents reality poorly (also see Carr, 1983).

Hogan (1980), it is to be hoped, is not expressing typical opinion when, rather despairingly, he states that the contemporary and predominant trend in educational research is one which shifts the methodological perspective of that research ever more in the direction of scientific empiricism. He also quotes Richmond (1972) with favour "... it is as though there is no longer any place (in the literature) for human warmth, only for clinical concepts, dessicated statistics and aseptic analysis." These opinions do appear to caricature the situation. Certainly the arguments discussed above indicate that there is a considerable awareness of the need for practitioner participation and of the methodologies for expressing it effectively.

Becher (1974) draws attention to the continuing emphasis on a search for general laws of behaviour which inevitably places a considerable strain on quantitative techniques. He warns that the number of variables it is necessary to take into account tend to render generalization unenlightening and evinces the crudity of the methods. Becher heralded a growing concern for the need for

qualitative evaluation when he suggested that, whilst he was not asking for the abandonment of scholarly standards or of quantitative techniques, he was urging the cessation of adherence to inappropriate and unproductive tradition - that the educational researcher should cease to adopt the camouflage of a quantitative scientist.

5.2.v. The danger of dichotomizing viewpoints.

The essential differences between the qualitative and quantitative approaches to educational research are "starkly" presented by Burgess (1985). He provides sets of contrasting terms which distinguish between the two approaches The exercise is a useful one because it tends to identify what have become entrenched positions:

QUALITATIVE	QUANTITATIVE.
soft	hard
dry	wet
flexible/fluid	fixed
abstract	grounded
descriptive/exploratory	explanatory
pre-scientific	scientific
subjective	objective
inductive	deductive
speculative/illustrative	hypothesis testing
political	value free
non-rigorous	rigorous
idiographic	nomethetic
holistic	atomistic

interpretivist	positivist
exposes actors' meanings	imposes sociological theory
phenomenonological	empiricist/behavioural
relativistic; case study	universalistic/survey

It is not the intention to discuss these categories in any depth; any disagreement about their appropriateness is likely to be minimal. Stenhouse, (1980) however would dissent from the manner in which Burgess (1985) presents these categories as sharply dichotomized. He states the problem as that of hunting a dichotomy which he allegorically describes as a two-headed animal which shows both the qualities of a chameleon and of Proteus. At no time does the conflict take on the broad character of Burgess' categories; the knack is, in his view, to identify the areas of contemporary concern and ensure that the "heads" speak to one another. It should also be noted that Burgess' table would tend to militate against communication in its breadth and apparent rigidity and indeed Westland (1978) argues that such dichotomies are false if they are designed to facilitate a choice. His conclusions are important and will inform the assumptions in this study. He says "There is no absurdity in accepting an image of man as a conscious being who exhibits observable and measurable behaviour, who is contingently predictable without being inescapably determined, who has an objective existence as well as a subjective experience, resembles others without sacrificing his uniqueness, about whom true or false statements can be made regarding what he is without prejudicing what he might

become..."

5.2.vi. Complementarity of viewpoints.

Two models which emphasise the complementarity of the quantitative and qualitative approaches are worth describing in brief. Soltis (1984) avers that for pedagogy to develop insights, empirical, normative and interpretive approaches are necessary. The normative aspect should be the subject of critical enquiry to establish agreed understandings of curriculum content. The interpretive aspect is vital because teaching is a social skill and hence enquiry into intersubjective meaning is essential.

Black and de Luca (1979) present pedagogical research in terms of a three dimensional model, whose axes are respectively "the objects of research", "how the data are collected" and "who performs it?" They argue that the model creates a unique set of dynamics for collaborative research. "Who performs the research?" can be the practitioner or the professional researcher separately or together; the mode of collection of data can be via case study, experiment or survey and the object of the research can be application, evaluation, theory or description.

It is appropriate here to indicate what may be seen as the practical implications of the qualitative/ quantitative controversy for the statistical procedures adopted in the present study. Carver (1978) argues for the merging of statistical procedures with commonsense. He emphasises that, in his opinion, "...a study with results that cannot be meaningfully interpreted without looking at the p values is a poorly designed study." Carver makes an

equally important point when he states that "Since one of the primary reasons for being concerned with statistical significance is that chance is a threat to replication, replicated results automatically make statistical significance unnecessary." The present comparative study has a replicative element. Nevertheless the procedure adopted for the study will not dispense with significance testing; with the continuing heated controversy about these issues this would be unnecessary posturing. The course which will be adopted is to regard statistical significance as an important but not a crucial determinant of what is "significant".

5.2.vii. A summary.

By way of summary Bryman (1984) considers the debate between qualitative and quantitative research in depth. He shows that the impetus of the debate had grown considerably during the preceding fifteen years. He adduces three arguments to present what is regarded as the role of qualitative research. Firstly that its associated techniques are more sensitive to the complexities of social phenomena than quantitative methods which tend to ride roughshod over their "enigmatic quality". Secondly that qualitative research is essentially exploratory; it stimulates new leads which form the basis for a research framework using more rigorous quantitative methodology. Thirdly, progressing from the previous point, the two methods are regarded as complementary reflecting the growing attention paid to "triangulation" in social research which generally denotes reference to a combination of research methods. Of the

second point Bryman observes that a concordat of this kind is attractive and many researchers in the qualitative mould often accept the position (examples are given) but nevertheless quantitative research "... retains a methodological ascendancy". He goes on to argue that in affirming a view of qualitative research as something likely to be in need of confirmation its significance is belittled and a lack of confidence is indicated in its associated account of a theory of knowledge for the social sciences. On the third point Bryman (1984) comments that complementarity "... seems to exude good sense", "... capitalizes on the strengths of different techniques" and lacks methodological parochialism.

It is submitted that, whilst contemporary research philosophy in the field of education has not resolved the controversy between qualitative and quantitative research the preceding survey was a necessary and valuable exercise. The assumption of this study stresses that, in addition to the greater rigor provided by quantitative techniques the contribution made by parents, children and teachers through structured and open-ended questionnaires will be deemed to be of equal value. It is hoped that the strengths and weaknesses of both approaches have been identified by the preceding discussion, that they will be a continuing knell of warning as the methodology is developed and as the data are analyzed and that they may be of some use to other researchers confused by their competing claims. No attempt has been made in detail to resolve these claims - the task would probably have been a futile one.

5.3. THE HAWTHORNE EFFECT: A DEFINITION

In considering (at the design stage and later) what action to take in relation to any possible "Hawthorne Effect" a substantial literature review was carried out in an attempt to elucidate the exact nature of the effect and its possible consequences (see Appendix 1). In the event what this review produced was a distinct lack of clarity about the nature of the effect and a consequent lack of agreement about possible courses and methods of control. The main conclusions are included here as an exercise in "ground clearance".

As far as general definitions are concerned, Evans (1978), in a dictionary of psychological terms, states that the Hawthorne Effect "... showed that workers increased their output, largely unconsciously, when they were being studied."; a definition which hardly commends the book as a work of reference! An equally unhelpful and ambiguous definition from a work of reference is that of Ball (1985): "One of a number of reactive effects when the behaviour elicited by the measurement procedures is not characteristic of the behaviour that would have occurred in the absence of the measurement procedure." Adair (1984) concludes that the Hawthorne Effect is generally defined as "... the problem in field experiments that subjects' knowledge that they are in an experiment modifies their behaviour from what it would have been without the knowledge,..." or even more vaguely in the majority of textbooks: some behaviour change as a result

of being a subject in an experiment. In summary there would appear to be some limited consensus of opinion as to the nature of the Hawthorne Effect: the Hawthorne Effect is the anomalous and enhanced performance of subjects participating in an experiment derived from the operation of an ill-defined intervening variable.

5.3.i. Explanations for the Hawthorne Effect

Confusion arises more particularly from the attempts to explain why the change occurs or what mediates the effect. Cook (1967), quoted in Rubeck (1975), examined 350 research studies and found considerable lack of agreement as to the meaning of and explanations for the Hawthorne Effect. Apart from an awareness of being in an experiment and special treatment or attention, other reasons given are change in routine or novelty, enthusiasm in trying something new; increased motivation attributed to a number of causes such as prestige from being selected and the elaboration that people who feel they are especially selected to show an effect tend to do so, team work and innovators' enthusiasm; improved morale together with the development of an esprit de corps particularly from the feeling on the part of the worker that the "management" had a special interest in him; the attempt to listen sympathetically and intelligently to what the workers had to say and fundamental and highly structured differences in worker-management relations.

Whilst there is some degree of overlap in these explanations the lack of clarity as to precisely what causes the phenomenon is called into question. The subsequent

discussion will show that important aspects of the Hawthorne research have remained unnoticed. Parsons (1978) examined the source material in detail. His findings will be discussed below but his conclusions are relevant at this juncture. He characterizes the studies that are said to have produced the Hawthorne Effect as "... the biggest Rorshach blot in the behavioural and social sciences. Commentators read into them their own identification of the confounding variable that caused a progressive rise in workers' production rates." He avers that it is now common practice to attribute an unexpected research finding in an experiment with human subjects to the Hawthorne Effect and not due to the variable under scrutiny. Adair (1984) describes the uncritical acceptance of the Hawthorne Effect in education resulting in the introduction of costly control groups as a precaution against its effects. He quotes standard textbooks which lead students of education to expect that many experiments report changes and improvements that are due to the Hawthorne Effect. He also examined 15 experimental psychology textbooks and was "appalled" at their inaccurate descriptions of the Hawthorne experiments: "... not one had described the studies accurately, let alone shown agreement on what constituted the artifact." Cook (1962) concludes that such biases may extend to "... fully half the classroom study conclusions." (also see Borg and Gall, 1979). It should however be strongly emphasised that Adair (1984) also warns that the Hawthorne Effect is "...not an artifact to be discarded but is of substantive concern and significance to both psychology and education." With this caution in mind

what did happen at Hawthorne?

5.3.ii. Parson's conclusions

Parsons (1974 and 1978) has thoroughly examined the primary sources and his analysis of the original Hawthorne experiments is contained in Appendix 1 Because of their importance a summary of his conclusions is provided below

a. It is erroneous to assume that the production rate always rose when conditions changed which gave rise to the myth that any change resulted in faster work.

b. It is also erroneous to asume that the rate only increased if the conditions changed; it tended to rise within conditions.

c. It is injudicious to assume that none of the independent variables had any demonstrable effect - shorter working hours and rest pauses appear to have had some influence.

d. The girls in the Relay Assembly Test Room experiment which was the first in a series of experiments conducted at Hawthorne (referred to as RATR 1 in Appendix 1) appear to have set higher and higher goals of productivity because of knowledge of results.

e. This information feedback and the monetary reward for increased production suggest that operant conditioning is the more likely explanation for the Hawthorne Effect than experimenter effect. Parsons notes that, up to the mid/late seventies, more than 200 businesses in the USA had benefited from the adoption of operant

conditioning techniques.

5.3.iii. Alternative conclusions.

Opposing conclusions are made by Pennock (1929) who noted additional significant facts. The alternative explanations are a "nice" demonstration of the way in which "facts" and interpretations are selected to fit hypotheses. Pennock makes a number of interesting points. Firstly he states that the researchers were not able to test for the effects of single variables which makes much of the subsequent explanations for the Hawthorne Effect untenable. Secondly, he comments at the conclusion of the RATR 1, that the researchers with whom he himself was associated had been asking the wrong questions. Instead of being concerned about the effect of manipulating various working conditions they should have been looking at the effect of various supervisory methods on morale and operator effectiveness. Pennock believed that the dominant factor in the employees' performance was their mental attitude. Thirdly, Pennock notes that, before variables were changed, it was the practice to discuss them with the subjects: "We tried to make them feel that we wanted their advice." Whyte (1978) represents these "discussions" somewhat differently: as agreed experimental changes with a worker's power of veto. Of a further set of studies termed the "Mica" experiments Pennock relates that increase in production was due to changes in mental attitude deriving from a relationship of confidence and friendship such that no superior was required and they ceased to regard the man in charge as "the boss".

Landsberger (1958) confirms these comments. He states that, though ostensibly the studies were of physical not psychological determinants, for two and a half years in the RATR 1 experiments comments were sought from the girls in order to keep their attitude co-operative; they were also regarded with considerable envy by their former workmates and expressed satisfaction at being consulted and at the freedom and privileges they enjoyed (see also Adair, 1984). As a result of the intervention of Mayo and Roethlisberger, half way through RATR 1, during subsequent experiments as many as 10,000 interviews were conducted in the Hawthorne works. The interview techniques resembled the non-directive counselling techniques developed later by Carl Rogers. The conclusion made was that it was management/employee relationships which were responsible for increases in production and led to the development of human relations' studies at Harvard Business School as a branch of industrial sociology. Similarly within the Hawthorne plant the executives were also convinced that a counselling programme was the answer to the human problems which had been revealed by research although Whyte (1978), in a posthumous review of Roethlisberger's life and work, regards these findings as a monumental misunderstanding based on false conclusions.

Adair (1984) discusses the Hawthorne studies in sociological terms. He locates the "real trouble" in the investigators' perception that the attitude of the subjects to the experiment was negative. Consequently they made special efforts to encourage co-operation and by doing so they totally altered the social situation: "... the

experiment they planned to conduct (using rest periods and duration of work as variables) was quite different from the experiment they actually performed." Adair makes an important conclusion from this perspective, that the Hawthorne Effect far from being an artifact to be controlled or removed from the experiment, may take on a new meaning. "Rather than being an artifact, it may form the substance of behaviour that directs responses and thereby may demand a more phenomenonological approach than the prevailing behaviouristic or objectivist philosophy has encouraged." Adair recommends the adoption of strikingly different procedures than those typically used to control for the Hawthorne Effect in the past; questionnaires and post-experimental interviews must be included. In fact, he notes that the Hawthorne researchers did interview the workers but, in their case, remained puzzled. Without labouring the sociological issues at length, Adair quotes Orne (1973) who urges the necessity for the researcher to understand how the subjects perceived the experiment. Orne also cautions that the demand characteristics of experiments can be so compelling that a substantial number of subjects will systematically attach a similar meaning to an experiment leading to results which are so homogenous that they are mistakenly interpreted as evidence of treatment effect (also see Cook, 1962).

An interesting analysis of the Hawthorne studies is made by Bramel and Friend (1981). It is written from a Marxist viewpoint and at times becomes polemical, but their conclusions are useful if only that by caricaturing certain

aspects they confirm the views of other authors. They receive the assent of their colleagues when they note that "highly respected and widely used textbooks" of general, social and research psychology perpetuate the myth that, whatever manipulations the researchers made to the environment, production increased (cf Stagner, 1982 and Parsons, 1982). They also quote a number of investigators who testify to insufficiently controlled research, selectivity in recording workers' comments and a failure to report significant events and data which they conclude makes it unlikely that any definite conclusion will ever be forthcoming. Adair (1984) also quotes comparatively recent applications of contemporary statistical techniques to the original data which have yielded non-significant results and provide further grounds for rejecting the study conclusions (see Franke, 1979 and Argyle, 1953).

5.3.iv. Research studies of the Hawthorne Effect

It is now appropriate to examine studies which have employed controls for the Hawthorne Effect and others designed to produce the effect. Adair (1984) identified 40 studies in the former category and 13 in the latter. In the former category, which was "virtually all" in education, controls were devised for special attention, awareness of experiment participation and, less frequently, for novelty. Adair comments that this is a very narrow perception of variables responsible for generating the Hawthorne Effect. The "awareness" control groups were led to believe that they were in an experimental group or programme whereas the controls for special attention or novelty were usually given

a placebo activity. Less frequent control procedures were "... unobtrusive experiments for problems of awareness and measures of whether the treatment effects persisted or dissipated over time for novelty effects." Of these 40 studies seven claimed to demonstrate a Hawthorne Effect. Detailed analysis would be time consuming. It suffices to note that Adair discounts the evidence of these seven studies remarking that they indicate "... as much about the tendency of educational researchers to cry Hawthorne as to shed light on the nature of the artifact."

In the latter category of 13 studies designed to produce Hawthorne Effects nine failed to do so but four did. Each of these four studies used adult subjects in education and did not provide any evidence that the Hawthorne Effect was due to any of these three variables (novelty, special attention or mere awareness of participation in an experiment). Alternatively Adair states that there was evidence from these four studies that "... reactivity to experimention occurred through subjects identifying a purpose for the experimental treatment and an expectation for their own behaviour in the research situation." He cites, as a typical example, the study by Johnson and Foley (1969). They used three groups of students to discuss an experimental agenda for studying Introductory Psychology. Group 1 were told that the agenda had proved very effective with other students, Group 2 were told that they were participating in an experiment but were not given any information about the prior effectiveness of the agenda and the control group completed the task "as a time-filling

exercise" in the classroom. Group 1 scored significantly higher on the number of questions discussed and various other parameters. Adair concludes from this experiment that "... merely being a subject in an experiment was not sufficient to replicate the Hawthorne Effect."

In summary Adair makes the point that none of the dependent variables in the studies with the Hawthorne Effect involved measures of well-practised skills such as reading, writing or arithmetic.

Two further points are deserving of consideration. Bauernfeind and Olson (1973) argue that findings based on adults working on an assembly line operation should not have been projected as a "threat" to educational experiments. Secondly, Cook (1967), Bauernfeind and Olson (1973) and Rubeck (1975) quoted by Adair (1984) paradoxically claim, as a result of attempting to evoke a Hawthorne Effect among primary age children, that the effect is either non-existent or not sufficiently potent to significantly alter the results of experiments. It is submitted that attempts to induce a Hawthorne Effect are too artificial. In the absence of any agreement as to explanations for the effect experiments to induce it by various means are too "hit and miss".

5.3.v. The John Henry Effect

There has been an attempt by some researchers to isolate an effect which, it is claimed, "complements" the Hawthorne Effect and which is termed the "John Henry" effect. The term derives from a USA folk hero, John Henry, a railroad worker who was told that the steam drill would

replace human labour in laying railway tracks. By amazing efforts he did better than the machine but the exertion eventually killed him! Saretsky (1972) more precisely defines the John Henry Effect: "It is used to describe the above average performance of a control group placed in competition with an experimental group using an innovative procedure."

To avoid further confusion Adair (1984) wisely urges "It would seem more parsimonious, however, to consider that the occasion and direction in which the Hawthorne Effect operates might be cognitively based on subjects' perceptions of the experiment and that the so-called John Henry Effect is merely a manifestation of this process."

5.3.vi. Conclusion

Taking all the factors into account Cook's (1962) advice would appear to be sound. It is regrettable that his 30 year old comment has not been generally heeded. He urges that "Equal excitement must be generated and all groups must identify with their respective procedures" - as much attention should be given throughout a study to both experimental and control groups. Two contemporary research handbooks, those of Gay (1981) and Borg (1981) advise that, if both control and experimental groups consider themselves to be in an experiment, the Hawthorne Effect is likely to occur for both groups thus removing it as a variable. In exceptional cases it is accepted that the staff of some schools may object to a control group on the grounds that it is unethical to "deprive" a group of children of what will certainly prove to be beneficial for the experimental group.

Topping (1987a) examined 57 studies in the Kirklees Paired Reading Project using control groups for the years 1984 to 1986. On aggregate he notes that control group children appeared to gain at 2.2 "tnp" while project group children gained at 4.3 "tnp". Topping does not state whether these figures relate to reading accuracy, to comprehension or to a composite score but it is safe to assume that he is referring to reading accuracy. His conclusions are important. He comments that "... the apparently high rate of gain of control group children is a common finding in this kind of research design, and ... reflects some contamination of enthusiasm and interest in reading from the experimental group. Very few teachers are able to resist the temptation to use the good example set by project children to further encourage non-participating children although this is scientifically inconvenient." (writer's emphasis).

In the light of the preceding comments the research of Lawrence (1971, 1972, 1981 and 1985) and of Lawrence and Blagg (1974) takes on added significance. The substance of their research findings is that "... children who receive remedial help with the skills of reading will show higher gains in reading if this help is supplemented by a therapeutic approach aimed at enhancing self-esteem." (see Lawrence, 1985). Work by Athey (1970) found that self-concept, feelings of adequacy, personal worth, self-confidence and self-reliance seem to emerge as important factors in the relationship with reading achievement. Spache (1954 and 1957) also found that poor readers were inferior to normal readers in interpersonal skills, social

participation and satisfactory recreation. Shatter (1956) confirms these findings with retarded children who made significant gains in reading as well as in maturity, independence and self-reliance as a result of a group-therapy programme. What may be particularly significant is the structure of Lawrence's "therapeutic" approach described in Lawrence (1971). The counsellor introduced himself as a person interested in children and who was concerned to see that they were happy in school. His/her aim was to establish an uncritical, friendly atmosphere in which the child was totally accepted and provided a "sounding board for the child's feelings." Direct questioning was avoided and the interview was child-centred throughout, covering relationships with parents, siblings, peers and relatives; hobbies, interests and aspirations, immediate and long-term; worries, fears and anxieties; attitudes towards school and self, etc.

The foregoing comments both of Topping and of Lawrence together with the conclusions made from this examination of the research literature relating to the Hawthorne Effect, suggest that all the children, whether in the control or the experimental groups, participating in school/home-based paired reading research are susceptible to an experimenter effect. In consequence of these considerations it would appear that the decision taken to make an attempt to sustain equal enthusiasm across experimental and control groups in the present study is the best method of control for the Hawthorne Effect in the present state of knowledge and is reasonably justified. The

patent lack of clarity as to precisely what the Hawthorne Effect is and the considerable disagreement about methods of controlling it lend further support to the decision. In addition, the comprehensive questionnaires which have been devised to provide feedback together with post-experimental interviews were recommended by Adair (1984) as an additional device to discern the strength of the Hawthorne Effect.

There is one final comment to make: to emphasise that the Hawthorne Effect is not a chimera (see Bauernfeind and Olson, 1973). There really is something there and the implications for further research to determine precisely what is there is apparent. Adair (1984) rightly cautions (already quoted) that the Hawthorne Effect is "... not an artifact to be discarded but is of substantive significance to both psychology and education."

5.4. CONSTRUCTION OF HYPOTHESIS.

To recapitulate, it is submitted that the preceding literature review of paired reading and the subsequent consideration of wider research issues with implications for the present study amply justifies the need for further research. In summary justification is predisposed by overenthusiastic statements about the effectiveness of paired reading based on inconclusive evidence deriving from methodological weaknesses. These weaknesses include inappropriate measures, small samples, lack of control groups and an overall absence of experimental rigour in a substantial proportion of paired

reading research. These deficiencies have prompted a "backlash" whose proponents argue that paired reading is no more effective than any other reading technique involving parental tuition. The case for further research however can be more broadly argued on a number of specifics.

a. The need for comparative research into claims that variants of paired reading are as effective as the prototype technique.

b. The need for comparative and replicative research into the extension of the paired reading technique from the use of parental tutors to the use of children as tutors.

c. The extension of research into the demonstrated relationships between the cognitive style conceptual tempo or reflectivity/impulsivity, as measured by the MFFT, and the reading attainment of young primary age children, to its function as a variable in paired reading tuition.

d. The need to examine the possibility that the attitude of children to reading would change as a result of their participation in paired reading tuition.

e. The need to examine whether any short term improvement in children's reading performance is sustained in the longer term. This question is important given that most remedial reading schemes appear to show little lasting effect.

f. The need to determine whether the choice of reading performance measure makes a difference to the results. This is made necessary because claimed deficiencies in The Neale Analysis of Reading Ability Test which will be

discussed have been blamed for the large increase in comprehension scores by comparison with reading accuracy scores in children after paired reading tuition.

g. The need to examine systematically the comments by teachers, parents and children on the paired reading technique.

Referring to items (a) and (b), a search of the literature (January 1988) has failed to discover any contemporary research addressing these comparisons as set out in the hypotheses. A similar search has failed to discover any studies linking paired reading and conceptual tempo (item c) or an instrumental examination of attitudes to paired reading (item d). Limited attempts have been made to look at the long-term effects of paired reading (item e) and a substantial number of studies report the comments of participants though only a few with the aid of questionairres (item g). Neither of the latter two items have been examined within a comparative frameworK.

Following the findings from Lawrence's (1971 et seq) studies which have shown the effect on children's reading progress of weekly counselling sessions from non-professionals it was the initial intention in the present study to include an additional experimental group of children receiving weekly counselling from parents. Regrettably it was not possible to combine this aspect of research with the other comparative research groups for practical reasons - in particular, numbers of children in the 2nd year were insufficient; the problem of managing the additional workload for one person precluded it and the

headteachers of the schools concerned were also reluctant to accommodate it.

The literature search has not made out a case for measuring the attitude of children to reading. This will however be rectified in the method section. It was deemed that the argument for including an attitude measure could be more economically considered when appropriate tests for use in this study are reviewed.

The following hypotheses were constructed to address the concerns expressed by the foregoing conclusions. Hypotheses 1(a), 1(b), 2(a), 2(b) and 3 are framed in the null form because of one or two claims either that the independent or the simultaneous mode of paired reading practised on their own are as effective as the classical form. It has been clearly deduced from the literature that the remaining hypotheses should be framed in the directional form; by comparison with a control group the relative effectiveness of the independent variables can be more accurately assessed in statistical terms

NULL HYPOTHESES

1 (a) There will be no significant difference between the reading progress in terms of overall reading quotient or of subscores A to F (as measured by the Edinburgh Reading Test Stage 2) of second year junior children who are tutored by parents using the paired reading technique as used by Topping (1985b) (Group 1) and those tutored by parents using the * simultaneous mode of the

paired reading technique alone (Group 2)* over a nine week intervention period.

1 (b) Insert "independent" and "(Group 3)" instead of "simultaneous" and "(Group 2)" at * in 1 (a).

2 (a) There will be no significant difference between the reading progress in terms of overall reading quotient or of subscores A to F (as measured by the Edinburgh Reading Test Stage 2) of second year junior children who are tutored by their parents using the paired reading technique as used by Topping (1985b) (Group 1) and those tutored by * their peers using the same technique (Group 5)* over a nine week intervention period.

2 (b) Insert "fourth year junior children" and " (Group 6)" instead of "their peers" and " Group 5" at * in 2 (a).

3. There will be no significant difference between the reading progress in terms of overall reading quotient or of subscores A to F (as measured by the Edinburgh Reading Test Stage 2) of second year junior children who are tutored by their peers (Group 5) and those tutored by fourth year junior children (Group 6) in Topping's (1985b) paired reading technique over a nine week intervention period.

DIRECTIONAL HYPOTHESES

4. Second year junior children tutored by parents in Topping's (1985b) paired reading technique (Group 1) or in the simultaneous or independent modes (Groups 2 and 3) will make greater reading progress in terms of their reading

quotient and subtests A to F (as measured by the Edinburgh Reading Test Stage 2) than a control (i.e. non-treatment) group (Group 4) over a nine week intervention period.

5. Second year junior children tutored by their peers (Group 5) or by fourth year junior children (Group 6) in Topping's (1985b) paired reading technique will make greater reading progress in terms of their reading quotient and subtests A to F (as measured by the Edinburgh Reading Test Stage 2) than a control (i.e. non-treatment) group (Group 4) over a nine week intervention period.

6. Second year junior children (Group 7) and fourth year junior children (Group 8) acting as tutors to second year juniors (Groups 5 and 6 respectively) using Topping's (1985b) paired reading technique will make greater reading progress in terms of reading quotient and sub-tests A to F (as measured by the Edinburgh Reading Test Stages 2 and 3) than a control (i.e. non-treatment) group (Group 4) over a nine week intervention period.

7. Second year junior children who are reflective (as measured by The Matching Familiar Figure Test) will show greater reading progress in terms of their reading quotient and subtests A to F (as measured by the Edinburgh Reading Test Stage 2) than impulsive children (as measured by the Matching Familiar Figure Test) who have received similar tutoring over the test period.

8. Second year junior children who are public library members and who are involved in the paired reading intervention will achieve a significantly better reading performance in terms of their reading quotient (as measured

by The Edinburgh Reading Test Stage 2) than those second year junior children who are not members of a public library who have received similar tutoring.

9. Second year junior children who have a positive attitude towards reading (as measured by the Dundee Attitude to Reading Test ATR2 Global) will achieve a significantly better reading performance in terms of their reading quotient (as measured by the Edinburgh Reading Test Stage 2) than those who have a negative attitude towards reading.

10. Second year junior children who have a positive attitude towards school (as measured by the Dundee Attitude to Reading Test ATR2 Global) will achieve a significantly better reading performance (as measured by the Edinburgh Reading Test Stage 2) in terms of their reading quotient than those who have a negative attitude towards school.

11. Second year junior children who have a high estimate of their own ability (as measured by the Dundee Attitude to Reading Test ATR2 Global) will achieve a significantly better reading performance in terms of their reading quotient (as measured by the Edinburgh Reading Test Stage 2) than those who have a low estimate of their own ability.

12. Second year junior children who participated in the paired reading study either as pupils or tutors and who had a negative or moderate attitude to reading before the intervention (as measured by the Dundee Attitude to Reading Test ATR2 Global) will show a significant

improvement in their attitude to reading after the intervention.

13. That any significant effect in terms of the difference between the reading quotient means at Times 1 and 2 will be maintained after the lapse of nine months from the cessation of the paired reading intervention (as measured by the Edinburgh Reading Test Stage 2).

CHAPTER 6

THE PILOT STUDY

6.1. Introduction

6.1.i. The target population

The school where the pilot study took place is a small residential special school for children from five to twelve years of age in south-east England. The children are typical of so many schools for the delicate, the term used under the 1944 Education Act. At present the most common factor predisposing a residential placement is some form of breakdown within the family which has made management of the child difficult. Secondary or interacting factors for the choice of the school are such illnesses as epilepsy, diabetes, haemophilia, asthma and some rare genetic abnormalities all of which require careful management. Other factors are "failure to thrive", parental neglect, learning difficulties and, not least, behavioural problems - the latter being a significant factor in over 75% of the children placed.

It has been the policy of the responsible education authority during the middle and late 1970's and early 1980's, as the numbers of delicate children in need of residential education decreased, to recommend some mild and moderately disturbed children for placement at the school. Of the original eight children who were deemed maladjusted under the 1944 Act and in need of psychiatric supervision

only three now remain, the rest having gone on to secondary education. However an analysis of Bristol Social Adjustment Guide (Stott, 1974) data available show the percentage of general disturbance referred to above (viz. 75%). The school can accommodate 55 children though present numbers are temporarily down to thirty for a variety of reasons which it would be irrelevant to discuss here. The children are all either of average or below average intelligence described by the reports of educational psychologists before referral.

It has also been increasingly realized over the last five years that many of the children referred to the school were substantially delayed in their language development and this led to the establishment of a language unit within the school ultimately for up to twelve children. One of the criteria for admission to the unit is that expressive language development should be at least two years behind non-verbal performance; receptive language might be commensurate with or above expressive. The other significant criteria so far as these observations are concerned is that non-verbal performance should be within the broad average range.

6.1.ii. Aims of the pilot study

The aim of this pilot study was to provide the author with familiarity in the use of the paired reading technique, to identify problem areas and to benefit from the "casual" comments of the participants as an alternative to imposing a structured response which at this stage would be relatively uninformed. Subsidiary aims were to involve the child care staff more directly in children's language

development and to discover whether it was practicable to operate paired reading in the dormitories with some bustle of movement going on in the vicinity. It has been the practice in the dormitories for houseparents to read to the children before they go to sleep and, almost without exception, the children enjoy listening to bedtime stories. A further aim of this study was therefore to provide additional motivation for the children to read for pleasure; good reading habits are already well established as class/school based exercises and this study attempted to extend this pleasurable activity into leisure time. Lending further support to these aims was the realization about a year prior to the start of this pilot study that, if the needs of children with delayed language development were to be met, a 24 hr curriculum should be developed. In this way it was intended that all categories of staff should be involved, not only during the school day but whilst cleaning teeth, dressing, at the meal table and during recreational activities, etc. Without turning every situation into "school", houseparents were encouraged and guided to enable the children to articulate their experiences whatever they were doing.

6.1.iii. A procedural explanation

Since the pilot study was conducted under the general auspices but not under the direct control of the author a word of explanation is necessary. The educational psychologist for the school saw the possibilities for paired reading shortly af the publication of Morgan's initial studies in 1979 and conducted a small study in two south-

east London primary schools (see Heath,1980). Early in 1985 he discussed the possibility with the author of enlisting the interest of child care staff in a small pilot study of paired reading within the school. Quite independently a paper which the author was required to write on the subject of parental involvement in their children's education led to a realization of the way in which interest in paired reading involving parents had burgeoned since 1979. This led subsequently to the involvement with the present research project and, in the autumn of 1985, this small 'exploratory' study was initiated under the general guidance of the author and the specific guidance of the deputy head. 6.1.iv. Assumptions of the pilot study

Certain assumptions were made in that the aims were exploratory in emphasis and hence the "special" nature of the sample would not detract from the "validity" of the exercise, nor would the quasi-parental role of the care staff within what is a "school" atmosphere markedly do so.

6.1.v. Other similar studies

A search of the literature has uncovered only one comparable study in a residential school. Topping et al (1985) conducted a small pilot study in a school for boys with emotional and behavioural problems between eight and thirteen and a half years of age. Houseparents were used as tutors and newspapers, comics and magazines were permitted. The difficulties reflected those which will become apparent in this present study. The average gain for the small group of five boys was three "tnp".

6.2. METHOD

6.2.i. The sample

Twelve children took part in the study ranging in age from 9y 5m to 12y 2m. Two criteria were applied. That the child should be a delayed reader and that a member of the child care staff with whom he or she had a good relationship would be available and sufficiently interested to try out the technique. The twelve children were paired with ten houseparents; two houseparents having two children each. It was not possible to say that all children below a certain age would participate because of the relationship factor. Of the ten houseparents who participated in the project initially, one left before the end of the autumn term 1985 before any evaluation was made and one other failed to achieve a rapport with her pupil. This was no surprise as the child in question was considerably disturbed and it therefore required exceptional skill to obtain consistent responses from him. The pilot study began on Wednesday 25th September 1985.

6.2.ii. Tests used

The Neale Analysis of Reading Ability was used in this study. A detailed critique of this test together with the relevant citations will be found in the main study hence comments made here are brief and pertinent only to the "naivete" of a pilot study. The use of the NARA in this study provides a "nice" example of how certain educational tests become entrenched as definitive instruments. The NARA was used here principally because hearsay attested to its popularity, colleagues whose opinions were known to be

generally reliable recommended it and it has been extensively used in paired reading studies which facilitated its comparative role. Other superficial features made it acceptable; it was cheap, simple to administer and a comparatively speedy and convenient method of measuring reading progress. It is significant that, whilst some researchers continue to use the NARA, they were also cautioning against over-reliance on its data. The main critique (see Appendix 26) adduces conclusive evidence that the continued use of the NARA for research studies is unwise though its spurious convenience for comparative purposes and its popularity appear to prevail over commonsense or the lack of alternatives. With hindsight, after the detailed comparisons of contemporary reading tests in the main study, the inadequacy of the NARA should have been evident and the corresponding virtues of the Edinburgh Reading Test apparent. For two children who were very delayed readers the NARA was not deemed to be sensitive enough to measure their reading ability; The Standard Reading Test (Daniel and Diack, 1979) was used instead . The use of the Daniel and Diack, whilst justified for this limited use, is not suitable for the main research project for reasons also given in the main test reviews (see Appendix 25).

6.2.iii. Topping's classical paired reading technique

To avoid duplication of material contained in the literature review to the main study the description and discussion of the paired reading technique will be limited to what is necessary to make the pilot study intelligible. Topping (1985b) has prepared a paired reading training pack

with the aim, in his words, "... to avoid the risk of other LEA's adopting watered down methods and bringing paired reading into disrepute..." The pack was prepared by Topping for the Kirklees Directorate of Educational Services who have been involved in initiating a growing number of paired reading projects in West Yorkshire and in organizing annual "national" conferences held in Dewsbury from the year 1984. Some of Topping's materials will be used both in the pilot study and the main study and will be appropriately acknowledged. A brief description of his paired reading technique is given below.

a. The child should choose the book: don't worry if it seems too hard: it's OK if your child wants to change the book: it's OK to read the book repeatedly if the child wants to.

b. Attempt to do paired reading every day for at least five minutes but not more than fifteen minutes unless your child wants to carry on.

c. Don't make children do paired reading if they want to do something else.

d. Try to find a quiet place, comfortable and close.

e. You and your child both read the words out loud together. Adapt your speed to that of the child but do not go too fast.

f. Your child should read every word. If your child struggles and then gets it right, show you are pleased. Don't let your child struggle for more than five seconds. If your child struggles too long or struggles and

gets the word wrong just say the word right yourself and make sure your child then says it right as well.

g. Make sure your child looks at the words. It can help if one of you points to the word you are both reading with a finger though it's best if your child does this.

h. When you are reading together and your child feels good enough, your child might want to read a bit alone. You should agree on a way for your child to ask to be quiet. This could be a knock, a sign or a squeeze. (You don't want your child to have to say "be quiet", or your child will lose track of the reading). You go quiet right away.

i. When your child struggles for more than five seconds, or struggles and gets it wrong, you read the word out loud right for your child. Make sure your child then says it right as well. Then you both go on reading out loud together until your child again feels good enough to read alone, and again asks you to be quiet.

j. When your child gets a word wrong, you just tell your child what the word says. Then your child says it after you. You DON'T make the child struggle or 'break it up' or 'sound it out'.

k. When your child gets words right, you smile and show you are pleased and say "good". You DON'T nag and fuss about the words your child gets wrong.

l. Show interest in the book your child has chosen. Talk about the pictures, discuss or comment on the story preferably at the end of a page or a section. Ask what your child thinks might happen next. Listen to your child -

don't do all the talking.

6.2.iv. Topping's instruction booklet

The instruction booklet which Topping has developed for parents is wordy and the presentation is somewhat stilted presumably in an attempt to ensure that parents who are either semi-literate or first generation immigrants should understand. It is submitted that instructions which extend to over 650 words of unattractive and close typescript are unsuitable for the average busy parent to absorb. The handbook for parents developed as an outcome of the experience derived from this pilot study presents the basic paired reading technique in a summary of 120 words in "jumbo" typescript (see Appendix 8). It then goes on to describe each point in greater detail. It is considered that the tutorial meetings for parents and the "skeleton" technique are sufficient for the effective delivery of paired reading.

6.2.v. Procedure

Two meetings were held for child care staff tutors who were participating in the paired reading pilot study. After the aims of the project were discussed, the paired reading video produced by Keith Topping was shown illustrating the components of paired reading. The video showed a number of children and parents demonstrating the technique. It was appropriate to halt the video at a number of points to emphasise the components: reading together, the transition to reading alone and the reversion to reading together after an error. Following the video the tutors had an opportunity to practice the reading together component in

pairs. The deputy head judged that, for a period of four weeks, paired reading should be confined to reading together to ensure that it was well established. This was an interesting departure from Topping's procedure though for the main study it was only deemed necessary to practise the reading together component for one week and this accords with the findings of paired reading research.

The pilot study was designed to continue for the remainder of the term apart from the pre-Christmas period but the practicalities of implementing it proved too difficult; these will be discussed below.

The writer sat in on a number of the reading sessions some of which were video-taped and others audio-taped. The care staff tutors kept a diary of their pupil's progress and of the problems encountered; also a paired reading checklist which recorded the degree to which the prescribed procedure had been adhered to. At intervals seminars were held with tutors to discuss any difficulties and advise on remedies. The detailed records of video and audio recordings, the tutors' diaries and the checklists can be seen in Appendices 2a to 2d.

6.3. RESULTS

6.3.i. Tabular data

An analysis of the paired reading tuition which took place in the school during the autumn term 1985 is shown in Table 1. The pupils are designated by name in the first column. The next column records the duration of the study which each houseparent managed to achieve and the two following columns give the total number of sessions and the

average length of sessions in minutes. It will be apparent from the considerable variation in the number of completed sessions that they were very spasmodic; in fact for some tutors pressure of involvement in other tasks meant that there were lapses of over a week on occasions between sessions. The length of session was also subject to considerable variation between five and fifteen minutes though the mean of just under ten minutes was very satisfactory.

Interesting data are shown by the pre- and post-study administration of the Neale Analysis of Reading Ability shown in Table 2. The post-test post-dates the completion of the paired reading pilot study by some four months. It was assumed that post-testing would be done at the end of the autumn term. Due to a misunderstanding and with some reason the deputy head concluded that a post-test would be relatively meaningless in many cases because of the erratic nature of the paired reading sessions and the considerable variation in the number of sessions. The results of the delayed tests (seven months after the pre-test and 4 months after the end of the project) were somewhat surprising and quite unanticipated though they should of course be treated with considerable caution.

Reference to Table 2 shows that four children made the following remarkable increase in their comprehension scores during the period between pre- and post-testing. Over this seven month period Mark, Roger and Anton made a 31 month, 15 month and 10 month increase in their comprehension score respectively and over a five month period Marina made

an 18 month increase. For the same period reading accuracy increased for Mark, Roger and Anton by 8 months, 12 months and 7 months respectively and for Marina by 5 months.

TABLE 1. ANALYSIS OF PAIRED READING TUITION SESSIONS SEP/DEC 1985.

PUPIL	DURATION	NUMBER	AVERAGE LENGTH.
ANTON	7 weeks.	13	12 mins.
MARINA	9 "	30	10 "
MARK	4 "	12	8 "
MARIA	14 "	25	11 "
ANNIE	5 "	5	10 "
TOM	4 "	14	5 "
ROGER	5 "	15	10 "
RAYMOND	4 "	12	9 "

TABLE 2. DIFFERENCES IN MONTHS BETWEEN PRE AND POST STUDY SCORES ON THE NARA (Interval between tests = 7 months)

PUPIL	CA	RA	COMPREHENSION
ANTON	7	7	10
MARINA	5	5	18**
MARK	7	8	31
MARIA	-	-	-
ANNIE	7	0	-3
TOM	7	0*	0*
ROGER	7	12	15
RAYMOND	7	5*	*

* Daniel and Diack Standard Reading Test was used which only tests reading accuracy. ** Marina was retested after 5 months.

6.4. Discussion and conclusions

6.4.i. General comments

The three aims of this study have been subserved and will be discussed below: to provide the author with familiarity with the paired reading technique, to identify any problem areas and to examine the possibility of conducting research into paired reading within a residential setting using child care staff as tutors. Apart from these aims it quickly became apparent that it would not be possible to place any credence upon the pre- and post-testing using the Neale Analysis of Reading Ability. Some attempt to explain the disparate results between the

comprehension and reading accuracy scores is called for. The startling increase in the comprehension scores for the four boys could reflect the growing disquiet, (mentioned in Chapter 3.7.ii and discussed in Appendix 26) with the reliability and validity of the Neale as a research instrument and supports the decision not to use the test in the present study. On the other hand, whilst the Hawthorne effect might account for the overall improvement in both the comprehension and reading accuracy scores, it is difficult to see how it could account for the differential between the scores.

In spite of the loosely structured nature of the pilot study results reflect the findings both of more rigorous and of comparatively unstructured small-scale studies which have been quoted in the literature review (cf Bush, 1983; Bushell et al, 1982; Evans, 1984; Heath, 1980; Pitchford and Taylor, 1983; Robson et al, 1984 and Topping and McKnight, 1984). Such results also lend some credence to the initial and persistently extravagant claims for paired reading which are examined in the main study.

6.4.ii. Benefits to school

The benefits to be derived from operating a paired reading scheme within a residential special school using care staff as tutors are undeniable. The level of enthusiasm for the technique was high and consequently the insight gained into children's needs and the participation in and commitment to their children's progress was enhanced even if in some cases regular paired reading was impractical. Where tutors read with expression and verve it was noticeable how

readily the children's expression and animation increased which added to the enjoyment of both tutor and pupil.

Of particular benefit was the gain in confidence of children with the minor but psychologically damaging disability and disfigurement of harelip. One child in particular progressed to a stage where she could unselfconsciously read in the presence of an audience whilst the other child asked to participate. A very marked improvement in the behaviour of Roger, one of the few maladjusted children remaining in the school, is also probably attributable to the reading success with which he was so delighted. There has been a considerable decrease in his violent outbursts, disruptive behaviour and bullying. He is also a boy who hates to be beaten; competing against himself gave him immense satisfaction. It was also very encouraging to note the enjoyment which Roger derived from paired reading; a progress which drew comment from his tutor. Roger was almost four years delayed in reading at the start of the study. Another boy, Anton, whose behaviour in the dormitory was unco-operative with his houseparent changed his attitude to her after a session of paired reading. So far as the school is concerned paired reading will become an essential teaching aid and form "part" of the 24-hr curriculum. Suitable modifications will be made to the timetable and suggestions made about dormitory organization will be effected to enable paired reading to start in earnest.

It is doubtful whether the number of children in the school would be sufficient to sustain a rigorous study

of child care/pupil pairings together with a control group. It is also doubtful whether such pairings present a viable study within a residential setting even where duties have been modified to accommodate paired reading tuition; there are so many unforseen contingencies occuring to interrupt the flow of tuition. This may be regrettable but, if as an outcome of this pilot study, paired reading continues to involve care staff and continues to produce all-round benefit to the children in the residential special school under study, a measure of satisfaction can be derived for two reasons.

Firstly it is gratifying that the school is probably one of the few residential special schools to resort to the paired reading technique - certainly there is only one reported study in special schools of any description. Secondly this study is a "nice" example of small-scale research undertaken in a school with the promising all-round results recorded above.

The results are very pleasing from the viewpoint of the staff who went out of their way to make an attempt to provide regular paired reading sessions. They are also an encouragement to all the staff who participated, but who found that, within the existing timetable and for other practical reasons continuity of paired reading sessions could not be provided.

6.4.iii. The pilot study as a guide to the main study.

The pilot study acted as an essential 'testing ground' for the selection of appropriate paired reading procedures for the main study. The following discussion,

based on experiences from the pilot study and from other research findings, will provide the basis for the instructions to be given to parents and child tutors in the main study. N.B. As a preliminary step permission was obtained to adapt a handbook produced by Nottinghamshire Education Department (1985) (see Appendix 8). Chapter 3 provided the sequence of the elements comprising Topping's paired reading technique but the minutiae of its practical implications have been left until now to obtain the benefit of direct experience from the pilot study. This section, therefore, attempts to utilize evidence obtained from the pilot study with the detailed advice given by a large number of researchers derived from their paired reading studies which has hitherto not been conveniently available in one place.

The discussion is based on the nine points of Topping's classical paired reading sequence.

a. Allow the child to choose the book

The choice of book did not generally present a problem to the children or the tutors. Where children wanted to repeat a book or a story, or where they chose a book which was too hard this was accepted by the tutor without demur as part of the learning process.

The essential point to make here is that the tutor should refrain from the initial desire to offer the child advice. If advice is sought that is a different matter though it should be the tutor's aim to encourage the child to make his or her own choice. Both Topping (1985b) and Morgan and Lyon (1979) recommend, and subsequent research

confirms, that it may frequently happen that the children's first choice is too difficult for them but that they will soon learn to choose a more suitable book. This is an achievement to be valued in terms of the pupil's ability to assess the book's degree of difficulty. In fact Morgan (1986a) notes that some children will choose highly specialist books which they have always wanted to read. Another point to note is that children's wish to repeat a book is not something to be discouraged, but may well contribute to their need for confidence. Perhaps this kind of "overlearning" may be bound up with the need for a sense of security. Initially children may wish to change a book before it is completed and this is also a perfectly normal behaviour enabling them to refine their judgements. However it is also clear that if children persistently choose inappropriate books they should be advised on more suitable choices. Reading material need not be confined to the school library. Children may have a favourite book of their own which they want to learn to read or recourse can usefully be made to the local library if this is not already an established practice. From a practical point of view, if children borrow books from other sources it relieves the pressure on the school's resources. It is also appropriate to mention here, as Morgan (1986a) reiterates, that no specially printed books are needed for paired reading, a point stressed elsewhere.

The pilot study also showed the need to sort through the school library before initiating a paired reading project to discard outdated and unsuitable books.

b. Choose a comfortable quiet place close together.

It goes without saying that it would be counter-productive to start paired reading at a time when a favourite television programme is on or where there is some other counter-attraction. Where a child's attention wanders during an evening session or where he is clearly tired, morning sessions should be tried if this is convenient. The whole emphasis should be on a relaxed, intimate situation with good lighting. It would be quite wrong to insist on a venue free from interruption; it is after all quite normal for many children to read amid considerable rumpus. There is a tendency throughout paired reading research to overstress a quiet situation when it may be well-nigh impossible to achieve this in a busy home. However, ultimately the parent must be the judge of whether her child is so distractible as to need relative quiet or whether this is comparatively unimportant. Two pupils in the pilot study were easily distracted but tutors commented that, after the establishment of paired reading, their pupils remained undisturbed by some general clatter around them and by other children engaged in quieter activities. Where armless easy chairs or a settee are available they facilitate comfort and enable the parent to read the book herself whilst leaving it conveniently placed for the child otherwise pupil and tutor can sit side-by-side at a dining table. Where possible the child should be encouraged both to hold the book and to turn the pages.

c. Parent and child read all words together.

It would appear that too much has been made of the need for synchrony which has been an essential part of the paired reading technique since it was originally devised by Morgan. It is helpful to examine video recordings of synchronized reading made during the pilot study where it is evident that a measure of synchrony is achieved where the vocabulary is familiar to the pupil but, where the pupil is presented with an unfamiliar word, reference to the comments on the respective videos noted in Appendix 2c show that the pupil lags behind momentarily. It would appear that the pupil's pronunciation of the difficult word is triggered by the tutor's pronunciation of the first syllable in a number of cases. This can be demonstrated by "freezing" the tape. If this is a correct analysis of what is happening, over-emphasis on synchrony could have an adverse effect where the more difficult words are concerned. For this reason, whilst synchrony can be emphasised as a desirable component of the paired reading technique, an over-emphasis could introduce an element of anxiety into the tutor/pupil relationship which it was expressly designed to avoid. It would appear that synchrony occurs "naturally" through the mere process of reading together.

Morgan (1984), in discussing this process, implies a similar concept when he explained to a child that it was like being given a piggy-back through "nasty" words though precisely how synchrony is deemed to contribute to the success of paired reading remains unsubstantiated by

research. On the other hand it is important to avoid children lagging so far behind that they are merely repeating the words after the tutor and where there is a danger that this is a purely mechanical "shadowing" process of little benefit to them. A balance is called for. It would appear however that "echoing" very rarely occurs other than in the early stages of paired reading where the technique is being acquired and where some initial difficulty is experienced until a rhythm is established perhaps with a mutual sensitivity to pause or phrasing.

There is also a need for considerable patience on the part of the tutor to adapt to the child's pace: where children are delayed in reading this may entail an almost metronome-like progress in the initial stages. An attempt should be made to keep going but, if a child fails at a difficult word, a return should be made to the beginning of the sentence. In most cases the child will read the word successfully, but a repeated failure is a signal for the parent to say the word for the child to repeat.

Observation during the pilot study did not indicate any problems with tutors attempting to teach phonics, break-up words or nag at children.

d. Attempt to do paired reading for up to fifteen minutes a day for six days a week.

The variance in length of sessions in the pilot study reflected Topping's advice of a minimum of five minutes and a maximum of 15 minutes. Only in an isolated case did a child appear to fail in concentration before the completion of an intended fifteen minute session.

Wolfendale (1985a) emphasises the need for parents and children to enter into a contract to read for a certain time on a fixed number of days per week. Topping (1985b) recommends that the length of session should be at least five minutes but not more than fifteen minutes unless the child wants to carry on. This is too loose a structure for research purposes, but to insist on a precise length of session might cause unnecessary anxiety. Though in theory, as discussed above, fifteen minutes has been shown to be tolerable in a large number of studies a latitude of five minutes would allow some flexibility without jeopardizing the research objectives. In any event the tutor should attempt to end the session at the end of a chapter or at a natural break thus providing some measure of anticipation for next day's session. Branston and Provis (1984) stress that a book should be read in meaningful units. The commitment by parents and children to between ten and fifteen minutes six days a week is essential for research purposes and is preferable to Topping's injunction not to make children do paired reading if they want to do something else. Some drop-out will inevitably occur but to invite the option is too negative; the whole emphasis from the start of the project should be a positive one.

e. The parent should point to the words if necessary though it is better if the child does so.

Clay (1979) argues strongly for the value of the child pointing. She pointed to research by Zaporozhets (1965) showing that young children of three or four years of age often depend on body or hand movements to help them

learn the features of new objects. Clay concludes that a substantial number of five year olds, when introduced to reading, greatly benefit fron body and hand participation and that some children will have a persisting need for this kinaesthetic source of information. Chall (1967) found that speech training in sequencing aided by manual pointing helped many poor readers. Clay (1979) discounts the comments of some reading experts who have criticized the use of pointing in reading because it has been associated, they say, with slow word by word reading in older children. She advances her own research to show that most children pass through a word-locating stage but some chidren remain fixated. Stierer (1984) is also of the opinion that a finger moving along print shows the child that the story "comes from" the print and that it moves from left to right. Topping and McNight (1984) also urge that initially finger pointing is necessary and avoids what they term "mindless echoing". It should be emphasised that, if the child is pointing, the rest of the text should not be masked. To effect this Morgan (1986) suggests that pointing from the top is more likely to leave the words displayed in full. In any event the parent should be the judge of whether pointing is necessary and, if in doubt, she can seek advice. It is undesirable for the tutor to do the pointing if only because synchronization of pace is thereby made more difficult.

f. A pre-arranged non-verbal signal tells the parent to be quiet so that the child can read independently.

There does not appear to be any good reason deduced from studies why there should be any great delay in

initiating the transition to independent reading. Precisely when this occurs may have to be left to the judgement of the tutor with the advice of the supervisor though it would be preferable for the child to give the lead as happens in most cases. Generally speaking Morgan (1986) has found that it takes about six fifteen minute sessions for the child to develop confidence in the change over. However he recognises that, on occasions, a child does take time to get used to signalling. He advises the tutor to be patient and not to fall into the trap of stopping reading with the pupil because "it's about time she read on her own". When the pupils get used to the idea of signalling they will adopt the procedure quite frequently. The pilot study gave one instance of a tutor prematurely urging a child to read alone; the lesson would appear to be to leave the decision to the child but if he or she appears to delay too long to give some gentle encouragement. The change over to independent reading and reversion to simultaneous reading is usefully described by Morgan (1984) as a change of gear.

g. When the child fails to read a word or struggles for more than a few seconds paired reading resumes.

Both Topping (1985b) and Morgan (1979) advise that four or five seconds delay should precede correction. However, one important piece of research was that of McNaughton and Glynn (1981), who conducted a study of delayed versus immediate correction of oral reading errors and its effect on accuracy and self-correction. They hypothesised that immediate attention to errors restricts opportunities for the reader to attend to syntactic and

semantic clues following the error and also restricts the reader's opportunity to self-correct. The study significantly defined immediate attention as that which was proffered within five seconds or before the next word was read and delayed attention as between five and ten seconds. When readers did not pause but kept on reading, attention was delayed until the end of the phrase or sentence. The results clearly indicate that immediate attention to oral reading errors interferes with accuracy compared with delayed attention and that, consequently, delayed attention was important to maximize progress. Stop-watch accuracy cannot be expected of tutors but instructions should be modified to encourage parents to defer correction more than five seconds - nearer ten if this can be readily estimated. There are clear incidents on the video film of the pilot study showing tutors waiting up to eight seconds to the benefit of both tutor and pupil when the word was correctly pronounced.

Morgan (1986) makes some observations about the process of independent reading. If a child is making frequent mistakes maybe the pace of reading is too fast or the book may be too difficult. Parents are also concerned, he notes, about their child ignoring punctuation or stumbling over small words. Whilst they should be encouraged to explain the function of punctuation marks, in the interests of the development of successful paired reading, it is important not to interrupt the flow of independent reading by pointing out either punctuation or "small" word errors. If the parent is concerned, on completion of the

session such mistakes can be referred to in a general way. In most cases greater reading ability will develop without attention to small errors.

A study by Anderson et al (1984), designed to answer whether a meaning emphasis or an emphasis on accurate oral reading gives better results in a reading lesson, produced the unequivocal answer that the meaning emphasis was superior. They define accurate oral reading after Hiebert (1983) where the teacher corrected every reading miscue and the child repeated the word and re-read the whole sentence. The alternative, and successful, meaning approach, bears some similarity to the simultaneous mode of paired reading i.e. miscues were ignored unless meaning was disrupted, in which case the word was supplied and the child read on; a questioning technique involved instructing the child to think what might happen next and then questioning at appropriate pauses in the text.

Subsequent to the decision made above to follow the paired reading sequence described by Keith Topping, Morgan (1986) has offered a revised error correction procedure for paired reading. Topping (1987b) refers to them as "... considerably different and more complex." and places Morgan's "refinements" in the context of a growing interest in error correction procedures. He also points out that, traditionally, little attention has been given to error correction procedures when advising parents. It is clear that if these additional recommendations of Morgan (1986) had been available prior to the decision made to use Topping's "structure" additional consideration to the

precise form of the error correction procedure might have been necessary. However, as influential as Morgan has been in the initial development of paired reading, it is submitted that Topping's (1987b) considered advice should be heeded. He has been engaged as an adviser to a large number of paired reading studies and his comments are based on a broader range of experience than Morgan.

Topping concludes that the "... bulk of evaluation evidence documenting the effectiveness of paired reading has come from projects and studies which have incorporated the most simple error procedure." He also argues that the more complex error correction procedure is lengthier and intrusive though he concedes that it may be useful for some children. Perhaps more crucially Topping argues, whilst it appears to be an assumption of most remedial reading schemes that a prime aim is to improve the child's accuracy in recognising words in isolation, the aim of the brief paired reading correction procedure is to "... support the child in the continuous process of extracting meaning from the text."

No doubt further research will be necessary to resolve what is the most apposite correction procedure and under what circumstances, but to attempt that here would be to confuse the aims of the present study. If Topping (1987b) is correct in saying that Morgan's new error correction procedure is more complex and that it is intrusive it will be interesting to see whether Morgan's (1985) comment about the "robustness" of the technique is impaired. He writes "... the initial hope, which appears to be substantiated by much of the subsequent research, was that paired reading

would be sufficiently "robust" to tolerate use over periods of weeks by adult tutors having received very limited instruction and supervision, and, eventually to withstand use by parents at home in competition with the hurly-burly and distractions of family activity." He also stresses that its "robustness" should consist in its being simple, logical and based on acceptable commonsense. Morgan (1984) also shrewdly commented, in a reminder to researchers, that the technique is "... not put into practice by hard pressed parents in precisely the pristine form in which it may be described in journal articles." which again might be seen as casting doubt on his alteration of the correction procedure.

h. Discuss story when a natural break occurs.

Parents should be encouraged to express interest in the story to emphasise the shared nature of the experience. It is better to discuss the story rather than to ask a series of questions about it which tends to become an extension of school. One essential form of the discussion should be to encourage the child in a guessing game as to what happens next; this will tend to add to the enjoyment of each session and initiate enthusiasm and motivation. Discussion should be limited to natural breaks in the story at the end of sessions. Guszak (1967) quotes evidence purporting to show that 70% of teachers' questions are concerned with retrieval of the trivial make-up of stories whereas the reader is more interested in gaining a broad understanding. Indeed questions directed to eliciting evidence of a broad understanding often produce answers in some detail. Flood (1977) investigated the relationship

between parental style in reading to children and their children's performance on reading tasks. He found that what is most beneficial is a style which encourages verbal interaction between parent and child. Ninio and Bruner (1978) refer to the interaction as a "scaffolding dialogue" which encourages the child's cognitive development. In a study referred to previously, Pelligrini (1982) contends that, of the various forms of interaction an open-questioning strategy is the "... most effective facilitator of associative fluency" and enables children to "...transfer analytical processes to novel situations." It was noticeable during the pilot study that very little discussion or questioning about the stories took place.

i. Praise your child.

Morgan (1986) is concerned that parents do not praise sufficiently and this was also true of care staff in the pilot sudy. He comments that "... silence is not very reinforcing of correct reading." and there is less reinforcement for correct reading than when the "pupil" is talking to mother when there are nods, smiles and sounds of approval. Morgan also stresses that what is appropriate praise for one child may not be so for another. It is also important to note the emphasis which he places on praise directed to the independent mode of paired reading. He explains that, by contrast with the simultaneous mode, where the parent is placed in the role of a continuous prompt for correct reading or participant modelling, independent reading "... aimed to provide positive reinforcement, by praise of correct reading responses." Praise for signalling

the wish to read independently was introduced to reinforce the selection of independent reading, which then gave opportunities to practise (and be praised for) responses acquired during simultaneous reading, and thus the possibilities of the learning being "sealed in" by successful and praised use. Whilst Morgan expresses some doubt about the precise "balance" of explanation between behavioural and other explanations there is a need to encourage standard reinforcement practice for research purposes. Many researchers have failed to follow Morgan and appear to encourage praise at appropriate points throughout the reading session. For the purpose of this study emphasis will be placed on the parent praising the change-over from simultaneous to independent reading and subsequently for the correct pronunciation of difficult words, particularly where there has been an element of struggle.

Burdett (1985), in a Hong Kong study of paired reading, noted the "reluctance" of parents to praise children. No-one appears to have given a satisfactory explanation of why this should be; it will be necessary to reiterate the need at the parents' meeting. However it is noticeable in videos of paired reading (Appendices 2c and 2d) that, in some cases, where there is an absence of verbal praise there is a cuddle of encouragement or other subtle reinforcement which is certainly not to be discouraged and is no doubt equally as effective as a word of praise. In support of this, research conducted by Miller et al (1986) showed that where parents were failing to praise their children verbally they were nevertheless creating a warm and

encouraging atmosphere during the paired reading sessions. He also mentions that it is commonly stated that parents find it difficult to praise their children under paired reading conditions, and there are suggestions from the pilot study that this may be so.

It would be quite arbitrary to discourage all praise during the child's initial attempts at simultaneous reading, but subsequently, when independent reading is established, praise should be confined to the latter mode a course which Morgan clearly implies in his studies. Parents should be encouraged to "tail-off" the more effusive praise given in the initial stages and the need for all praise to be sincere should also be stressed.

This concludes the discussion of the precise paired reading technique to be used in the main study but there are some points of a general nature to be appended. A useful piece of research which has import for a number of the preceding points was undertaken by Hannon et al (1986). They made an analysis of parents' and teachers' strategies when hearing young children read. Where praise was concerned, for teachers it ranked the third most frequent category, whereas for parents it ranked ninth. Criticism, though generally rare, ranked thirteenth among parents' categories but much lower at nineteenth for teachers'. It was also apparent that teachers were much more concerned than parents to establish the meaning of the narrative: this ranked seventh for teachers but fifteenth for parents. The whole study is represented by Hannon and his colleagues as a

refutation of extreme views about parental incompetence in hearing children read (also see Toepritz. 1982).

Secondly Topping's advice not to persuade a child to participate in a reading session if he or she is reluctant may also present a methodological problem for the main study. A tentative conclusion suggests that, where a child's interest is enlisted from the start and a "contract" entered into, the child's enjoyment gained from paired reading sustains the impetus. Presumably however there will be children such as the one in the pilot study who will refuse to "co-operate".

Finally it seemed appropriate to include some "don'ts" in the parents' handbook (see Appendix 8). A prime aim of paired reading is to remove or greatly reduce the child's anxiety so often associated with reading particularly where there has been a continuous history of failure and blame. Any negative comment or attitude such as threatening to "tell teacher" when a child falls from grace or a show of anxiety about apparent disinterest would be counter-productive. Likewise any suggestion that the child is in a competition or that he or she will be given a reward on the "successful" completion should be actively discouraged.

In this treatment of the paired reading technique in detail it is essential to remember that it may not be suitable for all children. As Morgan (1986) points out, it is pointless to force an unwilling child to engage in paired reading. In some cases it may be expedient to reduce the length of sessions at first and increase later to preserve

the overall tuition time. Pumfrey (1986) warns that evidence is beginning to accrue that, in some parent-child dyads, the interactions could be aversive and lead to alienation from reading. This is not surprising, but Pumfrey adduces no evidence for this as a widespread phenomenon.

C H A P T E R 7

M E T H O D O L O G Y

7.1. Design and procedure

7.1.i. The research design

The proposed design was prepared during the autumn of 1986. It is a pre-test - post-test control group design for five groups and a control. In recognised symbolic form (see Gay, 1981) the "pattern" was as follows:

		Pre-		Post-
Group 1.	R	O	X1	O
" 2.	R	O	X2	O
" 3.	R	O	X3	O
" 4 or C	R	O	_	O
" 5.	R	O	X5	O
" 6.	R	O	X6	O

Where R = Random assignment of subjects to groups; Pre-O = pre-test; Post-O = post-test; C = control group. NB

The control group C was alternatively designated Group 4 because it was randomly selected from the school identified as Upstead P and it was less confusing to keep it with the Upstead P groups 1, 2 and 3, Groups 5 and 6 being from the school identified as Browning C. In terms of independent variables the groups were differentiated as follows:

X1 = classical paired reading with parent tutor,

X2 = simultaneous mode of classical paired reading with parent tutor,

X3 = independent mode of classical paired reading with parent tutor,

X5 = peer tutoring using classical paired reading

and X6 = cross-age tutoring using classical paired reading.

The control (i.e.non-treatment) group would continue to receive "normal instruction". In each group the dependent variables for comparison across the groups would be reading attainment as measured by the Edinburgh Reading Test in terms of accuracy, reading rate and comprehension; the degree of impulsivity as measured by the Matching Familiar Figure Test and attitude to reading as measured by the Dundee Attitude to Reading Test ATR2 Global.

7.1.ii. Target population

To make a decision about which schools to approach to seek co-operation in the research project two points in particular had to be considered: the size of the sample and the predominant social class of the families within the catchment area. Where the catchment area was concerned it was important to have some assurance that the response from the parents would be sufficient to enable the research to proceed. Within the educational division of the county where the research takes place there is no doubt that children in schools drawing from disadvantaged catchment areas have by far the greater number of reading problems than the children in schools drawn from middle-class areas, a phenomena which

is well-established in previous literature (see e.g. Clarke, (1979).

The survey of the literature shows that paired reading is equally effective in improving the reading performance of all children but considerable satisfaction and publicity derives from demonstrating the effectiveness of the paired reading technique with disadvantaged children. The literature survey also disposes of the widely-held belief that only a few parents of children in disadvantaged areas will co-operate in any initiative designed to improve their children's reading (see Tizard et al, 1982 and Weinberger et al, 1986b).

In spite of these factors the paper by Weinberger et al (1986b), which describes the involvement of parents in the Belfield Reading Project, suggests that, to be certain of an adequate response and commitment to a research project, the choice of a school serving a middle-class catchment area would be preferable. Weinberger et al (1986b), whilst stressing that there was no statistical significance in the degree of commitment of parents in social classes 1 to 5, show that there is nevertheless a clear trend in terms of what they term "home reading frequency" from 70% for social class 5 to 88% for social class 2. They also isolate the difficulties at home found among the poorest responders such as lack of motivation for reading in the home, no quiet place to read and no time because of pressures from other children and financial worries. It was decided that, though the risk might be small, it would be unwise to jeopardize the present research

study by using a school within a disadvantaged area; it would be well-nigh impossible to repeat the research in the event of a "failure" to obtain an adequate response because of the expensive outlay of resources. The need for four groups of equal size to ensure the effectiveness of the comparative aspect of the research design to be discussed below also argued forcibly for the choice of the most "reliable" sample.

The second point which influenced the choice of schools in which to undertake research was the size of sample required. It was apparent that the difference between the methodology required for the parent tutored groups and that for the child tutored groups, apart from the size of sample required, necessitated the need for two schools to avoid confusion. It was also decided that the minimum size of each group should be fifteen. Gay (1981), in a discussion of size of groups, is very much aware of the constraints of time, access to subjects and of finding adults willing to participate to which research in schools is subject. Bearing this in mind, he concludes that experimental studies with as few as fifteen subjects per group may be valid even though some authorities believe that 30 is the absolute minimum. He makes two further observations: firstly that to argue for a minimum of 30 is somewhat idealistic when, as in paired reading studies, a number have been reported with less than 15 subjects and have obtained similar results; secondly it is likely that confidence in such findings would generally be as high, if not higher, than for a single study based on very large samples. It is noteworthy that Topping (1985b)

refers to an absolute minimum size of ten being necessary to have any confidence in the results.

The size and number of groupings meant that approximately 50+ parents were needed for three parent-tutor groups to ensure that, after drop-out for various reasons during the course of the study there would be at least 15 sets of data in each group. The need for a control group and the uncertainties of the weather on a winter evening in January when the parents would be invited to school argued for a junior school with a three or four form entry. It should be explained that, during the subsequent contact with schools, it quickly became apparent that the headteachers preferred to have the research undertaken during the spring term when the children would in their opinion be more settled. They were also of the opinion that it was more likely that parents would be more amenable to hearing their children read on a winter's evening when in any case the children would be less likely to be wanting to play outdoors. As will be seen there were only two suitable schools of this size within the educational division concerned. This is not meant to imply that other schools were not sympathetic to research projects but that, on the advice of professional contacts, for practical reasons such as the recent appointment of a headteacher or rebuilding disruption a research project was inappropriate at that time. One of the two larger junior schools was however situated in a seriously disadvantaged catchment area which precluded it from consideration. All the remaining schools were two-form entry.

For the child-tutored groups at least 50 children were required from the second year to provide two groups of children for paired reading tuition and one group of tutors. (Reasons for the choice of second year children are given below.) This provided three groups of 16 children, thus allowing for drop-outs with two children to act as reserve tutors. The other tutor group would come from the fourth year. These numbers posed a problem because there were not sufficient children in a two-form entry school to provide for an additional control group. There was therefore no alternative, if each of the five experimental groups were to run concurrently to facilitate comparison, to consider the control group in the larger school functioning as such for the two schools. In prospect this appeared to introduce confounding variables, but, in practice, it will become apparent later that, so far as it was possible to ascertain, the two schools draw from the same catchment area and share a similar educational ethos.

A second year sample was chosen initially on the basis of a misunderstanding that the County Education Authority required that all children should be tested for reading attainment at the beginning and the end of the second year. This would have provided a valuable double-check on the reading scores obtained from the chosen research instrument. At a later date, when it was learned that it was first year pupils who were battery-tested, the decision to use second year pupils had been reinforced on other grounds. In the event one of the schools selected for research had its own internal second year reading test

programme which proved to be valuable comparative data. The "other grounds" for the selection of a second year sample was to reduce the probability that there would be non-readers in the sample. The precise age range of the sample was 8 years 5 months to 9 years 4 months.

7.1.iii. Initial approaches to schools

Permission to approach schools for the purpose of research into reading was sought from the Divisional Education Officer and this was readily forthcoming. The Divisional Educational Psychologist and the local Remedial Reading Centre were also informed as a matter of courtesy. A visit to the remedial reading centre proved useful and considerable interest was expressed in the project with a request to be kept informed of progress. It was interesting that they expressed reservations about a sufficient number of suitable reading books being available within the schools to make the project viable; the significance of this comment will be apparent later.

Through contacts, advice was sought as to which headteachers would be sympathetic to research projects. It was recommended by professional colleagues that the request would be more effective if the research were presented as an "accelerated reading programme" with paired reading being subsequently mentioned. It was also stressed that some headteachers might be reluctant to agree to a research project after an extended period of industrial action. Of 32 primary schools within a six to seven mile radius of the research base five were identified as meeting the research requirements. Such a choice must also be very much an

arbitrary decision and, as mentioned above, no conclusions should be drawn about any one of the remaining schools being unsympathetic to a research venture. Topping (1985b) suggests that one of the criteria for evaluating a school as a venue for a paired reading project is that the organization of reading within the school should be well organized. Surely if the use of paired reading within a school exposes fundamental flaws in teaching strategies this would be a good thing.

In late September and October 1986 meetings were arranged with the headteachers of two junior schools, one a three form entry and one a two form entry sited within half a mile of each other. Both headteachers were very enthusiastic and were aware of the paired reading technique. One of the headteachers came from Wakefield adjacent to the area where much of the original work on paired reading had been conducted. The enthusiasm of the reception, the proximity of the schools to each other, the similarity of catchment areas and of the educational ethos were the basis on which a decision was made to use both schools for the present research project. It was also important in terms of keeping the work involved in the research programme within reasonable limits that the schools were both within three miles of the research base; with a considerable parent visiting programme involved in the research this proved to be a very practical consideration. The remaining schools were not visited if only because the enthusiasm of the headteachers of the two schools visited initially made it difficult but also because one school was the only three

form entry school recommended and, fortuitously, the adjacent two form entry school shared a common catchment area.

7.1.iv. Formal arrangements with schools

Following the initial contacts with the headteachers formal letters were written setting out the proposed objectives of the research and timetables both for teacher, parent and child meetings and for the administration of the test battery. One of the emphases throughout this study stresses the contribution of staff and parents and also aims to provide continuing feedback to the schools to demonstrate the value of paired reading as a complement to the more sophisticated techniques of reading tuition used by teachers. The research schedule also included the research objectives in terms which were designed to inform any sceptical teachers that the project was designed to be of benefit to them and to the children. The objectives of the research were set out in the formal letters which were sent to schools (Appendix 6).

The formal letters stressed that every effort would be made to minimize disruption to school timetables or inconvenience to staff and also stated that no reference to individual schools would be made in the dissertation. Three further steps were taken at this time. The names and dates of birth of all the children likely to be taking part in the research were obtained from school secretaries; where parents were involved addresses and telephone numbers were also obtained. Secondly, after discussion with the headteachers of the two schools, letters were written to the

local librarian after an initial visit formally requesting a supply of books for the duration of the project during the spring term. For the larger school where parents were doing the tutoring, 400 books were ordered to be delivered at intervals of two weeks during the eight week duration of the project. Similarly 200 books were ordered for the smaller school where fewer children would be participating. Thirdly, early in December 1986 all the second year parents of both schools were informed about the project. Where parents would be involved, a brief description of the nature of the research was given followed by a preliminary notice of two meetings to be held in the school to which they and their children would be invited on Wednesdays 21st and 28th January 1987 at 7.15. p.m.; refreshments would precede the meeting. Where children only would be involved parents were informed as a matter of courtesy that small scale research into children's reading would be undertaken during the spring term 1987 which involved some testing and that parents would be kept informed of the results.

7.1.v. Construction of groups

Henceforth, for convenience, the two schools providing research venues will be fictitiously designated Upstead P and Browning C. The P after Upstead indicates the parent tutored groups and the C after Browning the child tutored groups. As previously discussed efforts would be made to achieve a minimum of fifteen children in each treatment group by making the initial groups as large as possible. For Browning C it was also necessary to provide

two reserve tutors from both the second and fourth years. At Upstead P it was planned to achieve random allocation of subjects to the treatment groups by distributing descriptive brochures of the paired reading technique marked 1,2, or 3 respectively to the parents at the first meeting. The construction of the control group would be effected using tables of random numbers from the children who remained after the treatment groups had been allocated.

The random allocation of subjects to the two treatment groups at Browning C would be undertaken as follows. The first step would be to test all the second and fourth year children using the appropriate level of the Edinburgh Reading Test (see section 7.2.i). Secondly, after ranking the second year children in terms of their reading quotient, the less able readers would be paired with the more able readers who would act as peer tutors. In order to keep two pupils in reserve as spare tutors the group would be determined by deducting two from the number of children in the year and dividing by three. The middle ability group would be paired with the middle ability group from the fourth year who would act as cross-age tutors. The decision to use the fourth year mid-ability group as tutors was somewhat arbitrary. It was deemed that either the mid-ability group or the least able group would possibly derive greater benefit from acting as tutors than the more able group. On the other hand there was a need to keep the difference between the reading ability of pupils and tutors as wide as possible hence the choice of the mid-ability group as tutors.

Topping recommends that a two year reading attainment differential is desirable between tutor and pupil. So far as can be ascertained there is no empirical evidence to support this statement though clearly the differential needs to be "substantial". Conrad (1975) does however comment that there is a suggestion by researchers into cross-age tutoring that tutors should be at least three years older than pupils. Within the primary school neither of these prescriptions may be possible where peer and cross-age tutoring is concerned. In this present research, whilst for most pairings the differential was over two years, for about a quarter of the pairings it was between eighteen months and two years.

Topping (1988b) draws attention to an additional snag associated with child pairings, that of their compatibility. He recommends that the teachers' advice should be sought after the initial pairing on the basis of reading quotients to ascertain whether each pair is compatible particularly where a boy/girl pairing is concerned. He also suggests that the children's own preference should be taken into account or that this could be established by means of a secret ballot where each pupil would make three choices. In the absence of any empirical evidence that pupil choice has proved effective or is superior to a method using reading quotients and the teacher's advice the latter method will be followed. Topping's proviso is of itself sufficient to cast doubt on the method of pupil choice when he warns, if it is used exclusively it only generates chaos, and clearly the

requisite differential of reading quotient between tutor and pupil would be jeopardized; in that case it is probably better not to allow choice of tutor for any child to avoid the charge of favouritism.

In concluding this section on treatment group construction there is a technicality to resolve. Whilst Gay (1981) maintains that a combination of random assignment and pre- and post-testing serves to control most confounding variables he also stresses that the more a situation is controlled the less realistic it becomes and that the more natural an experimental setting is the more difficult it becomes to control external variables. Gay recommends that it is wiser to err on the side of control and so far as is possible his advice will be heeded in the present study.

Where the present project was concerned the pre-testing took place before the groups were allocated. The control group could not be identified by the school staff apart from the knowledge that it would be randomly chosen from over fifty children not participating in the paired reading intervention.

It is important to remember the decision made in Chapter 5.3.vi in relation to the Hawthorne Effect: to attempt as far as possible to ensure that equal enthusiasm is sustained across experimental and control groups during the course of the paired reading intervention. This would appear to be the best method of control for the Hawthorne Effect in the present state of knowledge.

7.1.vi Treatment schedule

Both the duration and frequency of the treatment and the length of the session were determined on the basis of Topping's (1985b and 1986a) advice and on an analysis of previous studies including the pilot study (see Chapter 6.4.iii) and practical constraints. In the absence of empirical studies designed to determine the most effective duration of study and frequency of treatment, decisions were based on a consensus of opinion. This shows that an eight week treatment period is tolerable for parents, teachers researchers and children, and, for practical purposes, allows for pre- and post-testing, parents' meetings and a period for children to settle in at the beginning of the term. For both schools the treatment period was in fact extended to a ninth week to ensure that, as far as possible, taking into account illness and other contingencies, an equal number of sessions were completed for each child. Clearly peer and cross-age tutoring could not continue during half term so for Browning C the project extended over ten weeks.

The preponderance of evidence also suggests that fifteen minute sessions sustained six days per week for parent/child pairings and five days a week for child pairings over the eight week period were acceptable.

Details and rationale of the classical paired reading techniques are contained in Chapter 6.4.iii and a concise summary of the technique together with the

simultaneous and independent modes is provided in Appendix 30.

7.1.vii. Test programme

To investigate the hypotheses it was necessary to obtain the following information.

a. Reading attainment profiles including reading accuracy and comprehension of (i) all 2nd year junior children in both Upstead P and Browning C and (ii) 4th year children in Browning C before the experimental period of eight weeks, immediately afterwards and subsequently after a lapse of nine months.

b. The attitude to reading and to school and an estimate of their own ability of all the children referred to in (i) both before the experimental period and nine months after the completion of the intervention.

c. A measure of the impulsivity and reflectivity of all the children referred to in (i) within the first week of the experimental period.

Reflecting the amalgam of quantitative and qualitative research techniques the following information was also necessary.

d. Comments by parent tutors and peer and cross-age tutors in diaries on the day-to-day progress and problems of their children.

e. Observations made by the researcher about the reactions of both parents and children to the use of paired reading during the course of four evening visits and during telephone conversations.

f. Responses both to structured and open-ended questions by parents, children and their teachers completed after the experimental period.

7.2. TESTS USED IN THE PRESENT STUDY: READING TEST

This section will describe the tests chosen for use in the present study, namely the Edinburgh Reading Test stages 2 and 3, the Dundee Attitude to Reading Test ATR2 Global and the Matching Familiar Figure Test. Where reading tests are concerned it is of crucial importance to ensure that the chosen instrument is among the best available. There is a large number of different reading tests in current use and there is also a continuing popularity among professionals working with children of dated and inadequate tests. For these reasons Appendix 25 to 29 include a survey of the more popular reading tests in current use to provide a rationale for the selection of the Edinburgh with some reference to technical problems involved with reading tests generally.

7.2.i. The Edinburgh Reading Test Stages 2 and 3 (ERT)

From a large array of reading tests the Edinburgh Reading Test (Godfrey Thomson Unit, University of Edinburgh 1980 and Moray House College of Education, 1985) was chosen as the research instrument for the present study. As will become evident, there is no such instrument as a "perfect" test of reading ability. The search for a suitable test began with some requirements in mind: that the test should be an individual test of both accuracy and comprehension

with more than one form and have been widely used in paired reading research to enable valid comparisons to be made.

Tamor (1979) highlights the difficulties of measuring comprehension due to the confounding effects of memory, reasoning skills, abstraction skills and narrowly defined reading subskills found in most comprehension tests. Whilst this tends to preclude a systematic focus on comprehension, with increasing evidence from paired reading research that comprehension advances, in many cases, to a greater degree than reading accuracy, a "good" test of comprehension is essential. Other requirements of a suitable test are that it should have been developed and standardized in recent years with acceptable validity and reliability and be suitable for delayed readers up to two years below chronological age. For the present study the length of time taken to administer the test and its cost are important practical considerations. It is hoped that the reasons for the choice of a test which failed in some respects to comply with these parameters will become evident as the ERT is reviewed.

Whilst as yet the ERT does not appear to be widely used by teachers, its description by Topping (1985b) as massively thorough and meriting investigation and by Vincent et al (1983) as of a high technical standard made it a serious candidate for consideration as a research instrument and therefore for a review in detail.

The Edinburgh Reading Tests comprise four stages suitable for chronological ages 7:00 to 9:00; 8:06 to 10:06; 10:00 to 12:06 and 12:00 to 16:00. Only stages two and three, which are relevant to the present research, will be discussed here, though some of the comments will be generally applicable to the series. Separate consideration is indicated because, as Vincent et al (1983) observe, each of the stages is free standing and needs a separate review. Stage two was originally published in 1972 but was revised in 1980 going through six impressions; stage three was published in 1973, was revised in 1985 and has gone through three impressions. The Godfrey Thomson Unit at The University of Edinburgh was responsible for the development of stage two and Moray House College of Education, also sited in Edinburgh, for the development of stage three. It will be noted that the original publication of the four stages was spread over six years; stage one in 1977, stages two and three during 1972 and 1973 and stage four in 1977. van Roekel's (1985) comment that the test may have grown "a bit like Topsy" seems justified particularly in the light of inconsistencies of content which will be discussed below. However the credentials of the test are "impeccable". They were commissioned by The Scottish Educational Department and The Educational Institute of Scotland. The test constructors were institutionally affiliated and the involvement of a steering committee of teachers and reading experts offered promise of providing a sound basis for assessing achievement in reading acquisition.

For both levels two and three, norms were based on the performance of children in Scotland and in England and Wales. In England and Wales, for both levels, two representative educational authorities, one county authority and one county borough authority, were selected from each of the ten areas. Five schools of various types were chosen from each authority and a single class from each school to give an equal balance between sexes and as even distribution as possible across the age ranges 8:06 to 10:06 and 10:00 to 12:06. The aim was to obtain 3,000 children in both age groups but absenteeism and other reasons meant that the samples were reduced to 2,745 for stage two and to 2,793 for stage three. The sample did not include children in special schools or in private schools. Hewison (1985) argues that the omission of special schools meant that weak readers were under-represented in the sample which leads to an artificially high estimate of average performance but presumably the omission of private schools might have the opposite effect. Otherwise van Roekel's (1985) comment that the samples were chosen with considerable care would appear to be a fair conclusion.

It is regrettable that similarly detailed information is not supplied in any of the manuals about the preparation of items in the tests. As van Roekel (1985) notes, no reason is given for measuring certain reading skills to the exclusion of others which reference to a taxonomy of reading skills or to a theoretical model of reading could have supplied. He argues that the prestigious steering committee should have provided such a rationale;

indeed the function of the steering committee is not revealed. Roser (1985) is also of the opinion that it is difficult to gauge what is being measured from item inspection and adds that the scheme of reading assessment is not readily discernible.

The subtests were designed with as little overlap as possible according to the manuals though children tend to make similar standard scores on all the sub-tests. The authors comment that it would seem therefore that these are basic reading skills which form the foundation of all types of reading. The latter commment would be more apposite within the context of the rationale of a reading model. The level two sub-tests are vocabulary, comprehension of sequences, retention of significant details, use of context and reading rate. The level three sub-tests are reading for facts, comprehension of sequences, retention of main ideas, comprehension of points of view and vocabulary.

Vincent et al (1983) ask whether the two stages are coherent as to developmental approach. Their conclusions are decidedly adverse. Vocabulary and comprehension is retained in stage three but rate of reading is omitted. Retention of significant details seems to have been replaced by retention of main ideas. Use of context is also discarded. Comprehension of essential ideas is now a retention task. New to stage three is reading for facts and comprehension of points of view. Vincent et al (1983) comment "It can reasonably be argued that the latter process represents an increase in sophistication of reading skill but there is no discernible logic in any of the other

changes in sub-test structure." Cros-manual comparison is said by them to reveal different interpretations of processes common to both tests, but in the absence of any examples this must remain unsubstantiated since there is nothing glaringly discrepant. However there is no explanation of relationship between the two stages. Perhaps the fault lies in the different authorship. For the purpose of the present study Vincent et al (1983) reassuringly note that both tests sample a wide range of comprehension skills. They also point out, perhaps inevitably, that some of the sub-tests tend to be somewhat more fragmented and artificial than would be encountered in real life reading, but again examples would have been helpful.

The reliability and validity of stages two and three are given separately. The internal consistency reliability (KR20) of stage two is 0.969 and of the sub-tests (omitting sub-test E - reading rate) ranging from 0.814 to 0.913. The sub-test inter-correlations range from 0.433 to 0.795. The lower figure is that of sub-test E. The manual comments that this is due to its being rather less reliable than the other sub-tests and to its measuring a rather more distinct aspect of reading competence which is a tautological statement. It would also appear to be a somewhat strange observation since the reason given for not calculating the KR20 reliability of sub-test E was that it was a highly speeded test, but presumably the authors know that it is "rather less reliable" they did calculate it and, in that case, it should have been supplied to enable the reader to make an independent judgement. The range of inter-

correlations without sub-test E is certainly improved i.e. 0.656 to 0.795 giving a mean of 0.726 which the manual describes as "generally quite high". The internal consistency reliability of stage three is 0.97 and of the sub-tests in the range 0.85 to 0.95. The inter-correlations of sub-tests range from 0.712 to 0.838 giving a mean of 0.772 which is also said to be "generally high". Both manuals state that estimates of concurrent and predictive validity "... must await the experimental studies that the constructors hope will be carried out with this test." but apparently fourteen years later these have still not been completed. The manuals also state that content validity rests on the judgement of the steering committee of teachers and reading experts. Hewison (1985) comments that this statement is based on no sounder evidence than plausibility and urges more searching investigations.

It is not surprising that Hewison (1985) describes the administration of the Edinburgh Tests as "a complex and lengthy business". For example the timing for stage three is as follows: 35 minutes for the practice test with at least a fifteen minute interval between that and the first stage proper which lasts for 40 minutes followed by at least an hour's break before the second part of the test which lasts for 35 minutes. The tests are thus essentially group tests unless used individually for a special purpose.

As will be mentioned below the time required to administer the tests together with an apparently intricate analytical process at first sight appears to be rather daunting. It is however interesting to note that Hewison

(1985) follows up her comment by saying that the administrative instructions for stages two and three are admirably clear which does not altogether accord with the first statement.

The raw scores should be converted to reading quotients using the tables provided. These are based on the scores of the standardization sample. In both stages girls in England and Wales performed better than boys; in stage three these differences were significant at the 5% level. The compilers did not consider it appropriate to give separate norms for boys and girls. The reasons they give are no doubt open to argument: "... it was thought to be more desirable for children of either sex to be treated equally if their performance was equal, than that they should be treated equally according to their position within their own sex." Thus, given a boy and girl with the same score, he would have a "higher standing" among boys than she would among girls. Some reading ages are also provided. They are calculated by finding the middle score for each age group. The manuals comment that the respective standardizations were limited to children in the given age groups i.e. 8.06 to 10.06 and 10.00 to 12.06 and thus "well-founded" reading ages can only be supplied within these limits. The manuals make two cautionary comments that the reading quotients should not be regarded as being predictive of the child's reading potential and that the score may be influenced by the physical or mental state of the child on the day. The stage two manual states that ".. it is reasonable to think of a child's true quotient as lying within plus or minus

three points of the one he actually obtains." though it would be useful to have the calculations on which this standard error of measurement is based. It would also be interesting to know how, in the light of the inevitable "error window", the test developers can claim that a difference of one point in reading quotient should roughly represent a constant difference in ability at whatever level of score which would justify extrapolation. van Roekel (1985) observes that this is not supported by evidence. The reading quotients are based on a normal distribution with a standard deviation of fifteen.

Sub-test standard scores are intended to measure differences between the levels of ability shown by the individual child, not for comparison with others unlike the reading quotients which incorporated age allowances. The standardized sub-test score is therefore irrespective of children's age or country of origin. Two useful functions of the sub-tests are to develop a profile for each child which may identify areas of concern and to ascertain whether a class shows particular weaknesses enabling the teacher to develop a "remedy". Friend (1980) terms this whole process as "unwieldy" but a closer examination shows that this is probably a somewhat harsh statement and tends to "put down" a genuine and practical attempt to provide useful information for the class teacher; it is however very time consuming. Hewison's (1985) comment, by contrast, is fairly made where she argues that the amount of space given to the interpretation of sub-test scores is excessive in view of the author's statement that the diagnostic function of the

test is restrained by the high inter-correlations between sub-tests.

There is general agreement that the manual of instructions is clear and straightforward (see Hewison,1985; Vincent et al, 1983 and Roser, 1985). Roser (1985) comments that they are exemplary in urging a cautious interpretation of test results which is not generally the case with reading tests. Gipps and Wood (1981) also quite rightly observe that, compared with older tests, the ERT is attractively designed and printed with good illustrations.

In conclusion, there is no doubt about the popularity of the ERT. Stage one, for example, has gone through eight impressions in nine years. Pumfrey (1985a) notes that the test is valuable and has been used extensively in the UK. It may be however that it is more popular with LEA's than with teachers who may prefer an oral test, since Gipps et al (1983) reported that ten out of 69 LEA's used it which of itself is a fair recommendation. Roser (1985) also reports that LEA's use it as a general survey instrument. Whatever other criticisms are made Hewison (1985) advises that the sub-tests considered together provide much richer and more comprehensive information about children's reading performance than most commercially available group tests. The developers also emphasise that they have attempted to isolate as far as possible the aspect of reading competence which each sub-test is supposed to test so that they are as easy as possible in all dimensions except the one being measured. Gipps and Wood (1981) argue that the ERT broadens teachers'

views of reading and is a signal to them that advisers are not talking just about reading but about literary skills conceived broadly. In the light of the continuing use of less useful and accurate tests this may be no bad thing.

In summary the following observations would represent a fair assessment of the value of the ERT. van Roekel (1985) concludes that the stated objectives to provide measures which are easy to administer and interpret and which would afford urgently needed assistance in the teaching of reading have only partly been achieved. As a general measure of reading however he continues that it is acceptable and it probably correlates well with other measures of reading though its overall claims exceed its capability. It is regrettable that no figures are available giving the ERT correlations with other tests. In a number of instances the publication of further statistical data by the authors might also have avoided unwarranted assumptions. A personal communication to the writer from the compilers of the ERT states that the person who had undertaken to provide the additional data emigrated to Australia. Hewison (1985), in spite of the criticism mentioned above, says that the ERT is impressive in its breadth and can have few serious rivals. One of the requirements of this present study is for a reading test which moves away from the workbook sentence answer concept of comprehension to one requiring the subject to discern relevant facts, understand thought relationships in sequence, classify points of view, utilise context and make inferences. The ERT subserves this need.

The fact that the level two test incorporates a test of reading rate is useful because of suggestions made by various authors that the more able reader's speed of reading is adversely affected by being involved in paired reading.

The choice of a suitable reading test for this study was not easy. In spite of the convenience provided in terms of a comparative study by using the Neale, the dubiety of its use as a measure of comprehension and its dated text and standardization render it unsuitable for research purposes. There are two points to make. Firstly, to hold on to the Neale indefinitely but, at the same time, to lament its inadequacy hoping forlornly for a successor is patently unsound practice. Even though there are reports that the Neale will be restandardized in the UK following its restandardization in Australia this could still be some way off. Secondly it is not a primary aim of the present study to compare the results with other studies. The value of paired reading is established beyond question and the thrust of the present study is directed towards comparisons within the study itself.

As mentioned in the first paragraph of this section on reading tests it has been decided to use the Edinburgh Reading Tests. At first sight this is a contrary decision in the light of the specified qualities for a suitable reading test (see beginning of section). In fact the ERT only meets four out of the nine criteria: it is a measure both of reading accuracy and comprehension, it has been recently standardized and developed, its reliability

and validity are acceptable and it is suitable for children in the second year junior age group up to two years delayed in reading. By no means is it an ideal test, as the critique shows, particularly where the inadequate details of reliability and validity are concerned but, as was said of the Neale in its more youthful days, "it is the best of a bad bunch" though it would be more accurate to substitute "mediocre" for "bad". Perhaps what is being said is that educational tests will always have some serious limitations but what is important is to know what these are.

The ERT does not fulfil the following criteria: it is not an individual test, level two has only one form, it is expensive, takes a considerable time to administer and has not been used in paired reading research. The last point has already been dealt with. The need for an individual test is based on a popular assumption that they are more accurate than group tests but no convincing evidence is available to substantiate this. It is submitted that a thorough test of comprehension, reading speed and reading accuracy supposes a test of considerable length and renders it unsuitable for large-scale individual testing. It is also submitted that the analysis of tests in current use placed in Appendices 25 to 29 will favour the ERT because it appears to be the best available test; that it is also a group test is a secondary factor. In retrospect however its utility is apparent; it would be impracticable for one person to test individually 160 children with the ERT. That level two has only one form is immaterial. The test is so lengthy that it is most unlikely that a child would recall any detail in such a way

as to prepare for the posttest. The ERT is expensive and it does take over 100 minutes to administer with 15 minute and 60 minute intervals between parts respectively but that is the "price" to pay for a test which is capable of providing some useful data.

To ensure consistency of test procedure and administration the author conducted all the testing which helped to exclude any experimenter bias. The ERT was administered by the author as a group test, the purpose for which it was primarily developed. Though Stage 3 of the ERT is published in two forms, Stage 2 is only published in one form so it was decided to use one form for both stages. Because of the length and complexity of both tests it would be virtually impossible for a child to memorize any section of the test to his or her advantage after one administration.

7.2.ii. Reading age scores

It is submitted that insofar as any reading test is both reliable and valid the RQ scores provided by the ERT are likely to be more accurate than reading ages. Ubiquitous use is made of the reading age score in the UK. Vincent (1985) laments that so often reading age scores are invested with a meaning and authority out of all proportion to their statistical origins, whilst in fact they are the most ambiguous and misleading method of scaling reading scores. He mentions a number of ways in which reading scores are derived in a purely arbitrary manner. Irrespective of derivation the reading age can only at best record a mean within an age range dependent on the standard error of

measurement of the test in the manner of the New Macmillan Reading Analysis (NMRA) (see Vincent and de la Mare, 1985). Vincent (1985) also rightly objects to the implication that reading ages are developmental in the same sense that physical growth, spoken language acquisition or conceptual thinking may be and argues that they are as much a function of opportunities to learn to read as of chronological age (cf a seven year old who has a reading age of seven years with an eleven year old with a similar reading age). He also notes that a years' improvement for an eleven year old is not the same as a years' improvement for a seven year old in that "normal" progress is likely to be in fits and starts and thus norms for age are misleading. It is noteworthy that the NMRA (see Appendix 29) also claims to overcome these difficulties by providing scale scores based on Rasch analysis and it is the more regrettable that the test is otherwise unsuitable for use in the present research.

7.3. TESTS USED IN THE PRESENT STUDY: ATTITUDE TESTS

7.3.i. Preliminary comments

With the emphasis placed on a humanistic model of reading in the present study the administration of a test of children's attitude to reading will be seen to be appropriate. A children's attitude to reading test administered before and after the present paired reading study will provide additional information along with open-ended and structured questioning of both children and teachers. The Primary Survey Report No 1 "Language Performance in Schools" (Gorman et al, 1981) concluded that "Children's attitudes to reading emerge as of fundamental

importance." They make reference to the fact that, whilst it is often assumed that children's attitudes to reading have a positive relationship with achievement there has been little investigation. In looking at the attitudes to reading of eleven year old children they found a correlation significant at the 0.001 level between the responses to the attitude questionnaire which they had developed and the reading performance scores. Unfortunately this attitude test was solely for the eleven year age group which precludes it from consideration here.

Pumfrey and Dixon (1970) in a study of three attitude to reading scales to be referred to later, express the opinion that "More teachers judge their schools and their own effectiveness in terms of children's attitudes (to reading) than by their attainment particularly with the less able." Surely the truth of this comment is not in question; it is a very rewarding experience to see a delayed reader "take-off" and suddenly discover a delight in reading. The effect upon behaviour and personality can be most remarkable. Pumfrey and Dixon (1970) are however rightly concerned that attitude scales present a more efficient method of assessing the effectiveness of teaching than a subjective impression.

It is interesting to note how the experienced researcher presents his "impressions" in suitably guarded terms. Georgiades (1965) concludes that "... while there is no necessary a priori reason for a correlation between a child's level of motivation and his attitude towards reading..." it is predictable that there is in fact a fairly

high level of correspondence. He argues for the development of a quantifiable and objective instrument to measure attitude to reading. He believed that the insights given into the overall motivations of the children would prove to be a considerable breakthrough in thinking about the evaluation of reading techniques. At the time of writing in 1965 Georgiades regarded any attitude tests developed as being very blunt instruments.

7.3.ii. The Dundee Attitude to Reading Test ATR2 Global (DART)

The ensuing discussion will centre largely around the work of Ewing and Johnstone's unpublished and ongoing work on reading attitude scales at Dundee College of Education. Attitude to reading was not discussed in the literature review because Ewing and Johnstone's development of their own test included a very thorough review of available tests. Their comments have been utilised here in some detail since the material is not available in published form. As a preliminary they make brief reference to a definition of "attitude". They point out that the concept of attitude has been subject to a wide variety of definitions and quote Allport (1934) who defined it as "a state of readiness". They also make reference to the more complex models of Elms (1976), Warren and Jahoda (1973) and Fishbein (1967).

As it is intended that the reading attitude test adopted for the present study should be a subsidiary measure to the testing of reading a detailed survey of definitions in an attempt to refine one which might be generally

acceptable would be space and time consuming and somewhat tendentious. Ewing and Johnstone provide a wide definition "... to include the individual's feelings, beliefs and values as elicited in reaction to reading in general and to identifiable reading experiences." As they point out, in this way they emphasise the multi-dimensional and dynamic character of attitudes rather than the unitary and static which may be seen as particularly appropriate to the change in attitude to reading which, among other things, paired reading hopes to achieve. As Evans (1978) points out, attitudes are assumed to have three components: cognitive, which concerns beliefs; affective which concerns feelings and conative which concerns actions and Ewing and Johnstone's definition matches this prescription.

Ewing and Johnstone go on to make a limited literature review; limited because in most cases research into attitudes to reading has been small scale which left three major large-scale studies to examine. The Estes and Johnstone (1971) "Attitudes Towards Reading Scale" consists of 20 statements about reading, half of which embody "good" attitudes and half "bad" attitudes. The subject responds on a five point scale. Development of the test produced a prototype scale with a somewhat low ceiling with pupils generally giving more positive responses, although there was a wide standard deviation and the split-half reliability gave a coefficient of 0.94 for the sample. The Kennedy and Halinski (1975) attitude to reading scale also consisted of statements about reading but, whereas the Estes' scale was developed for the age group nine to eighteen the Kennedy and

Halinski scale was exclusively for secondary pupils. Responses are measured on a four point scale and Ewing and Johnstone point out that the omission of a neutral response might lead to spurious data when the pupil is forced to choose only between agreeing and disagreeing.

The Dulin and Chester (1974) Reading Attitude Scale in somewhat different in construction; it requires the subject to choose between two alternatives i.e. "Listen to the radio" or "Read a book" but allowance is made for a "tie". As Ewing and Johnstone point out, the chief drawback of this method is that the choice offered will be no choice at all for some pupils who have no access to the alternative activity. An additional weakness is that a response of "either" is possible but not a response of "neither" though perhaps it would be acceptable to count as a "tie".

In summing-up, Ewing and Johnstone reject both the Dulin-Chester scale and the Halinski scale for the reasons given, that children are forced into making a spurious choice of answer. Their preference is for the Estes' scale though they are rightly critical of the instruction to the teacher to "feel free to modify (the scale) to fit their needs" when the 20 items of the scale have been carefully selected from a pool of items by item analysis. After some other general comments Ewing and Johnstone regard the Estes' scale as reasonably successful though they question the "global" approach in that an "integral" attitude to reading is envisaged whereas reading in the classroom can be seen more convincingly as composed of "various interlocking aspects such as the value attached by the pupil to reading,

the use he sees of a specific skill or the demands of classroom interaction in itself." For the purpose of consideration for this study the Estes' scale was standardized for children from nine to eighteen and would not therefore be suitable.

Ewing and Johnstone embarked on a two and a half year project in the mid-eighties funded by the Scottish Education Department to construct an attitude to reading test suitable for age range eight to sixteen years. From a series of face-to-face interviews, sentence completion tests and the semantic differential technique of Osgood et al (1957) a pool of statements was made to construct Likert type scales. The semantic differential technique attemped to tap attitudes by presenting a concept e.g. "honesty" qualified by several pairs of bi-polar adjectives each pair being separated by a five-point scale along which the respondent marks where he/she feels the concept lies. In the event the children were completely puzzled and the attempt was abandoned.

Subsequently a thorough developmental programme was undertaken. The length and detail of the pilot studies precludes succint description so discussion will be confined to statistical data. Two types of attitude test were developed: one lengthy situational test which seeks to tap the "usefulness", the "importance" and the "liking for" reading as an instrument in some 20 "situations"; the other test, a "global" test, according more with the definition provided, to tap feelings, beliefs and values and, more appropriate to this study. Over 3,000 junior age children

were used to standardize the test in 1983 which included "... a sufficiently large sub-population on which to base intra-group comparisons." The schools used were in varying geographical locations, from rural to urban; of varying social class intake, from largely middle-class to largely working-class and representing various styles of teaching from traditional to innovatory. Sex distribution was about equal. An item analysis of the responses indicated a high degree of consistency. Despite a negative skew the authors conclude that there appeared to be a reasonable dispersal of scores about the mean. There were eighteen statements in the global measure to be rated on a five point scale giving a score range from 18 to 90 and a theoretically "neutral" score of 54. In fact the mean score was 65 with a standard deviation of 11. The authors also add that it is conceivable that responses could be manipulated and thus caution should be used in assessing scores of 85 or over. After removing a small percentage of respondents' scores which were possibly exaggeratedly high the results show a "...fairly equitable distribution between categories." Typically Shapp and Kline (1975) describe a tendency to "... overly positive attitudes as a feature of many attitude to reading tests."

The split-half reliability measure, using the Spearman-Brown formula, gave a satisfactorily high correlation of 0.7945. The test-retest correlation gave 0.7329 which is significant at the highest level. The authors comment that the results of the two different measures suggest that pupils in the main appeared to give consistent rather than random responses to attitude

measures. Criterion-related validity compared the mean score of library members with the mean score of non-members and calculated the z-ratio which worked out at 9.79. A z-ratio of 1.95 represents the lowest figure at which a difference between means is statistically significant at the 0.05 level and thus the authors conclude that the test has some degree of validity as a measure of attitude to reading i.e. library members had higher scores than non-members.

Factor analysis was undertaken and, whilst there was not one single unitary "attitude to reading" influencing every one of the eighteen items involved, three factors were identified, each affecting a discrete cluster of statements. Factor 1 was a basic or general factor involving nine statements characteristic of a poor attitude to reading. As reference to the test at Appendix 17 will show, the authors agree that these nine statements, (1,2,4,8,9,11,14,15,and 16), do not necessarily imply a negative dimension but may be characteristic of the non-involved reader "... with factor one being a very basic expression of general attitude towards reading beyond which many pupils will never progress." The remaining nine statements form two distinct groups. Factor 2, (3,6,10,12,13 and 18), involves personal choice, a decision to read and perhaps even an active enthusiasm. Factor 3, (5,7, and 17), the smaller of the two groups, consists of statements which involve understanding or learning; it may involve motivation to learn and a valuing of the utility of reading skills.

In summing up Ewing and Johnstone contend that both split-half and test-retest measurements gave convincing

evidence of the reliability of the measure and test-retest results gave some support for the truthfulness of the responses. The authors are very aware of the problem of validating attitude tests but submit that the comparison of the mean scores of library and non-library members supported validity. Though the factor analysis gave a confusing picture the oral evidence from pupils and teachers had indicated that attitude to reading was not a unitary trait.

The thoroughness of the test development invites attention to some of the findings. It was found that girls at the primary age had a more positive attitude towards reading than boys. Interestingly the attitude measure correlated moderately well with achievement on the ERT (0.43, significant at <0.01 level). The relationship between a positive attitude to reading and reading attainment has yielded contrary findings. Roettger et al (1979) comment that, contrary to some studies, their own findings indicate that a positive attitude to reading cannot be used as a predictor of academic achievement. This is not surprising when they conclude somewhat intemperately that "A review of attitude instruments found that none of them were valid, reliable, easy to administer and score and appropriate for age or grade level." It is also surprising to find that they assess the value of attitude to reading tests in terms of their ability to predict academic progress. Surely this is misguided and all that developers of attitude tests would claim to achieve is to identify some children who are failing in reading and who also express poor attitudes to reading so that corrective measures can be taken.

Because of the implications for this present study the broad hypotheses on which Ewing and Johnstone's research is based are of interest.

"a. Attitude towards reading in a classroom context can be broken into component parts of affect and of value or utility.

b. Attitude towards reading can be correlated significantly with pupil achievement in reading (or what pupils sincerely believed to be their "ability status") but not as a general predictor of academic progress c. Attitude towards reading can be correlated significantly with pupil attitude towards school."

The authors point out that, although none of the hypotheses were tested in an experimental situation, the collection of data allowed an evaluation of the three possibilities to be made. As to the first hypothesis it would appear that attitude towards reading could be broken down into these two aspects of affect and perception of value and utility. The significant correlation of reading achievement with the attitude to reading scale tended to support the second hypothesis. For the third hypothesis the pupils' feelings about school in general did not correlate significantly.

7.3.iii. Conclusion

It is submitted the the Ewing and Johnstone Dundee Attitude to Reading Test ATR2 global has been developed after considerable attention to alternative devices for measuring attitudes to reading. The care and precision the authors have striven to achieve suggested its use in this

study. At the time of writing (1989) the final form of the test has not been completed but the authors readily agreed to the use of the global version of the present pilot edition. They stressed that that any future modifications are likely to be very minor. The test was administered by the author as a group test concurrently with the administration of the ERT.

7.4. TESTS USED IN THE PRESENT STUDY: THE MATCHING FAMILIAR FIGURE TEST (MFFT)

The Matching Familiar Figure Test which is used in this study and briefly described in Chapter 4.6 was developed by Kagan et al (1966) but they do not provide any details of its development or standardization. The provision of adequate norms has been left to others. Salkind (1978) collected data from over 2,800 administrations of the test. Typically the samples were all from mainland USA based on the standard test with normal samples from boys and girls of five to twelve years of age and predominantly middle-class. Means and standard deviations are provided across the age range together with median scores for error and latency and overall percentile rankings. Ostensibly Salkind (1978) has performed a valuable service by developing these norms and they will be used in this study. For comparative purposes what he terms an "impulsivity coefficient" will be

calculated as he recommends. The formula is as follows:

$$I_i = Z_{ei} - Z_{li}$$

$$E_i = Z_{ei} + Z_{li}$$

where I_i = impulsivity for the I'th individual,

E_i = efficiency for the I'th individual,

Z_{ei} = a standard score for the I'th individual's total errors and

Z_{li} = a standard score for the I'th individual's mean latency.

However, valuable though Salkind's contribution is, particularly his method of calculating the "impulsivity coefficient", in some respects he has only added to the confusion. Researchers appear to be retaining Kagan's original methodology (cf Brown, 1980; Finch et al, 1982; Egeland et al, 1980; Roberts, 1979 and Sousley and Garguilo, 1981) in spite of the growing concern which has been expressed about the need for rationalization in scoring and in the range of tests used. Walker (1986) surveyed the literature between 1979 and 1984 after the introduction of Salkind's impulsivity coefficient and development of norms for the MFFT in 1978. He found that during that period 51/57 studies of cognitive tempo used the MFFT. Of these 51 only 8% used Salkind's recommendations. Wood (1979) and Tunmer and Fletcher (1981) are exceptions; indeed Wood concludes that "Salkind's impulsivity coefficient added substantially to prediction of achievement." It will be recalled that Kagan's method of calculation was to term all those subjects who scored less than the sample mean score for latency and

greater than the sample mean for errors as impulsive and those subjects who scored more than the sample mean score for latency and less than the sample mean score for errors as reflective. Kagan ignored the other two quadrants namely the few subjects (a) who scored less and (b) who scored more than the sample mean for both latency and errors.

Messer (1976) found an internal consistency reliability of 0.89 for response time but a lower reliability for errors of 0.62 and 0.58 ($p < 0.01$). Ault et al (1976) analysed eleven studies and calculated an average internal consistency reliability for MFFT error scores of 0.52. It may be however that the figures given by Messer (1976) of between 0.62 and 0.58 are more accurate since the average figure given by Ault et al (1976) is based on a number of studies using non-standard tests. Converging validity using ten tests similar to the MFFT gave a median correlation of 0.73 for response time and 0.68 for errors. Test/retest reliability over one year is given as 0.62 and a range from 0.58 to 0.98 after periods from one to eight weeks (see Messer, 1976). Most researchers agree that there is a negative correlation between response time and errors. Hall and Russell (1974) reviewed 14 studies. They found 37 negative correlations, 28 significant at the 0.01 level, four at the 0.05 level and five failed to reach statistical significance. Block et al (1974) also conclude that "The negative correlation found between response time and response accuracy (averaging about -0.4) is far from being high enough to justify, conceptually or empirically, co-ordinate status for response errors in determining, together

with response latency, whether someone should be identified as impulsive or reflective."

Ault et al (1976) found that the average correlation between error and latency is somewhat higher than -0.4. They review the data from 19 studies and calculate an average of -0.56. For statistical reasons Messer (1976) argues that the true correlation between latency and error scores should be at least -0.80. They conclude that, whilst the MFFT should be refined to increase its reliability, "... the construct remains moderately robust." Ault et al (1976) go into more detail and argue that "... correlations between error scores (x) and external variables (y) will be consistently underestimated unless adjusted by means of the correction for attenuation formula." (see Chapter 8.1.iii). They calculate a true average latency/error correlation of -0.82. They also argue that the same effect would occur in calculating the relationship between error scores and non-MFFT variables and recommend that, until ways can be found to make the MFFT more reliable, problems resulting from low error reliability can be partially resolved by correcting correlations for attenuation. That this is a device which is regarded as orthodox in the calculation of correlations is evident from textbooks on statistics (cf Guilford, 1965 and Gay, 1981). Gay (1981) defines attenuation as "... the principle that correlation coefficients tend to be lowered because less than perfectly reliable measures are used." Both Block et al (1974) and Egeland et al (1980) adduce evidence which, in their opinion, indicates that the accuracy/inaccuracy

component of the MFFT is more powerful in discriminating conceptual tempo than latency scores. As a statistical exercise the figures are no doubt valid but both authors fail to make a convincing argument for abandoning Kagan's operational definition of conceptual tempo.

Over the last ten tears other criticisms of the MFFT have occurred deriving from Kagan's operational definition of conceptual tempo which equates impulsivity with short response latency and few errors. Not unreasonably Block et al (1974) argued for the inclusion of fast-accurates and slow-inaccurates. Kagan and Messer (1975) were unperturbed by the criticism arguing that the other two quadrants created by the dichotomization of the variables were not part of the original construct. In the absence of any account of the standardization of their test their response loses some of its force. Nevertheless it remains true that, however valid the argument that the neglect of the two quadrants represents a loss of statistical power - and no-one has apparently demonstrated their significance for the further elucidation of the concept - the MFFT, as mentioned above, has been used in an impressive body of empirical research. It should be noted that the use of Salkind's impulsivity coefficient would help to resolve the problem of the neglect of the two quadrants. In summary, the consensus of opinion, and that of two lengthy critiques in particular, Egeland and Weinberg (1976) and Ault et al (1976) conclude that the MFFT continues to be of value though care should be taken in the interpretation of the results.

Ault et al (1976) make it clear that the standard test used by Kagan in his early studies is that consisting of twelve items and six variants per item. They comment that there is a lack of standardization of test items and of test length in MFFT research presenting a serious methodological problem in its own right, and rendering generalizations from one study to another problematic. Egeland and Weinberg (1976) in their paper, which looks at the psychometric credibility of the MFFT, note that variant forms were used in determining its internal consistency reliability and also test/retest reliability. They observe that researchers have rarely indicated the particular form of the children's version of the instrument used, evidently assuming comparability. An analysis of 38 studies between 1970 and 1982 shows that 17 used the standard form, five used a non-standard form and the remaining 16 failed to specify what form of the MFFT they were using. The following quote from Eska and Black (1971) is not untypical when they describe the test used in their study as "analagous to Kagan's MFFT" and "similar to". Any credence which can be attached to Block et al (1974) critique of Kagan's work and to some subsequent studies which utilised their conclusions, is sullied by the fact that they used a non-standard version of the MFFT. It is puzzling to find that, in their response to this critique, Kagan and Messer (1975) do not pick up on this fact. The research seems fraught with inconsistencies, since Messer (1974), who was Kagan's collaborator, in a personal communication to Ault et al (1976), records that he used non-standard items as part of MFFT research together

with another variant form. A comment by Salkind (1978) is also very relevant: "In general these different forms of the MFFT, as well as different copies of the same form have little quality control during the reproductive process. Since there was no "formal" publication of the MFFT, users should be aware that imperfections in the reproductive process may alter the degree of similarity between the variants, contributing some possible confusion on the part of the user."

Arizmendi et al (1981) used an evaluative model of educational tests suggested by Gough (1963) to examine the usefulness of the MFFT. Without going into too much detail because it is the conclusions which are important, the critique is made in terms of primary, secondary and tertiary levels. The primary level is concerned mainly with predictive and construct validity; the secondary level concerns the psychological meaning of that which is being measured entailing a review of test development, an analysis of test items with respect to format and content, a determination of the relationship between the test and other previously conceptualized measures and the "...characterological and personological dispositions of those who are classified as reflective or impulsive." Tertiary evaluation focuses primarily on the validity of the measure. Arizmendi et al (1981) conclude with some assurance

(a) that administration and scoring is simple and inexpensive,

(b) based on empirical evidence the MFFT seems to be a reliable screening device at least for differentiating extreme levels of reflectivity and impulsivity,

(c) it does not rely on subjective ratings of a child's behaviour and the examiner can observe on a cognitive and behavioural level,

(d) the MFFT is difficult to "fake" - requires performance rather than opinion,

(e) although research on predictive validity is scarce, the MFFT scores appear to be reliable "prognostications" of behavioural and conceptual tempo outside the test environment.

They finally observe that the MFFT appears to have a definite potential for use in an applied environment and that, with ongoing research "... the basic shortcomings of the test (specifically lack of norms and an alternate form) can be alleviated." The MFFT represents a valuable asset for the future in their opinion. They were evidently unaware of Salkind's (1978) intensive work on norms but their conclusions are significant in the light of the thorough critique.

It is submitted that this review together with the preceding review of the literature provides substantial reasons for using the MFFT as an adjunct to the reading measure in this comparative study of paired reading with the additional hope that some hitherto unsuspected links might emerge. The particular strength of the test would appear to be in differentiating the more extreme levels of

reflectivity and impulsivity. It is this emphasis which will be highlighted in the summary data.

The MFFT is an individual test which takes between ten and fifteen minutes to administer. It was necessary to devote fifteen hours to administering the test and thus there was some intrusion of testing into the research period. There is no reason to suspect that a brief acquaintance with paired reading would influence a child's cognitive style and, in any case, the aim of the research was to investigate any relationship between cognitive style and improvement in reading attainment after the paired reading intervention. The two methods of scoring described above were used for the MFFT to ensure that the two categories of conceptual tempo (impulsivity and reflectivity) were identified as precisely as possible.

7.5. RESOURCE LOGISTICS AND CONSTRUCTION OF QUESTIONNAIRES

It has been emphasised throughout this study that the contribution of parents and teachers by way of questionnaires and informal contacts is crucial. To ensure that they were fully informed about paired reading and the aims of the project, "publicity material" was distributed. It was decided to provide this material at two levels; brief papers were prepared for both teachers and parents outlining the paired reading technique. The teacher paper gave some details of its development since 1974 and discussed some research findings. Teachers who were interested were also offered copies of Keith Topping's articles in Child

Education (see Topping, 1984 and 1985d and the seminal paper by Morgan and Lyon, 1979). The parent paper was distributed at the first parent meeting; it was about half the length of the teacher paper and was more in the nature of an enthusiastic sales' pitch although it was also informative. On another occasion serious consideration should be given as to whether the different styles of presentation were necessary as some parents were sufficiently well-informed and interested to request additional information. The two papers are included as Appendices 3 and 4.

Three additional papers were prepared for parents and for children. The parent paper was in the form of a brochure (see Appendix 8.) entitled "Paired Reading: Parents' Handbook". As mentioned elsewhere permission to use this brochure was obtained from Nottinghamshire County Council Education Department, but in fact many alterations were made to the text to simplify the language and to eliminate sexist phrasing. Efforts were made to ensure that the handbooks were of as high quality as possible within the constraints of economics and photocopying; illustrations were included. The two papers prepared for the children at Browning C were for the tutors and pupils respectively and gave simple instructions; a logo was printed on the front page. A diary intended for parents and child tutors was also printed. It made provision for a daily record including time and duration of session, name of tutor, book chosen and space for comments (see Appendix 9).

In spite of the fact that the use of a contract slip whereby parents express their wish to participate in a

paired reading project is a common procedure, the author was rather sceptical of its value, a sentiment which proved quite groundless as will be evident later. The contract was of similar design to the parent brochure with a cartoon illustration and spaces for name of parent(s) and child, address, telephone number and signature agreeing to participate. To avoid offence or embarrassment when talking to or visiting parents it was useful to be aware of differences in surnames between parent and child.

To lend further "dignity" to participation in the project the children in the experimental groups were provided with a stout clear plastic envelope incorporating a zip; the envelope had a logo printed on the front. It was intended that the envelopes should be used to take the diary and reading book to and from school or, where child pairings were concerned, used in the classroom.

Questionnaires were also prepared, compiled from a variety of sources including the questions which had yielded the most useful responses in the pilot study. They included questionnaires

(a) for use by the author when visiting the parents; there were 32 questions covering all the details of the paired reading technique,

(b) for completion by the parent after the end of the project and incorporating a space for open-ended comments,

(c) for the children in both parent-tutored and child-tutored experimental groups,

(d) for the child tutors and

(e) for the teachers of both schools with some different questions appropriate to the form of tutoring. Copies of the questionnaires are shown at Appendices 10 to 12.

Finally it was necessary to ensure that library books were ordered during the autumn term and arrangements made for collection and delivery. Upstead P junior school succeeded in obtaining a grant of 100 from the local education authority to enable additional books to be purchased.

7.6. PROCEDURE

7.6.i. Browning C

For Browning C the sequence of events was as follows: stages one to five taking place in January 1987 and subsequent stages as indicated.

a. A lunchtime meeting to explain the project to the teachers and distribute the descriptive material. That the project was worthwhile seemed to be accepted; most questions were directed to method.

b. A preliminary talk explaining paired reading to all the children likely to be involved.

c. The administration of attitude and reading tests to all second and third year children. The Dundee Attitude to Reading Test was simple to administer and the instructions were adhered to. For the second year children it was considered advisable to read out the questions to avoid misunderstanding. Level three of The Edinburgh Reading Test was administered to the fourth year and level two to the second year. To aid in the smoothness of administration

the examples for the practice test were written on cards and displayed on a blackboard in preference to repeated use of the blackboard itself. No apparent problems occurred which were likely to have any bearing on the test scores. However, bearing in mind that the ERT is a group test, it was essential to provide reading books for children who completed the test early. At the first administration it became evident that some children were likely to finish well within the time allowed and, without something to occupy them, they were likely to disturb the others.

d. The construction of the peer and cross-age tutor groups as described above. The teachers' advice was sought as to whether the pairings based on the reading test scores were compatible, but no objections were entered. When the results of the project are discussed it will be evident that more care could have been taken with the construction of the pairings.

e. Meetings for peer and cross-age groups to instruct the children in the paired reading technique. These were 45 minute periods which included a demonstration by children from the pilot study, an edited showing of Keith Topping's instructional video and a practice session. A display card was prepared which described the paired reading technique in basic terms: "choose a book, read together, read alone: praise: no fuss." The instruction leaflets, which were simplified versions of the parent handbook adapted for either pupils or tutors, diaries and plastic carriers were distributed at this meeting (see Appendices 9, 15 and 16).

f. The project started on Monday 2nd February 1987 and continued until Friday 3rd April 1987; this gave eight weeks for the duration of the study exclusive of the intervening half-term. The time set aside by the teachers for the reading sessions was at the start of afternoon school from 1 a.m. to 1.20 a.m. Books available for the project were displayed appropriately. During the first week the children were encouraged to concentrate on reading together.

g. On Monday 9th February a further 45 minute instructional period was provided to concentrate on the change-over from simultaneous to independent reading.

h. Also during the first week of the project individual administration of The Matching Familiar Figure Test took place.

i. Because of administrative problems which made teacher supervision of the reading pairs difficult - a point to be discussed later - the author visited the school twice during the second week of the project (apart from the instructional sessions) and subsequently once a week to encourage the children and to correct any deviations from the prescribed technique.

j. To give further encouragement to the children, half way through the project prizes were given for the colouring of the cartoon on the front cover of the diaries.

k. Immediately after the completion of the project on Friday 3rd April 1987 post-testing was undertaken using the ERT. The Dundee Attitude to Reading Test was not readministered until January 1988 because the compilers

recommended a lapse of time between administrations of six months.

l. Completion of a questionnaire by teachers and children. Fourth year tutors completed their own questionnaire and some provided open-ended comments. The author assisted the second year pupils and tutors to complete theirs.

m. A meeting was held to thank and praise all the children who had participated.

n. Thank you letters were sent to the staff expressing appreciation for their co-operation.

o. Copies of the test results were made available to the headteacher and participating staff and, after a preliminary evaluation of the raw data, a meeting was held with the staff early in July 1987 to provide feedback on the initial conclusions.

p. The DART and the ERT were readministered nine months after the completion of the paired reading intervention in January 1988.

7.6.ii. Upstead P

For Upstead P the sequence of events was as follows.

a. A teachers' meeting was held after school in early January 1987. Most of the discussion centred around details of method and assurances that a large proportion of the work involved would be the responsibility of the author. Assurances were also given that any disruption of class routine would be kept to a minimum. Bush (1983) had met objections from teachers to the use of unqualified parental

support in her own paired reading studies and there are other records in the literature of this occurring. With the record of parent/staff co-operation which has been traditional at Upstead P over recent years any queries of this nature were precluded. At this meeting descriptive material about paired reading was distributed.

b. On Tuesday 20th January 1987 an assembly was held for all the second year children at which the author explained the project in more detail; teachers had already given the children a preliminary "warning". Another reason for the assembly was to ask the children to remind and to encourage their parents to attend the meeting on the following day in spite of the heavy falls of snow.

c. The first of two parents' meetings was held on the evening of Wednesday 21st January 1987. Thick snow lay on the ground so much so that consideration was given to postponing the meeting but it was decided that this would be too confusing. There were 101 children in the second year at this time and 98 parents (three sets of twins). Fifty-nine families or 60% of the total in the year were represented at the meeting. Unfortunately a note was not taken of the number of families represented by both parents though this was clearly substantial. Most parents had also brought their children as requested. Whilst a number of studies record a 70% response from parents this is clearly exceptional; it was felt that to achieve a 60% response on the evening of one of the worst days in a generally severe winter was indicative of considerable parental enthusiasm. Also present were the deputy-headteacher, the headteacher being away on a

course for the remainder of the term, the senior mistress responsible for language development throughout the school and the three second year teachers. After refreshment which helped to set an informal tone, the meeting commenced at 7.30 p.m. The deputy head welcomed the parents and introduced the author.

The meeting was structured to ensure that it did not go on for longer than one hour though this was exceeded by about ten minutes. Two large cards were displayed to provide basic prompts for the sequence of the paired reading technique as reference was made to it and to indicate what the research was all about. The first card was similar from that used for the child tutors and consisted of six items: "child chooses a book, reads together with parent, reads alone, reads together again after error; praise; no fuss." The second card simply stated on three lines "Which is best? reading together + reading alone: OR reading together OR reading alone."

During the first fifteen minutes a potted history was given of paired reading since 1976. Four points were stressed. First, that for children who participated in paired reading, both their reading accuracy and comprehension improved. Secondly, as Robinson (1985) and Topping (1985b) observe, parents will want some idea as to why their children have been chosen to participate in the project and they may incorrectly assume that their child is "backward". Whilst the letters to parents should have explained the intention of the research, additional reassurance was given on this point in that the aim of the

study was to ask parents to agree to being separated into three groups providing the three different approaches noted on the display card. This would enable a comparison to be made to assist in the resolution of the query as to whether the full paired reading technique was really necessary to effect an improvement in children's reading. It was also emphasised that all children appeared to benefit regardless of age, ability or degree of initial reading attainment. Thirdly, paired reading was not intended to supplant the work of teachers but to complement their range of more sophisticated techniques and reading aids. Finally, to forestall any disappointment, parents were cautioned that there was always a small minority of children who did not respond to paired reading.

For the next 20 minutes three sections of the Keith Topping video were shown. "How not to do it." was self-explanatory and very amusing. "How to do it (reading together)" called for some comment. Particular attention was directed to the choice of reading books. The consensus of advice culled from research reports and emphasised by Morgan (1986b) is that, where possible, class readers, reading schemes, colour coded books and "dated" books should be avoided when providing books for use in a paired reading project. Since one of the aims of paired reading is to reduce the anxiety often experienced by children who are in the early stages of learning to read this makes sense. When children compare notes about their progress, the absence of any progressive reference points in their reading material tends to confine "competition" to their own progress. These

points were stressed to parents. The "How to do it - reading alone." section of the video was more in line with the traditional manner in which parents hear their children read. It was also largely self-explanatory and only called for minimal comment to emphasise the sequence of the technique.

The video was followed by a ten minute question session. Surprise was expressed by one parent that it had taken ten years to establish paired reading. If it was all that good why the delay? This was a good question and reasons were advanced as to why it took until 1984 before schools generally became enthusiastic about the technique. Other questioners were still concerned that children who were good readers did not need to participate. It was emphasised that research had shown that good readers did in fact show continued improvement particularly in their comprehension, but one or two parents remained unconvinced and clearly would decline to participate in the project. More knowledgeable parents and staff questioned the design of the project: "Who was paying for it?", "Would there be a control group?" etc.

During the next fifteen minutes children went to the school library and chose a suitable book to practise reading together with their parents. The author and school staff present went among the parents to encourage and give advice where this was needed. Considerable enthusiasm was expressed for the method by both parents and children.

To round off the meeting paired reading handbooks numbered 1, 2 and 3 were distributed and parents who were

interested were asked to sign the enclosed contract form and return to a second meeting at the same time on Wednesday 28th January 1987. The parental commitment was outlined in terms of fifteen minute daily reading sessions, six days per week for eight weeks and the completion of a daily diary which should be returned to the class teacher every Friday morning. The commitment of the author to provide as full support as possible was also stressed; details of that support will be apparent during the course of this account. Interested parents were also urged to practise reading together with their children during the intervening week between meetings and return to practise the independent mode on the following Wednesday evening.

d. The test programme, including The Edinburgh Reading Test Part 2 and The Dundee Attitude to Reading Test, were administered to the three second year classes on 26th, 27th and 28th January 1987. The same procedure was adopted as at Browning C and no untoward problems arose.

e. The second parents' meeting together with the children was held at 7.15 p.m. on Wednesday 28th January 1987. Refreshments were again served beforehand. In spite of continuing inclement weather, on this second occasion, 51 parents attended (one was the mother of twins); this represented 53% of the year. It was gratifying to discover that all the parents had signed the contract form and it was possible to form two groups of 17 and one of 18 (one parent who was unable to attend the meeting joined the project on the following day). The construction of the groups was entirely random being based on the number of the paired

reading handbook distributed at the previous meeting. Most parents and children had practised reading together during the preceding week. For a period of 20 minutes they also practised reading on the evening but this time according to the requirements of their group (paired reading or independent reading). The author and school staff moved among the parents to check on the technique. The facility with which parents and children were so quickly gaining a degree of proficiency was encouraging. The meeting lasted for about 45 minutes after parents were reminded of the support available to them. Care was taken during the course of the evening to ensure as far as possible that children had not been manoevred into participating which would only be counterproductive.

f. The deputy head wrote to all the parents who had attended the meetings thanking them for their response under difficult climatic conditions.

g. The project started on Monday 2nd February 1987 and was designed to continue for 8 weeks until Friday 27th 1987 March. On the first Monday diaries and plastic carriers were distributed to the children participating and time was set aside for them to choose a book to take home.

h. During the first week of the project individual administration of the Matching Familiar Figure Test took place.

i. Class teachers checked the children's diaries weekly though inevitably all children did not remember to return them regularly each Friday.

j. The author was available every Friday afternoon from 2 p.m. until 3.30 p.m. to advise any parents with problems. It was also an opportunity to examine the diaries which had been returned and to provide feedback by way of comments.

k. The visiting programme was designed to ensure that each of the parents in the group following the full paired reading regime were visited on four occasions during the second, fourth, sixth and eighth weeks. Documentation of the degree to which this was achieved will be noted in the results section. Each visit lasted for approximately thirty minutes and therefore required a commitment of from two to two and a half hours on each weekday evening. On each visit the parent read with the child and the author took notes. On the final visit the author completed a structured questionnaire detailing the degree to which parents had managed to carry through the paired reading technique. The reading period was followed by an opportunity to discuss any problems that had arisen and suggest remedies.

{Morgan (1984) made the general observation that he had found, in his own practice over a wide range of behavioural treatments, that fortnightly check-ups appeared to be an optimum time between contacts. If left unsupported for longer there was a tendency for the subjects to run into increasing deviations from good practice. On the other hand Topping (1986c) reports that projects which have included follow-up visits have not produced significantly better outcomes than projects which have not included such visits. He does add that nevertheless home visits also generate "...

positive subjective feedback" from participants and can have other desirable spin-off effects. Henderson and Glynn (1986) discuss the question of feedback. In their opinion it is an essential function of visits to parents. They were involved in working with teacher trainees to provide feedback to parents who were tutoring their children in reading. They emphasise that, where possible, feedback should be immediate, precise, frequent and positive. They also stress that, to be effective, target behaviours should be specified so that feedback can be given in terms of specific behaviours. Henderson and Glynn (1986) emphasise the importance of encouraging parents to talk about their tutoring methods and self-correct rather than by promoting dependence upon the researcher always prescribing modifications. These guidelines are valuable and a similar approach was adopted in this present study.}

1. It would have been almost impossible for one person to sustain a home visiting programme across the three groups involving 52 children (but see N.B. below). Instead the parents in the other two groups were contacted by telephone at fortnightly intervals and a similar feedback and advice service was offered. As a point of interest all but one of the 52 parents involved in this study were on the telephone.

N.B. Both Greening and Spenceley (1984) and Lindsay et al (1985) who conducted the studies with shared reading (simultaneous reading) and relaxed reading (independent reading) respectively both conclude that home

visiting is unnecessary. It was therefore decided that their respective techniques should be replicated here.

m. On Monday and Friday evenings between 6 p.m. and 7 p.m. the author was also available at home to answer any queries. Transcripts were kept of these conversations.

n. When it was realized that one or two parents had taken their children away for the half-term the project was extended for another week until Friday 3rd April 1987 to enable parents to make up for lost reading sessions due to the half-term or other factors.

o. Post-testing took place on the 8th and 9th of April 1987 using the ERT though, as mentioned for Browning C, The Dundee Attitude to Reading Test was not re-administered until January 1988.

p. Thank you letters were sent to parents and children in early April 1987 together with questionnaires and stamped addressed envelopes.

q. Letters of appreciation were sent to the school staff also enclosing questionnaires for completion.

r. To ensure that the identity of the control group was unknown until the conclusion of the study it was not constructed until then. Forty-nine children did not participate. From these, 19 children were eliminated because their parents heard them read on one or more occasions during the course of each week. For the remaining 30 children 18 were randomly selected using random numbers.

s. During the early part of the summer term copies of test results were made available to the school staff.

t. In June 1987 individual letters were sent to all parents giving an outline of the preliminary findings of the research programme and providing information on the improvement in the reading attainments of their own children (see Appendix 14).

u. In January 1988, nine months after the completion of the intervention the ERT and the DART were readministered.

7.7 DATA ANALYSIS

Results were analyzed using the Minitab (1976) computer package and advice was sought from a statistician about appropriate statistical tests. ANOVA and independent 't' tests were used for Hypotheses 1 to 6 and 9 to 11, for hypotheses 7 and 8 independent 't' tests and for hypothesis 12 a paired 't'test. Either a two-tail or a one-tail 't' test was used, as appropriate for null or directional hypotheses. It is intended to use the 't' tests whether or not the ANOVA calculations produce significant results. Statisticians accept that a failure to establish statistical significance using ANOVA should not preclude the use of 't' tests. Gay (1981) notes "It is possible to obtain a non-significant F ratio and yet to find a significant difference between two or more means." Both Gay (1981) and Greene and D'Oliveira (1982) stress that 't' tests are differentiated from ANOVA where the number of subjects is small. 't' tests make adjustment for the fact that "...small samples become increasingly different from a normal distribution as sample sizes become increasingly smaller." (see Gay, 1981). Carver (1978) quotes Nunnally (1960) who stresses that "...if the

null hypothesis is not rejected it is usually because N is too small." Selkirk (1979) concludes that "If a priori predictions can be made about comparisons between groups then tests of these hypotheses may be carried out whether or not a significant value of F is obtained.

The requirements for the use of both ANOVA and 't' tests appear to be fulfilled: the sample is assumed to be normally distributed, (Gay, 1981) comments "...most variables studied in education are normally distributed (and) this assumption is usually met."), subjects were randomly allocated to experimental groups, interval data are used and the variance of the population comparison groups is approximately equal.

C H A P T E R 8

R E S U L T S

8.1.SUMMARY DATA

The 120 children who participated in the present study were placed in six groups, five treatment groups plus a control group with 15 children in each; groups 1, 2 and 3 were tutored by their parents; groups five and six were tutored by their peers and by cross-age children respectively. Throughout the study the groups are numbered and described as in Table 4 below. (For convenience peer tutors and cross-age tutors are also given a group label viz. Groups 7 and 8 respectively).

TABLE 3.

EXPERIMENTAL GROUPS: NOMENCLATURE AND TUTORS

GROUP	DESCRIPTION	TUTORS
1	Paired reading	Parents
2	Simultaneous reading	"
3	Independent reading	"
4 or C	Control	—
5	Paired reading	Peers (Group 7)
6	Paired reading	4th yr (Group 8)

At the start of the study in January 1987 the mean age of the 105 second year children was 8.9 years or 8 years 11 months approximately and the SD was 0.29 years or 3.5 months approximately. The ages ranged from 8.4 years or 8

years 5 months to 9.3 years or 9 years 4 months. The mean age of the 15 fourth year children who acted as cross-age tutors was 10.84 years or 10 years 10 months and the SD for this group was also 3.5 months approximately. Their ages ranged from 10 years 5 months to 11 years 3 months (see Table 5): in the experimental groups there were 59 boys and 46 girls; the groups were not matched for sex.

In presenting the results, following the presentation of summary data and a brief examination of factors affecting the sample, each hypothesis will be examined in turn together with the relevant data. Subsequently additional data of interest or significance will be provided. Finally any qualitative data which has a bearing on the sample will be summarized.

8.1.i. Edinburgh Reading Test summary data

Tables 6A and 7, provide the means and SD's of the ERT Stages 2 and 3 RQ (standardized and raw data respectively) at Times 1, 2 and 3 for all groups taken individually and together. Tables 6B to 6G provide the standardized means and SD's for the six subtests of the ERT Stage 2 for each 2nd year group taken separately and together (the maximum score for each of the subtests is 15). Time 1 relates to January 1987 a week before the start of the study, Time 2 was nine weeks later after the paired reading intervention period and Time 3 was in mid-January 1988 (nine months later).

Table 6A, shows the homogeneity of the mean scores for the Upstead P children in Groups 1, 2 and 3 and Control group 4 reflecting the random assignment of children to

groups. The subjects comprising Groups 5, 6 and 7 from Browning C were drawn from second year children with lower, middle and upper reading ability quotients based on the ERT Stage 2; this is also evident from the data in Table 6A. The reading quotient of the subjects in Group 8 is only moderate because it was judged that fourth year children of moderate reading ability would benefit more from acting as tutors than their more able peers. Two further points to make are firstly that Table 8 provides a comparison of the ERT scores between Upstead P and Browning C at Times 1, 2 and 3. The close correspondence between the mean reading quotients should be noted. This correspondence is indicative of the homogeneity of the middle-class catchment area served by both schools. Secondly, as a check on the concurrent validity of the ERT, in April 1987 following the second administration, The Richmond Tests of Basic Skills (Test V - Vocabulary; Test R - Reading comprehension and Test L4 - Usage) were administered. A mean of the three test quotients provided by the Richmond measures correlated very highly with the ERT at 0.903.

A discussion of appropriate tests of statistical significance for the present study is provided in Chapter 7.7.

NB Because of the large number of statistical tables presented in this section Appendix 31 summarizes them to provide easier access to data.

TABLE 4.

CHRONOLOGICAL AGE: MEANS AND SD'S FOR ALL GROUPS

GROUP	MEAN	SD	MIN:	MAX:
1 to 7(boys)	8.92yrs	0.29yrs	8.4yrs	9.3yrs
1 to 7(girls)	8.86 "	0.29 "	8.3 "	9.3 "
1	8.6 "	0.30 "	8.4 "	9.25"
2	8.9 "	0.30 "	8.4 "	9.3 "
3	9.0 "	0.24 "	8.6 "	9.3 "
4	8.9 "	0.28 "	8.4 "	9.25"
5	8.8 "	0.36 "	8.4 "	9.3 "
6	8.8 "	0.30 "	8.3 "	9.25"
7	8.9 "	0.32 "	8.4 "	9.3 "
8	10.8 "	0.27 "	10.5 "	11.3 "

TABLE 5.

ERT STAGES 2 AND 3 RQ MEANS AND SD'S FOR ALL GROUPS

FOR TIMES 1, 2 AND 3

GROUP	STATISTIC	TIME 1.	TIME 2.	TIME 3.
1 TO 7	MEAN	102.85	109.02	109.83
	SD	12.99	13.00	14.17
1	MEAN	100.87	110.00	110.20
	SD	14.54	16.02	16.35
2	MEAN	99.53	105.07	103.33
	SD	13.14	11.96	12.87
3	MEAN	105.40	110.60	113.60
	SD	15.11	14.01	14.89
4	MEAN	104.40	110.33	111.73
	SD	9.60	10.73	12.58
5	MEAN	90.20	98.47	98.60+
	SD	11.19	11.77	12.12
6	MEAN	102.93	107.20	108.93
	SD	2.40	6.06	8.24
7	MEAN	116.60	121.47	122.40
	SD	4.17	7.64	9.75
8 *	MEAN	103.53	106.73	-
	SD	3.38	4.64	-

* ERT STAGE 3 N = 15 for each group.

TABLE 6A.

ERT STAGE 2 MEANS AND SD'S FOR SUBTEST A FOR ALL GROUPS FOR TIMES 1, 2 AND 3

GROUP	STATISTIC	TIME 1	TIME 2	TIME 3
1 TO 7	MEAN	8.09	9.00	9.69
	SD	2.39	2.45	2.60
1	MEAN	8.47	9.27	9.13
	SD	2.67	2.49	2.56
2	MEAN	7.40	8.87	9.00
	SD	1.88	2.67	2.83
3	MEAN	8.60	9.53	11.27
	SD	2.64	2.56	2.12
4	MEAN	8.73	9.53	10.07
	SD	1.49	2.56	2.71
5	MEAN	5.53	6.73	7.40
	SD	2.07	8.47	9.27
6	MEAN	7.80	8.47	9.27
	SD	1.26	1.19	1.49
7	MEAN	10.07	10.60	11.67
	SD	1.98	2.03	1.45

N = 15 for each group

TABLE 6B.

ERT STAGE 2 MEANS AND SD'S FOR SUBTEST B FOR ALL GROUPS

FOR TIMES 1, 2 AND 3

GROUP	STATISTIC	TIME 1	TIME 2	TIME 3
1 TO 7	MEAN	8.01	9.25	10.10
	SD	2.96	2.58	2.96
1	MEAN	7.80	9.53	9.93
	SD	3.19	2.45	3.19
2	MEAN	7.53	8.33	9.13
	SD	2.97	2.09	3.07
3	MEAN	8.73	10.47	11.00
	SD	3.77	3.25	2.39
4	MEAN	8.47	10.20	9.93
	SD	2.07	1.47	2.71
5	MEAN	5.13	6.87	7.53
	SD	2.33	2.33	2.45
6	MEAN	7.80	8.20	10.47
	SD	1.47	1.82	2.45
7	MEAN	10.60	11.13	12.73
	SD	1.72	1.77	1.98

N = 15 FOR EACH GROUP

TABLE 6C.

ERT STAGE 2 MEANS AND SD'S FOR SUBTEST C FOR ALL GROUPS

FOR TIMES 1, 2 AND 3

GROUP	STATISTIC	TIME 1	TIME 2	TIME 3
1 TO 7	MEAN	7.63	9.38	10.60
	SD	2.74	3.15	3.21
1	MEAN	7.00	9.53	10.60
	SD	2.93	3.89	3.48
2	MEAN	6.87	8.60	9.27
	SD	3.25	3.13	3.28
3	MEAN	8.07	8.87	10.60
	SD	2.60	3.33	3.40
4	MEAN	7.80	9.13	11.00
	SD	2.70	2.67	2.73
5	MEAN	6.07	8.20	8.73
	SD	2.37	3.10	3.10
6	MEAN	7.27	9.27	10.33
	SD	1.83	2.49	2.58
7	MEAN	10.33	12.07	13.67
	SD	1.23	2.12	1.63

N = 15 FOR EACH GROUP

TABLE 6D.

ERT STAGE 2 MEANS AND SD'S FOR SUBTEST D FOR ALL GROUPS

FOR TIMES 1, 2 AND 3

GROUP	STATISTIC	TIME 1	TIME 2	TIME 3
1 TO 7	MEAN	7.80	9.15	10.26
	SD	3.18	2.66	2.59
1	MEAN	7.27	9.27	10.60
	SD	3.61	3.19	2.75
2	MEAN	7.27	8.47	8.73
	SD	3.53	2.56	2.71
3	MEAN	9.00	9.93	9.80
	SD	2.62	2.37	2.70
4	MEAN	7.80	8.87	10.47
	SD	3.10	2.07	1.92
5	MEAN	5.00	7.27	8.87
	SD	3.38	3.28	2.67
6	MEAN	8.07	9.00	10.87
	SD	1.67	1.85	1.77
7	MEAN	10.20	11.27	12.47
	SD	1.47	1.28	1.77

N = 15 FOR EACH GROUP

TABLE 6E.

ERT STAGE 2 MEANS AND SD'S FOR SUBTEST E FOR ALL GROUPS

FOR TIMES 1, 2 AND 3

GROUP	STATISTIC	TIME 1	TIME 2	TIME 3
1 TO 7	MEAN	7.30	8.79	9.72
	SD	2.48	2.49	2.72
1	MEAN	6.47	8.07	9.40
	SD	2.07	2.12	3.13
2	MEAN	6.87	8.60	9.27
	SD	3.16	2.16	3.01
3	MEAN	7.13	8.47	10.20
	SD	1.92	2.87	3.00
4	MEAN	7.67	9.53	11.40
	SD	2.79	1.92	2.03
5	MEAN	5.80	6.73	8.07
	SD	2.37	2.81	2.25
6	MEAN	7.80	9.27	9.00
	SD	1.66	1.67	2.14
7	MEAN	9.40	10.87	10.73
	SD	1.72	1.92	2.25

N = 15 FOR EACH GROUP

TABLE 6F.

ERT STAGE 2 MEANS AND SD'S FOR SUBTEST F FOR ALL GROUPS

FOR TIMES 1, 2 AND 3

GROUP	STATISTIC	TIME 1	TIME 2	TIME 3
1 TO 7	MEAN	7.72	9.06	9.61
	SD	3.10	3.01	2.60
1	MEAN	7.13	9.53	9.67
	SD	2.97	3.74	3.44
2	MEAN	7.13	8.20	8.87
	SD	3.25	3.36	2.67
3	MEAN	8.83	9.40	10.47
	SD	3.60	3.40	2.87
4	MEAN	6.87	8.60	9.67
	SD	2.67	2.85	2.47
5	MEAN	5.80	7.53	8.73
	SD	3.19	2.77	2.71
6	MEAN	7.93	8.73	9.13
	SD	1.67	1.28	1.19
7	MEAN	10.87	11.40	10.73
	SD	1.60	1.72	2.12

N = 15 FOR EACH GROUP

TABLE 7.

ERT STAGES 2 AND 3 RAW DATA MEANS AND SD's FOR ALL GROUPS FOR TIMES 1, 2 AND 3

GROUP	STATISTIC	TIME 1.	TIME 2.	TIME 3.
1 to 7	MEAN	49.38	62.17	71.51
	SD	23.18	23.73	24.42
1	MEAN	44.67	62.93	71.00
	SD	24.51	27.26	26.55
2	MEAN	42.80	54.60	60.40
	SD	24.64	22.60	24.51
3	MEAN	55.73	66.47	77.93
	SD	26.70	25.37	24.43
4	MEAN	51.53	64.67	75.47
	SD	17.78	20.23	21.20
5	MEAN	27.67	42.93	50.93
	SD	17.98	23.87	24.12
6	MEAN	48.20	58.87	71.67
	SD	6.44	11.65	14.54
7	MEAN	75.07	84.73	93.20
	SD	7.67	11.33	11.53
8 *	MEAN	86.80	97.60	-
	SD	8.71	11.69	-

* = ERT Stage 3. N = 15 for each group.

TABLE 8.

ERT STAGE 2 RQ MEANS AND SD'S FOR UPSTEAD P AND BROWNING C CHILDREN IN EXPERIMENTAL GROUPS FOR TIMES 1, 2 AND 3

TIME	SCHOOL	MEAN	SD
1	UPSTEAD	102.6	13.2
	BROWNING	103.2	12.9
2	UPSTEAD	109.0	13.2
	BROWNING	109.0	12.9
3	UPSTEAD	109.7	14.4
	BROWNING	110.0	14.0

N = 60 FOR UPSTEAD P: N = 45 FOR BROWNING C (i.e. excluding 4th year Group 8).

8.1.ii. Assesment of changes in reading ability

To give a measure of the overall effect of the paired reading intervention on both pupils and child tutors as distinct from the generally comparative emphases of the operational hypotheses three additional null hypotheses were tested:

(a) that the mean difference in the reading quotient as measured by the Edinburgh Reading Test Parts 2 and 3 between Times 1 and 2 will be zero,

(b) that the mean difference in the reading quotient as measured by The Edinburgh Reading Test Part 2 between Times 1 and 3 will be zero and

(c) that the mean difference in the reading quotient as measured by The Edinburgh Reading Test Part 2 between Times 1 and 3 will be zero.

It will ne noted from Tables 9, 10 and 11 that, using a "t" test for paired data it was possible to reject the first two null hypotheses apart from the mean reading quotient difference between Times 1 and 3 for Group 2. Table 11 shows that it is not possible to reject the third null hypothesis. The data thus indicate that all groups showed significant increases in reading ability between Times 1 and 2; all except Group 2 showed significant differences between Times 2 and 3.

Out of the sixty children from Upstead P who participated in the present paired reading study, reading data are available for 52 children from September 1985. Table 12 gives the mean scores and standard deviations for September 1985, May 1986 and January 1987 using the Kent Reading Test, the National Foundation for Educational Research Test A and the Edinburgh Reading Test Stage 2 respectively. Table 13 gives the Pearson product moment correlation between the three tests. There is no comparable data for Browning C, but it can be seen from Table 8 that the close correspondence of the mean RQ scores at Upstead P and Browning C at Times 1, 2 and 3 suggests that if comparable data were obtainable a similar retrospective parity of mean RQ would also obtain. The additional data obtained from Upstead P is important in working out the 'tnp' gains used by Topping (1987a) (see hypothesis 13).

TABLE 9.

't' TEST DATA: ERT STAGES 2 AND 3 RQ MEANS AND SD'S FOR ALL GROUPS FOR T2 - T1.

GROUPS	N	MEAN RQ T2 - T1	SD	't'
1,2,3,5,6	75	6.48	6.00	9.36 ***
1 TO 7	105	6.17	6.09	10.39 ***
1	15	9.13	4.44	7.97 ***
2	15	5.53	6.29	3.41 **
3	15	5.20	5.71	3.53 **
4	15	5.93	5.48	4.19 ***
5	15	8.27	7.21	4.44 ***
6	15	4.27	5.24	3.15 **
7	15	4.87	7.25	2.60 *
8 £	15	3.20	3.12	3.97 **

*** P <0.001: ** P <0.01: * P < 0.05; (one-tail).

£ = ERT Stage 3

TABLE 10.

't' TEST DATA: ERT STAGE 2 RQ MEANS AND SD'S FOR ALL GROUPS

FOR TIMES 3 - 1

GROUPS	N	MEAN RQ T3 - T1	SD	't'
1,2,3,5,6	75	7.15	7.82	7.92 ***
1 TO 7	105	6.98	7.80	9.18 ***
1	15	9.33	6.05	5.97 ***
2	15	3.80	9.32	1.58
3	15	8.20	5.75	5.53 ***
4	15	7.33	6.50	4.37 ***
5	15	8.40	9.29	3.50 **
6	15	6.00	7.67	3.03 **
7	15	5.80	9.18	2.45 *

*** p <0.001: ** p <0.01: * p < 0.05 (one-tail)

TABLE 11.

't' TEST DATA: ERT STAGE 2 RQ MEANS AND SD'S FOR ALL GROUPS FOR TIMES 3 - 2

GROUPS	N	MEAN RQ T3 - T2	SD	't'
1,2,3,5,6	75	0.40	7.23	0.43
1 TO 7	105	0.81	6.65	1.25
1	15	0.20	5.75	0.13
2	15	-1.73	7.85	-0.86
3	15	3.00	7.02	1.66
4	15	1.40	5.29	1.03
5	15	0.13	8.00	0.06
6	15	1.73	5.96	1.13
7	15	0.93	6.52	0.55

TABLE 12.

MEANS AND STANDARD DEVIATIONS OF READING QUOTIENTS USING THREE DIFFERENT READING TESTS FOR UPSTEAD P CHILDREN OVER PERIOD INDICATED

KENT TEST SEPT. 1985		NFER TEST 'A' MAY 1986		ERT JAN 1987	
MEAN	SD	MEAN	SD	MEAN	SD
105.83	16.10	105.83	13.06	102.87	13.79

N = 52

TABLE 13.

PEARSON PRODUCT MOMENT CORRELATION COEFFICIENTS BETWEEN THE THREE READING TEST RQ's (see TABLE 12).

	KENT TEST SEPT 1985	NFER TEST 'A' MAY 1986
NFER TEST 'A' MAY 1986	0.891	--
EDINBURGH JAN 1987	0.800	0.846

N = 52.

8.1.iii. The MFFT summary data

Table 14 provides the means and standard deviations for the Matching Familiar Figure Test response latency, error frequency and Salkind's coefficient I. The MFFT was administered once only at Time 1 to all 105 second year children. Retest was precluded in the absence of a parallel form and the validity of the test for children of ten years and over is problematical.

The characteristics of the sample would appear to be typical of the wider population. In an analysis of 19 studies the average correlation between latency to first response and error scores was found by Messer (1976) to be -0.56. In this sample the correlation was found to be -0.539 ($p < 0.001$). As explained in the method chapter 7.4 two methods of calculating conceptual tempo were used in this study (cf Kagan et al, 1963 and Salkind, 1978) to ensure greater accuracy. The dual calculation effectively reduced

overlap of the two categories reflectivity and impulsivity. Sixty-six children were identified as either reflective or impulsive. In this case the correlation between latency to first response and error was -0.706 ($p < 0.001$).

No doubt the adequacy of the correlations to justify co-ordinate status for determining conceptual tempo by numbers of errors and latency to first response will continue to be controversial (see Block et al, 1974) though Ault and Mitchell (1976) argue that, for statistical reasons, the correlation should be at least -0.80. As already discussed, they recommend adjusting the correlation coefficient using the correction for atenuation formula until ways can be found to make the MFFT more reliable. The most common formula for correction for attenuation is

$$r_{1\infty 2\infty} = \frac{r_{12}}{\sqrt{r_{11} r_{22}}},$$

where $r_{1\infty 2\infty}$ is the correlation between the theoretical true scores; r_{12} is the correlation between the scale scores; and r_{11} and r_{22} are the reliabilities of the two scales. Using the internal consistency reliability scores calculated by Messer (1976) for response time and errors of 0.89 and 0.58 respectively the revised correlations between response time and error are -0.725 and -0.95. It is however open to question whether Ault and Mitchell (1976) would still regard the coefficient of correlation found in this study (viz -0.706) as inadequate if they were aware of the work of Salkind (1978).

TABLE 14.

MFFT MEANS AND SD'S FOR LATENCY TO FIRST RESPONSE, ERROR COUNT AND SALKIND'S COEFFICIENT I FOR ALL 2ND YEAR CHILDREN

	N	MEAN	SD
LATENCY TO FIRST RESPONSE *	105	11.22	5.08
ERROR COUNT	105	9.79	4.71
SALKIND'S COEFFICIENT I	105	0.25	1.24

* = Latency to first response is given in seconds

8.1.iv The Dundee Attitude to Reading Test ATR2 Global summary data

Table 15 shows the mean scores and standard deviations for the Dundee Attitude to Reading Test for Times 1 and 3 (1 year later) for all groups taken individually and together. Table 17A presents the information from Table 15 in terms of the four categories: low negative (scoring 18 to 53), moderate (scoring 54 to 60), high normal (scoring 61 to 70) and high positive (scoring 71 to 84). The DART consists of 18 statements to be rated on a five point scale and thus the maximum score obtainable is 90 with a range from 18 to 90.

Table 16 shows the difference between the mean scores for the DART between Times 1 and 3. A 't' test for paired data shows that, in the case of Group 1, there was a statistically significant decrease in the attitude to reading score over the year between Times 1 and 3 ('t' = -2.43, $p<0.05$) Whilst in 4 out of the remaining 6

groups there was also a decrease in the difference between the mean scores for the same period no other differences were statistically significant.

The DART ATR2 Global validation data (Ewing and Johnstone, undated) using a sample of 1,480 primary age children calculated the mean as 65 and the SD as 11.0. For the first administration of the test in the present study the mean = 69.8 and the SD = 11.0; for the second administration the mean = 67.6 and the SD = 10.8 (see Table 15. There is a pronounced negative skew but the spread of scores appears to provide a satisfactory discrimination of attitude to reading. The negative skew may be accounted for by the fact that the catchment area of the two schools is largely middle class. Such facile explanations however too readily spring to mind. Alternatively the explanation might as well have to do with the emphasis placed upon reading progress both prior to and during the intervention period. It will be noted that the DART was only administered twice at Times 1 and 3. Ewing and Johnstone recommend that the time interval between test/retest should be sufficiently long to make it likely that pupils have forgotten earlier responses (they set six months as the limit) yet not long enough to encompass any major change in circumstances. Unfortunately it was not possible to retest the second year children until after their transfer to the third year which introduces a change of teacher and a change in class environment as confounding variables. It is possible that this may account for the fact that in 5 out of the 7 experimental groups there is a reduction in mean score

between times 1 and 3 (in one case significant at $p<0.05$) It may also be of relevance to the fact that the test/retest correlation in this study was 0.54 as against the test/retest correlation in the validation sample of 0.73 though both coefficients are significant at <0.001.

Tables 17B and 18 categorize the information from the Dundee sub-scales, self-assessment and attitude to school which invite a response within five categories on both scales as shown.

The Dundee also established that 79 out of the 105 subjects were members of a public library.

TABLE 15.

DART MEANS AND SD'S FOR ALL GROUPS FOR TIMES 1 AND 3

GROUP	N	STATISTIC	TIME 1	TIME 3
1 TO 8	120	MEAN	69.76	67.60 *
(total)		SD	10.95	10.81 *
1	15	MEAN	71.00	65.80
		SD	8.93	9.93
2	15	MEAN	71.27	67.40
		SD	10.63	10.28
3	15	MEAN	69.47	68.20
		SD	11.13	8.46
4	15	MEAN	75.73	72.80
		SD	8.77	8.71
5	15	MEAN	59.20	61.33
		SD	10.26	14.50
6	15	MEAN	64.73	65.67
		SD	11.65	11.35
7	15	MEAN	73.67	71.93
		SD	10.89	8.83
8**	15	MEAN	73.00	--
		SD	7.01	--

* = Group 1 to 7 only : ** Group 8 were 4th year juniors who left before the second administration of the test.

TABLE 16.

DART ATR2 GLOBAL: MEAN CHANGES IN ATTITUDE SCORES FOR ALL GROUPS BETWEEN TIMES 1 AND 3

GROUP	MEAN	SD	't'
1 TO 7	-1.70	10.62	-1.65
1	-5.20	8.27	-2.43*
2	-3.87	13.93	-1.07
3	-1.27	10.54	-0.47
4	-2.93	8.84	-1.28
5	2.13	7.52	1.10
6	0.93	11.05	0.33
7	-1.73	12.80	-0.52
8	-	-	-

* $p<0.05$

N.B. Group 8 were 4th year juniors who moved on to secondary school before the second administration of the test

TABLE 17A.

DISTRIBUTION OF SCORES IN DART ATTITUDE CATEGORIES FOR TIMES 1 AND 3 FOR 2ND YEAR CHILDREN

	LOW -VE	MODERATE	HIGH NORMAL	HIGH +VE
TIME 1	11	19	20	55
TIME 3	11	13	38	43

N = 105

TABLE 17B.

DISTRIBUTION OF SCORES IN DART SELF-ASSESSMENT CATEGORIES FOR TIMES 1 AND 3 FOR 2ND YEAR CHILDREN

	LEAST CLEVER/ NOT VERY CLEVER	NOT VERY/ AVERAGE	AVERAGE/ FAIRLY CLEVER	FAIRLY/ ONE OF THE CLEVEREST	ONE OF THE CLEVEREST
TIME 1	4	8	43	40	10
TIME 3	0	6	35	58	5

N = 105

TABLE 18.

DISTRIBUTION OF SCORES IN DART ATTITUDE TO SCHOOL CATEGORIES FOR TIMES 1 AND 3 FOR 2ND YEAR CHILDREN

	DISLIKE VERY MUCH	DISLIKE	NEUTRAL	LIKE	LIKE VERY MUCH
TIME 1	11	8	21	22	43
TIME 3	7	5	29	21	43

N = 105.

8.2. HYPOTHESES

For hypotheses 1(a), 1(b), 2(a), 2(b) and 3 to 6 it was deemed appropriate to use a one-way ANOVA and independent 't' tests (see Chapter 7.7) to examine the data. However one-way ANOVA did not show any statistically significant differences between the mean ERT reading quotients in relation to these hypotheses (see Table 19). Nevertheless, as argued in Chapter 7.7. and following the advice of Gay (1981) and Greene and D'Oliveira (1982) this should not be interpreted as indicating a non-significant finding. 't' tests were therefore employed to examine differences between separate group means.

In the present study it is submitted that the use of 't' tests is justified because of the sample size, because inspection of the data show clear differences and most importantly because the a priori expectations based on the literature survey indicate that substantial differences between classical paired reading and the simultaneouus and independent modes would be expected in favour of the classical approach.

Hypothesis 1(a)

There will be no significant difference between the reading progress in terms of overall reading quotient or of sub-scores A to F (as measured by the Edinburgh Reading Test Stage 2) of second year junior children who are tutored by parents using the classical paired reading technique as used by Topping (1985b) (Group 1) and those tutored by parents using the *simultaneous mode of the classical paired

reading technique alone **(Group 2) over a nine week intervention period.

Tables 20A and 21 to 23 give the results of a two-tailed "t" test for independent samples. It was not possible to reject the null hypotheses using a two-tail 't' test for independent samples. However, on the a priori assumption following Topping (1987a) in his 'best buy' analysis of parental involvement in reading schemes, that classical paired reading is more effective than simultaneous reading and independent reading a one-tail 't' test of statistical significance was used to examine the alternative hypothesis in this case (and in relation to hypothesis 1b). For Hypothesis 1(a) the alternative hypothesis was supported for the reading quotient ('t' = 1.81; df = 25; $p<0.05$). For the subtests the alternative hypothesis was not supported.

Hypothesis 1(b).

Insert "independent" instead of "simultaneous" at * and "(Group 3)" instead of "(Group 2)" at ** in hypothesis 1(a).

For hypothesis (1b) the alternative hypothesis was supported for the reading quotient ("t" = 2.11; df = 26; $p <0.05$) and for sub-tests C (retention of significant details) ("t" = 2.27; df = 26; $p <0.05$) and D (use of context) ('t' = 1.84; df = 25; $p<0.05$) For other subtests the alternative hypothesis was not supported (see Tables 20A and 21 to 23).

Hypothesis 2(a).

There will be no significant difference between the reading progress in terms of the overall reading quotient or of sub-scores A to F (as measured by the Edinburgh Reading Test Stage 2) of second year junior children who are tutored by their parents using the classical paired reading technique as used by Topping (1985b) (Group 1) and those tutored by *their peers (Group 5) during a nine week intervention period.

The null hypothesis was accepted for the reading quotient and for each of the sub-groups (Tables 20A and 21 to 23).

Hypothesis 2 (b).

Insert "fourth year junior children (Group 6)" instead of "their peers (Group 5)" at * in hypothesis 2(a).

The null hypothesis was rejected for the reading quotient ("t" = 2.74; df = 27; $p < 0.05$). For the subtests the null hypothesis could not be rejected (see tables 20A and 21 to 23).

Hypothesis 3.

There will be no significant difference between the reading progress in terms of the overall reading quotient or of sub-scores A to F (as measured by the Edinburgh Reading Test Stage 2) of second year junior children who are tutored by their peers (Group 5) and those tutored by fourth year junior children (Group 6) in Topping's (1985b) classical paired reading technique over a nine week intervention period.

The null hypothesis was accepted for the reading quotient and for each of the sub-groups (also Tables 20 and 21 to 23).

(Table 20B shows similar comparisons for the mean reading quotient differences for the experimental groups between Times 1 and 3 and will be referred to under hypothesis 13).

TABLE 19.

ONE-WAY ANALYSIS OF VARIANCE: ERT STAGE 2 RQ COMPARATIVE MEANS AND SD'S GROUPS 1 TO 7 FOR TIME 2 - 1

GROUP	N	MEAN	SD	F
1	15	9.13	4.44	
2	15	5.53	6.29	
3	15	5.20	5.71	
4	15	5.93	5.48	I.37
5	15	8.27	7.21	
6	15	4.27	5.24	
7	15	4.87	7.25	

TABLE 20A.

't' TEST DATA: ERT STAGE 2 COMPARATIVE MEANS AND SD'S FOR TIME 2-1 BETWEEN GROUP 1 AND GROUPS 2, 3, 5 AND 6 AND BETWEEN GROUPS 5 AND 6

	GROUP	MEAN	SD	"t"	df
cf	1	9.13	4.44	1.81	25
	2	5.53	6.29		
cf	1	9.13	4.44	2.11*	26
	3	5.20	5.71		
cf	1	9.13	4.44	0.40	23
	5	8.27	7.21		
cf	1	9.13	4.44	2.74*	27
	6	4.27	5.24		
cf	5	8.27	7.21	1.74	26
	6	4.27	5.24		

N = 15 for each group; * p <0.05 (two-tail).

Note: Where 't' tests for independent samples are used it will be noted that the degrees of freedom vary. This is due to the use of the non-pooled form of the 't' test.

TABLE 20B.

't' TEST DATA: ERT STAGE 2 COMPARATIVE MEANS AND SD'S FOR TIME 3-1 BETWEEN GROUP 1 AND GROUPS 2, 3, 5 AND 6 AND BETWEEN GROUPS 5 AND 6

	GROUP	MEAN	SD	't'	df
cf	1	9.33	6.06	1.93*	24
	2	3.80	9.32		
cf	1	9.33	6.06	0.53	28
	3	8.20	5.75		
cf	1	9.33	6.06	0.33	24
	5	8.40	9.29		
cf	1	9.33	6.06	1.32	27
	6	6.00	7.67		
cf	5	8.40	9.29	0.77	27
	6	6.00	7.67		

N = 15 FOR EACH GROUP; * $p<0.05$ (one-tail).

TABLE 20C.

SUMMARY OF 't' TEST SCORES IN RELATION TO CHANGE IN MEAN ERT RQ BETWEEN TIMES 1 AND 2 FOR ALL POSSIBLE PAIRS OF EXPERIMENTAL GROUPS

Groups / Groups	1 Classical	2 Simultaneous	3 Independent	4 Control	5 Same age tutored	6 Cross age tutored
1 Classical	•					
2 Simultaneous	1·81*	•				
3 Independent	2·11*	ns	•			
4 Control	1·76*	ns	ns	•		
5 Same age tutored	ns	ns	ns	ns	•	
6 Cross age tutored	2·74**	ns	ns	ns	ns	•

* $p < 0.05$; ** $p < 0.01$ (one-tail).

TABLE 21.

't' TEST DATA: ERT STAGE 2 SUBTESTS A AND B COMPARATIVE MEANS AND SD'S FOR TIME 2-1 BETWEEN GROUP 1 AND GROUPS 2, 3, 5 AND 6 AND BETWEEN GROUPS 5 AND 6

		SUB-TEST A				SUB-TEST B			
GROUP		MEAN	SD	"t"	df	MEAN	SD	"t"	df
cf	1	0.80	1.26	0.94	21	1.73	2.12	1.17	28
	2	1.47	2.45			0.80	2.24		
cf	1	0.80	1.26	0.32	27	1.73	2.12	1.00	27
	3	0.93	1.03			1.73	2.60		
cf	1	0.80	1.26	0.74	26	1.73	2.12	0.00	27
	5	1.20	1.66			1.73	2.49		
cf	1	0.80	1.26	0.25	26	1.73	2.12	1.65	28
	6	0.67	1.63			0.40	2.29		
cf	5	1.20	1.66	0.89	28	1.73	2.49	1.52	28
	6	0.67	1.63			0.40	2.29		

N = 15 for each group

TABLE 22.

't' TEST DATA: ERT STAGE 2 SUBTESTS C AND D COMPARATIVE MEANS AND SD'S FOR TIME 2-1 BETWEEN GROUP 1 AND GROUPS 2, 3, 5 AND 6 AND BETWEEN GROUPS 5 AND 6

		SUB-TEST C				SUB-TEST D			
GROUP		MEAN	SD	"t"	df	MEAN	SD	"t"	df
cf	1	2.53	1.77	1.22	28	2.00	1.85	0.90	24
	2	1.73	1.83			1.20	2.91		
cf	1	2.53	1.77	2.27*	26	2.00	1.85	1.84	25
	3	0.80	2.37			0.93	1.28		
cf	1	2.53	1.77	0.65	28	2.00	1.85	0.33	26
	5	2.13	1.60			2.27	2.49		
cf	1	2.53	1.77	0.64	24	2.00	1.85	1.84	25
	6	2.00	2.73			0.93	1.28		
cf	5	2.13	1.60	0.16	23	2.27	2.49	1.84	21
	6	2.00	2.73			0.93	1.28		

N = 15 for each group; *p<0.05 (two-tail).

Comparisons between Groups1/6 and 5/6 ns using two-tail.

TABLE 23.

't' TEST DATA: ERT STAGE 2 SUBTESTS E AND F COMPARATIVE MEANS AND SD'S FOR TIME 2-1 BETWEEN GROUP 1 AND GROUPS 2, 3, 5 AND 6 AND BETWEEN GROUPS 5 AND 6

		SUB-TEST E				SUB-TEST F			
GROUP		MEAN	SD	"t"	df	MEAN	SD	"t"	df
cf	1	1.60	1.55	0.20	26	2.40	2.85	1.42	27
	2	1.73	2.12			1.07	2.25		
cf	1	1.60	1.55	0.41	27	2.40	2.85	1.34	28
	3	1.33	1.95			1.07	2.60		
cf	1	1.60	1.55	1.03	27	2.40	2.85	0.61	28
	5	0.93	1.98			1.73	3.10		
cf	1	1.60	1.55	0.25	28	2.40	2.85	1.88	22
	6	1.47	1.41			0.80	1.66		
cf	5	0.93	1.98	0.85	25	1.73	3.10	1.03	21
	6	1.47	1.41			0.80	1.66		

N=15 for each group:

HYPOTHESIS 4.

Second year junior children tutored by parents in classical paired reading (Group 1) or in the simultaneous or independent modes (Groups 2 and 3 respectively) will make greater reading progress in terms of their reading quotient and sub-tests A to F (as measured by the Edinburgh Reading Test Stage 2) than a control (i.e. non-treatment) group (Group 4) over a nine week intervention period.

This hypothesis was supported in terms of the reading quotient for Group 1 but it was not supported for Groups 2 and 3.

Using a one-tail independent "t" test children in Group 1 made significantly greater progress in terms of their reading quotient than the children in the control Group 4 ('t' = 1.76; df = 27; p = <0.05). The remaining comparisons between treatment groups and control were not statistically significant. (see Tables 24A and 25 to 27).

HYPOTHESIS 5.

Second year junior children tutored by their peers (Group 5) or by fourth year junior children (Group 6) in classical paired reading will make greater reading progress in terms of their reading quotient and sub-tests A to F (as measured by the Edinburgh Reading Test Stage 2) than a control (i.e.non-treatment) group (Group 4) over a nine week intervention period.

This hypothesis was not supported. Neither of these comparisons was statistically significant using a one-tailed independent "t" test (see Tables 24A and 25 to 27).

(Table 24b shows similar comparisons between the mean reading quotient differences for control group and experimental groups between T1 and T3 and will be referred to under hypothesis 13).

n.b. Table 20C sets out the one-tail findings relating to hypotheses 1 to 5. It will be noted that the statistically significant findings are confined to those comparisons between the classical paired reading group, the control group and the other experimental groups between Times 1 and 2. This demonstrates the clear superiority of the clasical paired reading technique over the experimental groups.

TABLE 24A.

't'TEST DATA: ERT STAGE 2 RQ COMPARATIVE MEANS AND SD'S FOR TIME 2-1 BETWEEN THE CONTROL AND THE EXPERIMENTAL GROUPS

	GROUP	MEAN	sd	"t"	d
cf	1	9.13	4.44	1.76*	27
	C	5.93	5.48		
cf	2	5.53	6.29	0.19	27
	C	5.93	5.48		
cf	3	5.20	5.71	0.36	28
	C	5.93	5.48		
cf	5	8.27	7.21	1.00	26
	C	5.93	5.48		
cf	6	4.27	5.24	0.85	28
	C	5.93	5.48		

N = 15 for each group: *p <0.05 (one-tail).

TABLE 24b

't' TEST DATA: ERT STAGE 2 RQ COMPARATIVE MEANS AND SD'S FOR TIME 3-1 BETWEEN THE CONTROL AND THE EXPERIMENTAL GROUPS

	GROUP	MEAN	SD	't'	df
cf	1	9.33	6.06	0.87	28
	C	7.33	6.50		
cf	2	3.80	9.32	1.20	25
	C	7.33	6.50		
cf	3	8.20	5.75	0.39	28
	C	7.33	6.50		
cf	5	8.40	9.29	0.36	25
	C	7.33	6.50		
cf	6	6.00	7.67	0.51	27
	C	7.33	6.50		

N = 15 for each group

TABLE 25.

't' TEST DATA: ERT STAGE 2 SUBTESTS A AND B COMPARATIVE MEANS AND SD'S FOR TIME 2-1 BETWEEN CONTROL AND EXPERIMENTAL GROUPS

		SUB-TEST A				SUB-TEST B			
GROUP		MEAN	SD	"t"	df	MEAN	SD	"t"	df
cf	1	0.80	1.26	0.00	22	1.73	2.12	0.00	28
	C	0.80	2.24			1.73	2.12		
cf	2	1.47	2.45	0.78	28	0.80	2.24	1.17	28
	C	0.80	2.24			1.73	2.12		
cf	3	0.93	1.03	0.21	20	1.73	2.60	0.00	27
	C	0.80	2.24			1.73	2.12		
cf	5	1.20	1.66	0.56	26	1.73	2.49	0.00	27
	C	0.80	2.24			1.73	2.12		
cf	6	0.67	1.63	0.19	26	0.40	2.29	1.65	28
	C	0.80	2.24			1.73	2.12		

N = 15 for each group.

TABLE 26.

't' TEST DATA: ERT STAGE 2 SUBTESTS C AND D COMPARATIVE MEANS AND SD'S FOR TIME 2-1 BETWEEN THE CONTROL AND EXPERIMENTAL GROUPS

		SUB-TEST C				SUB-TEST D			
GROUP		MEAN	sd	"t"	df	MEAN	sd	"t"	df
cf	1	2.53	1.77	1.58	26	2.00	1.85	1.39	28
	C	1.33	2.35			1.07	1.83		
cf	2	1.73	1.83	0.52	26	1.20	2.91	0.15	24
	C	1.33	2.35			1.07	1.83		
cf	3	0.80	2.37	0.62	28	0.93	1.28	0.23	25
	C	1.33	2.35			1.07	1.83		
cf	5	2.13	1.60	1.09	25	2.27	2.49	1.50	26
	C	1.33	2.35			1.07	1.83		
cf	6	2.00	2.73	0.72	27	0.93	1.28	0.23	25
	C	1.33	2.35			1.07	1.83		

N = 15 for each group.

TABLE 27.

't' TEST DATA: ERT STAGE 2 SUBTESTS E AND F COMPARATIVE MEANS AND SD'S FOR TIME 2-1 BETWEEN THE CONTROL AND EXPERIMENTAL GROUPS

		SUB-TEST E				SUB-TEST F			
GROUP		MEAN	SD	"t"	df	MEAN	SD	"t"	df
cf	1	1.60	1.55	0.35	23	2.40	2.85	0.68	28
	C	1.87	2.56			1.73	2.49		
cf	2	1.73	2.12	0.16	27	1.07	2.25	0.77	28
	C	1.87	2.56			1.73	2.49		
cf	3	1.33	1.95	0.64	26	1.07	2.60	0.72	28
	C	1.87	2.56			1.73	2.49		
cf	5	0.93	1.98	1.12	26	1.73	3.10	0.00	27
	C	1.87	2.56			1.73	2.49		
cf	6	1.47	1.41	0.53	22	0.80	1.66	1.21	24
	C	1.87	2.56			1.73	2.49		

N = 15 for each group.

HYPOTHESIS 6.

Second year junior children (Group 7) and fourth year junior children (Group 8) acting as paired reading tutors to second year juniors (Groups 5 and 6 respectively) will make greater reading progress in terms of their reading quotient (as measured by the Edinburgh Reading Test Stages 2 and 3) than a control (i.e.non-treatment) group C over a nine week intervention period.

This hypothesis was not supported. Reference to Table 28 shows that neither of these comparisons is statistically significant using a one-tailed independent "t" test.

TABLE 28.

't' TEST DATA: ERT STAGES 2 AND 3 COMPARATIVE MEANS AND SD'S FOR TIME 2-1 BETWEEN THE CONTROL GROUP AND CHILD TUTORS (GROUPS 7 AND 8)

	GROUP	MEAN	SD	"t"	df
cf	7	4.87	7.25	0.45	26
	C	5.93	5.48		

EDINBURGH READING TEST STAGE 3 RQ

	GROUP	MEAN	SD	"t"	df
cf	8	3.20	3.12	1.68	22
	C	5.93	5.48		

N = 15 for each group

HYPOTHESIS 7.

Second year junior children who are reflective (as measured by the Matching Familiar Figure Test) will show greater reading progress in terms of their reading quotient and sub-tests A to F (as measured by the Edinburgh Reading Test Stage 2) than impulsive children (as measured by the Matching Familiar Figure Test) who have received similar tutoring over a nine week test period.

Using the scoring technique devised by Salkind (1978) and the original method of Kagan et al (1966) - referred to above - 31 reflective children and 35 impulsive children were identified using the data from the Matching Familiar Figure Test. As explained elsewhere, chapter 7.4., Salkind's scoring technique provides an impulsivity quotient. A zero quotient indicates a neutral "position", a negative quotient is indicative of reflectivity and a positive quotient of impulsivity. To make the measurement more rigorous the cut-off point for the purpose of this study was made at <-0.50 for reflectives and >+0.50 for impulsives thus only children who evinced marked evidence of either tempo were "labelled".

The hypothesis was examined using a one-tailed independent "t" test (see Tables 29 to 32). The hypothesis was supported in terms of the reading quotient and sub-tests as shown below. The difference between the Edinburgh Reading Test Stage 2 reading quotient scores for Times 1 and 3 for reflective and impulsive children was statistically significant ('t' = 2.61; df = 64; p = <0.01).

At Time 3 the differences between impulsive and reflective children in terms of the reading quotient and the sub-tests were statistically significant:

(a) the reading quotient ('t' = 2.14; df = 63; $p<0.05$),

(b) sub-test A (vocabulary) ('t' = 1.84; df = 64; $p<0.05$),

(c) sub-test B (comprehension of sequences) ('t' = 2.18; df = 63; $p<0.05$),

(d) sub-test C (retention of significant details) ('t' = 1.67; df = 61; $p<0.05$) and

(e) sub-test F (comprehension of essential ideas) ('t' = 1.68; df = 62; $p<0.05$).

Progress between Time 1 and Time 3 (1 year later) in terms of sub-test C (retention of significant details) was statistically significant ('t' = 2.99; df = 64; $p<0.01$).

TABLE 29.

't' TEST DATA: ERT STAGE 2 RQ COMPARATIVE MEANS AND SD'S FOR TIMES 1, 2, 3, 2-1 and 3-1 BETWEEN REFLECTIVE AND IMPULSIVE CHILDREN AS MEASURED BY THE MFFT

TIME		MFFT	MEAN	SD	"t"	df
1	cf	Ref:	104.3	12.7	0.94	63
		Imp:	101.3	12.7		
2	cf	Ref:	111.5	14.5	1.40	59
		Imp:	106.9	12.5		
3	cf	Ref:	114.7	14.5	2.14*	63
		Imp:	107.2	14.1		
2-1	cf	Ref:	7.26	5.75	1.20	64
		Imp:	5.51	6.09		
3-1	cf	Ref:	10.42	6.80	2.61**	64
		Imp:	5.83	7.51		

Ref: = Reflective: Imp: = Impulsive.

* $p<0.05$; ** $p<0.01$ (one-tail)

TABLE 30.

't'TEST DATA: ERT STAGE 2 SUBTESTS A AND B COMPARATIVE MEANS AND SD'S FOR TIMES 1, 2, 3, 2-1 AND 3-1 BETWEEN REFLECTIVE AND IMPULSIVE CHILDREN AS MEASURED BY THE MFFT

			SUB-TEST A				SUBTEST B			
TIME			MEAN	SD	"t"	df	MEAN	SD	"t"	df
1	cf	Ref:	8.42	2.84	0.93	52	8.74	3.26	1.57	59
		Imp:	7.86	1.96			7.57	2.73		
2	cf	Ref:	9.32	2.59	1.20	60	9.39	3.07	0.49	55
		Imp:	8.60	2.26			9.06	2.30		
3	cf	Ref:	10.42	2.43	1.84*	64	11.19	2.89	2.18*	63
		Imp:	9.23	2.82			9.63	2.94		
2-1	cf	Ref:	0.90	1.54	0.38	64	0.65	2.15	1.52	64
		Imp:	0.74	1.88			1.49	2.34		
3-1	cf	Ref:	2.00	2.31	1.27	52	2.45	2.51	0.63	63
		Imp:	1.37	1.59			2.06	2.54		

Ref: = Reflectives: N = 31. Imp: = Impulsives: N = 35.

* $p<0.05$ (one-tail)

TABLE 31.

't' TEST DATA: ERT STAGE 2 SUBTESTS C AND D COMPARATIVE MEANS AND SD'S FORTIMES 1, 2, 3, 2-1 and 3-1 BETWEEN REFLECTIVE AND IMPULSIVE CHILDREN AS MEASURED BY THE MFFT

			SUB-TEST C				SUB-TEST D			
TIME			MEAN	SD	"t"	df	MEAN	SD	"t"	df
1	cf	Ref:	7.26	2.11	0.99	59	8.16	2.86	1.15	64
		Imp:	7.91	3.23			7.29	3.33		
2	cf	Ref:	9.65	3.20	0.48	60	9,65	2.89	1.60	61
		Imp:	9.29	2.83			8.54	2.66		
3	cf	Ref:	11.26	3.26	1.67*	61	10.94	2.85	1.39	62
		Imp:	9.97	2.97			9.97	2.76		
2-1	cf	Ref:	2.39	2.09	1.94*	63	1.48	2.00	0.45	64
		Imp:	1.37	2.16			1.26	2.12		
3-1	cf	Ref:	4.00	2.48	2.99**	64	2.77	2.51	0.15	61
		Imp:	2.06	2.81			2.69	2.32		

Ref: = Reflectives; N = 31. Imp: = Impulsives; N = 35.

* p<0.05: ** p<0.01 (one-tail)

TABLE 32.

't' TEST DATA: ERT STAGE 2 SUBTESTS E AND F COMPARATIVE MEANS AND SD'S FORTIMES 1, 2, 3, 2-1 and 3-1 BETWEEN REFLECTIVE AND IMPULSIVE CHILDREN AS MEASURED BY THE MFFT

			SUB-TEST E				SUB-TEST F			
TIME			MEAN	SD	"t"	df	MEAN	SD	"t"	df
1	cf	Ref:	6.87	2.31	0.90	64	7.90	3.05	0.71	64
		Imp:	7.40	2.46			7.34	3.38		
2	cf	Ref:	8.94	2.28	0.29	64	9.32	3.66	0.88	58
		Imp:	9.11	2.78			8.60	2.94		
3	cf	Ref:	9.71	2.51	0.48	64	10.42	2.69	1.68*	62
		Imp:	10.03	2.93			9.34	2.50		
2-1	cf	Ref:	2.06	1.59	0.74	61	1.42	2.38	0.27	64
		Imp:	1.71	2.23			1.26	2.57		
3-1	cf	Ref:	2.84	1.98	0.38	63	2.52	2.47	0.76	64
		Imp:	2.63	2.56			2.00	3.03		

Ref: = Reflectives; N = 31. Imp: = Impulsives; N = 35.

* $p<0.05$ (one-tail)

HYPOTHESIS 8.

Second year junior children who are public library members and who are involved in the paired reading intervention groups will achieve a significantly better reading performance in terms of their reading quotient (as measured by the Edinburgh Reading Test Stage 2) than those second year children who are not members of the public library who have received similar tutoring.

The hypothesis was supported. At Times 1, 2 and 3 Table 33 shows that the difference between the reading quotients using a one-tailed "t" test for independent data samples was statistically significant ('t' = 2.64; df = 41; $p<0.01$, 't' = 3.03; df = 45; $p<0.01$ and 't' = 2.13; df = 49; $p<0.05$ respectively).

HYPOTHESIS 9.

Second year junior children who have a positive attitude towards reading (as measured by the Dundee Attitude to Reading Test ATR2 Global) will achieve a significantly better reading performance in terms of their reading quotient (as measured by the Edinburgh Reading Test Stage 2) than those who have a negative attitude towards reading.

The hypothesis was supported. Table 34 gives the difference between the reading progress of children who have a positive attitude towards reading and those who have a negative attitude. These two categories were obtained by subsuming Ewing and Johnstone's four categories as follows: "low negatives" and "moderates" under -ve attitude to reading and "high normals" and "high positives" under +ve

attitude to reading. For Times 1, 2 and 3 this difference is statistically significant ('t' = 3.58; df = 42; $p<0.001$, 't' = 3.49; df = 45; $p<0.001$) and 't' = 6.12; df = 45; $p<0.001$ respectively).

Using a one-way analysis of variance Table 35 augments the information on Table 34 by using each of the four Ewing and Johnstone categories to differentiate the raw data. At Times 1, 2 and 3 the difference between the means is statistically significant ($F = 6.27$; df = 3, 101; $p<0.001$, $F = 5.76$; df = 3, 101; $p<0.01$ and $F = 13.39$; df = 3, 101; $p<0.001$ respectively).

Table 36 shows the Pearson product moment correlation coefficient between the Edinburgh Reading Test Stage 2 and the Dundee Attitude to Reading Test ATR2 Global at the times indicated. The correlations at Times 1, 2 and 3 are statistically significant at $p<0.001$.

The compilers of the DART included two questions to act as "lie-detectors": Question 6 "If I got the chance I would spend a lot of my spare time reading." and Question 14 "People who spend a lot of their spare time reading miss a lot of fun." When responses to these questions were correlated at Time 1, $r = 0.500$ with a probability <0.001 and at Time 3, $r = 0.291$ with a probability of $p<0.01$. This compares with a figure of -0.3805 provided by the test compilers with a sample of 2,593 pupils.)

TABLE 33.

't' TEST DATA: ERT STAGE 2 RQ COMPARATIVE MEANS AND SD'S FOR TIMES 1, 2, 3, 2-1 and 3-1 BETWEEN LIBRARY/NON-LIBRARY MEMBERS

TIME	LIBRARY	N	MEAN	SD	"t"	df
			ERT >>>>			
1	Member	79	104.8	12.4	2.64**	41
	non-Member	26	97.0	13.2		
2	Member	79	111.1	12.7	3.03**	45
	non-Member	26	102.8	11.9		
3	Member	79	111.4	14.5	2.13*	49
	non-Member	26	105.2	12.4		
2-1	Member	79	6.30	5.67	0.34	35
	non-Member	26	5.77	7.31		
3-1	Member	79	6.59	7.45	0.81	37
	non-Member	26	8.15	8.81		

** p<0.01; * p<0.05 (one-tail)

TABLE 34.

't' TEST DATA: ERT STAGE 2 RQ COMPARATIVE MEANS AND SD'S FOR TIMES 1, 2, 3, 2-1 and 3-1 BETWEEN CHILDREN WITH A -VE ATTITUDE TO READING AND CHILDREN WQITH A +VE ATTITUDE TO READING AS MEASURED BY THE DART

TIME	DUNDEE ATTITUDE TEST CATEGORY	N	MEAN ERT >>>>>	SD	"t"	df
1	-ve	30	95.2	14.8	3.58***	42
	+ve	75	105.9	10.9		
2	-ve	30	101.8	14.0	3.49***	45
	+ve	75	111.9	11.5		
3	-ve	24	97.3	11.0	6.12***	43
	+ve	81	113.5	12.9		
2-1	-ve	30	6.60	7.42	0.40	42
	+ve	75	6.00	5.51		
3-1	-ve	24	6.12	6.96	0.66	43
	+ve	81	7.23	8.05		

*** p<0.001 (one-tail).

TABLE 35.

ONE-WAY ANALYSIS OF VARIANCE: ERT STAGE 2 RQ MEANS AND SD'S FOR TIMES 1, 2 AND 3 FOR DART ATTITUDE TO READING CATEGORIES

TIME	DUNDEE READING ATTITUDE CATEGORIES	N	MEAN ERT >>>>>	SD	F	df
	1	11	92.18	10.39		
1	2	19	97.00	16.81	6.27***	3,101
	3	20	103.50	10.79		
	4	55	106.76	10.89		
	1	11	99.73	10.23		
2	2	19	103.05	15.95	5.76**	3,101
	3	20	108.45	9.62		
	4	55	113.15	11.89		
	1	11	100.18	11.72		
3	2	13	94.85	10.10	13.39***	3,101
	3	38	110.03	13.14		
	4	43	116.65	11.91		

** P<0.01; *** P <0.001

TABLE 36.

PEARSON PRODUCT MOMENT CORRELATION COEFFICIENTS FOR TIMES 1 AND 3 FOR THE DART QUOTIENT AND TIMES 1, 2 AND 3 FOR THE ERT STAGE 2 RQ

DUNDEE ATTITUDE TO READING TEST	EDINBURGH READING TEST STAGE 2 RQ		
	TIME 1	TIME 2	TIME 3
TIME 1	0.394***	0.405***	--
TIME 3	--	--	0.523***

*** P<0.001 N = 105

HYPOTHESIS 10.

Second year junior children who have a positive attitude towards school (as measured by the Dundee Attitude to Reading Test ATR2 Global) will achieve a significantly better reading performance (as measured by the Edinburgh Reading Test Stage 2) in terms of their reading quotient than those who have a negative attitude towards school.

The hypothesis is supported. Table 37 shows that the difference between the means of the two groups is statistically significant using a one-tailed independent "t" test at Times 2 and 3 ('t' = 1.99; df = 27; p<0.05 and 't' = 4.19; df = 21; p<0.001); also for the difference between the increase in the ERT Stage 2 reading quotient means between Times 1 and 3 ('t' = 2.35; df = 19; p<0.05) The attitude to school scale uses five categories: the two lower categories "dislike very much" and "dislike" have been subsumed under -ve and the two higher categories "like very

much" and "like" under +ve: the neutral category has been omitted.

Using a one-way analysis of variance Table 38 augments the information in Table 37 using the five categories: 1 = dislike very much; 2 = dislike; 3 = neither like or dislike; 4 = like and 5 = like very much. At Times 1 and 2 the differences were non-significant but at Time 3 the mean differences are statistically significant ($F = 3.44$; $df = 4,100$; $p<0.05$).

TABLE 37.

't' TEST DATA: ERT STAGE 2 RQ COMPARATIVE MEANS AND SD'S FOR TIMES 1, 2, 3, 2-1 AND 3-1 BETWEEN CHILDREN WITH A -VE ATTITUDE TO SCHOOL AND THOSE WITH A +VE ATTITUDE TO SCHOOL AS MEASURED BY THE DART

TIME	DUNDEE ATTITUDE TO SCHOOL GROUP	N	MEAN ERT >>>>>	SD	"t"	df
1	-ve	19	100.3	13.3	1.49	26
	+ve	65	105.3	11.5		
2	-ve	19	104.5	13.5	1.99*	27
	+ve	65	111.3	12.1		
3	-ve	12	98.8	9.4	4.19***	21
	+ve	64	112.2	13.6		
2-1	-ve	19	4.2	5.6	1.24	31
	+ve	65	6.0	5.9		
3-1	-ve	12	2.6	6.1	2.35*	19
	+ve	64	7.3	8.0		

*** p<0.001; * p<0.05 (one-tail).

TABLE 38.

ONE-WAY ANALYSIS OF VARIANCE : ERT STAGE 2 RQ MEANS AND SD'S FOR TIMES 1, 2 AND 3 FOR DART ATTITUDE TO SCHOOL CATEGORIES AS MEASURED BY THE DART

TIME	DUNDEE ATTITUDE TO SCHOOL CATEGORIES	N	MEAN ERT >>>>	SD	F	df
	1	11	102.36	13.30		
	2	8	97.37	13.64		
1	3	21	97.62	15.41	1.99	4,100
	4	22	106.91	12.03		
	5	43	104.47	11.33		
	1	11	106.36	15.85		
	2	8	101.87	9.99		
2	3	21	106.00	14.20	1.76	4,100
	4	22	113.32	12.54		
	5	43	110.30	11.83		
	1	7	99.86	10.70		
	2	5	97.40	8.11		
3	3	29	109.10	15.26	3.44*	4,100
	4	21	107.57	14.70		
	5	43	114.49	12.51		

* P<0.05.

HYPOTHESIS 11.

Second year junior children who have a high estimate of their own ability (as measured by the Dundee Attitude to Reading Test ATR2 Global) will achieve a significantly better reading performance in terms of their reading quotient (as measured by the Edinburgh Reading Test Stage 2) than those who have a low estimate of their own ability.

The hypothesis is supported. Table 39 shows that the difference between the means of the two groups is statistically significant using a one-tailed independent "t" test at Times 1, 2 and 3 ('t' = 7.85; df = 17; $p<0.001$, 't' = 10.79; df = 26; $p<0.001$ and 't' = 8.31; df = 10; $p<0.001$ respectively). The table subsumes "one of the least clever pupils" and "not very clever" under -ve and "fairly clever" and "one of the cleverest pupils" under +ve. The "average" category is omitted.

Using a one-way analysis of variance Table 40 augments the information in Table 39 and uses the five categories quoted in the previous paragraph. At Times 1, 2 and 3 the difference between the means is statistically significant ($F = 12.49$; df = 4,100; $p<0.001$, $F = 14.71$; df = 4,100; $p<0.001$ and $F = 13.95$; df = 3,100; $p<0.001$ respectively).

The data provided in Table 40, whilst showing some anomalies which might be expected from a more precise breakdown, does show, in particular at Time 3, that there is a remarkable progression in terms of reading quotient from

Group 2 to Group 5 ("not very clever" to "one of the cleverest pupils" respectively) in steps of ten points. A comparison of the percentages of children falling within the five categories of "estimate of own ability" shows that the profile is similar for Ewing and Johnstone's validation data and for the data yielded by this present study at Times 1 and 3 (see Table 56).

TABLE 39.

't' TEST DATA: ERT STAGE 2 RQ COMPARATIVE MEANS AND SD'S FOR TIMES 1, 2, 3, 2-1 and 3-1 BETWEEN CHILDREN WITH A -VE ESTIMATE OF THEIR OWN ABILITY AND THOSE WITH A +VE ESTIMATE AS MEASURED BY THE DART

TIME	DUNDEE ESTIMATE OF OWN ABILITY	N	MEAN ERT >>>>>	SD	"t"	df
1	-ve	12	87.50	8.80	7.85***	17
	+ve	50	109.70	8.79		
2	-ve	12	91.75	6.09	10.79***	26
	+ve	50	115.76	9.63		
3	-ve	6	92.33	5.75	8.31***	10
	+ve	63	115.60	12.20		
2-1	-ve	12	4.25	5.75	0.95	19
	+ve	50	6.06	6.63		
3-1	-ve	6	11.17	7.08	1.00	6
	+ve	63	8.13	7.12		

*** $p<0.001$ (one-way).

TABLE 40.

ONE-WAY ANLYSIS OF VARIANCE: ERT STAGE 2 RQ MEANS AND SD'S FOR TIMES 1, 2 AND 3 FOR DART ESTIMATE OF OWN ABILITY CATEGORIES

TIME	DUNDEE ESTIMATE OF OWN ABILITY GP.	N	MEAN ERT >>>>>>	SD	F	df
	1	4	90.75	9.00		
	2	8	85.88	8.82		
1	3	43	99.16	13.05	12.49***	4,100
	4	40	110.03	9.37		
	5	10	108.40	6.11		
	1	4	95.50	4.12		
	2	8	89.87	6.24		
2	3	43	106.00	12.33	14.71***	4,100
	4	40	116.72	10.06		
	5	10	111.90	6.81		
	1	0	--	--		
	2	6	92.33	5.75		
3	3	35	102.69	12.97	13.95***	3,100
	4	58	114.88	12.02		
	5	5	124.20	11.63		

*** P<0.001

HYPOTHESIS 12.

Second year junior children who participated in the paired reading study either as pupils or tutors and who had a negative or moderate attitude to reading before the paired reading intervention (as measured by the Dundee Attitude to Reading Test ATR2 Global) will show a significant improvement in their attitude to reading quotient after intervention.

The hypothesis is supported. A "t" test for paired data shows that after the paired reading intervention there was a statistically significant improvement in the attitude to reading of second year junior children who participated in the paired reading study and who showed a negative or moderate attitude to reading before treatment ('t' = 3.90; $p<0.001$) (see Table 41).

TABLE 41.

't' TEST DATA: DART MEANS AND SD'S FOR TIMES 3-1 FOR CHILDREN WITH A -VE OR MODERATE ATTITUDE TO READING AND FOR ALL SUBJECTS RESPECTIVELY

TIME	ATR2 GLOBAL QUOTIENT.			
3-1	N	X	SD	t
(-ve or mod: attitude)	30	6.63	9.32	3.90***
3-1				
ALL SUBJECTS	105	-1.705	10.62	1.65

*** $p<0.001$

HYPOTHESIS 13.

That any significant effect in terms of the difference between the reading quotient means at Times 1 and 2 will be maintained after the lapse of nine months from the cessation of treatment (as measured by the Edinburgh Reading Test Stage 2).

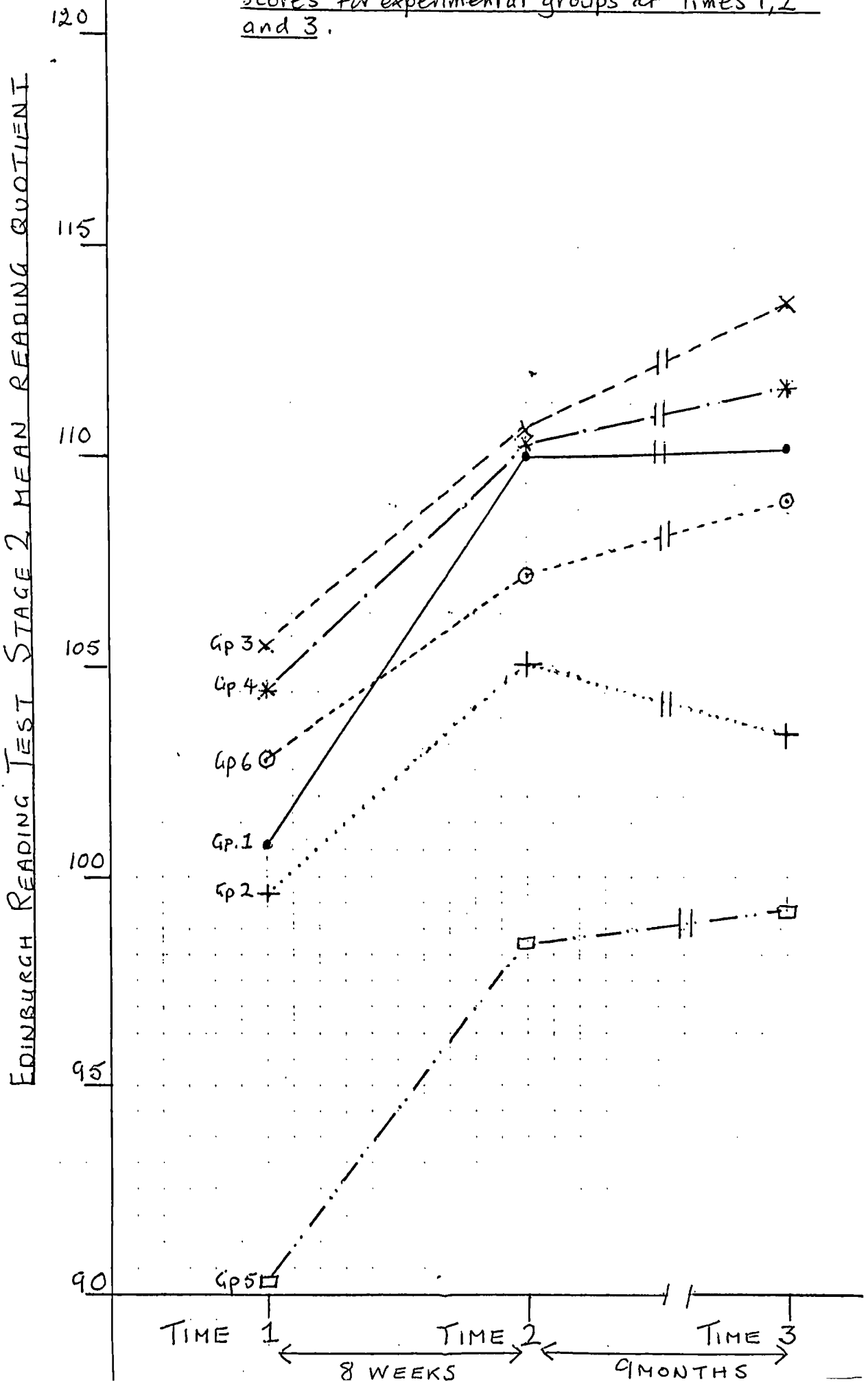
This hypothesis is not supported. Tables 9 and 11 show the comparison between the reading quotient differences between Times 1 and 2 and between Times 2 and 3. The same data are presented in graphical form in Figure 3 It will be noted from these tables that all the mean differences between Times 1 and 2 are statistically significant but those between Times 2 and 3 are not.

Topping's analysis of paired reading studies (Topping 1985a, 1986a and 1987b) uses the graphic but crude method of measuring reading progress in terms of "tnp" (one year's reading progress per one chronological year)(see Chapter 3.7.iii). To enable a comparison to be made, the "tnp" reading gains have been calculated for Upstead P from September 1985 to January 1987 for the 52 children for whom test data were available. Comparative data is not available for Browning C. Reading tests used were as follows: Kent Reading Test in September 1985 and NFER Test "A" in May 1986 for the 52 Upstead P children; Edinburgh Reading Test Stage 2 in January and April 1987 and January 1988 for all children. The rate of progress for this period is 1.0 'tnp' approximately. This progress can function as baseline data for the subsequent progress of children from both schools.

For January 1987 for Time 1, April 1987 for Time 2 and January 1988 for Time 3 during the duration of the study "tnp" data are provided for the seven groups of second year children participating in the study (see Table 42). An examination of Tables 20B and 24B shows that the differences in RQ between Times 1 and 3 in similar comparative terms from Hypotheses 1 to 5 (i.e in terms of experimental group and control) tend to become less pronounced. The only remaining difference of statistical significance is that between Groups 1 and 2 (classical paired reading compared with simultaneous reading) ($p<0.05$).

FIGURE 3

Graph showing ERT mean reading quotient scores for experimental groups at Times 1, 2 and 3.



8.3. ADDITIONAL DATA

8.3.i. Delayed and proficient readers compared

Table 43 shows that if subjects are divided into two groups, those having a reading quotient equal to or <90 and those >90 at Time 1 certain characteristics are apparent. Using a one-tailed independent "t" test Table 43 shows that the difference between the mean reading quotient at Times 1, 2 and 3 for these two groups is statistically significant ('t' = 11.25; df = 25; $p<0.001$, 't' = 10.18; df = 52; $p<0.001$ and 't' = 6.79; df = 38; $p<0.001$ respectively). The difference between the progress of the two groups between Times 1 and 3 is also statistically significant ('t' = 1.84; df = 25; $p<0.05$). Figure 4 presents this information graphically.

TABLE 43

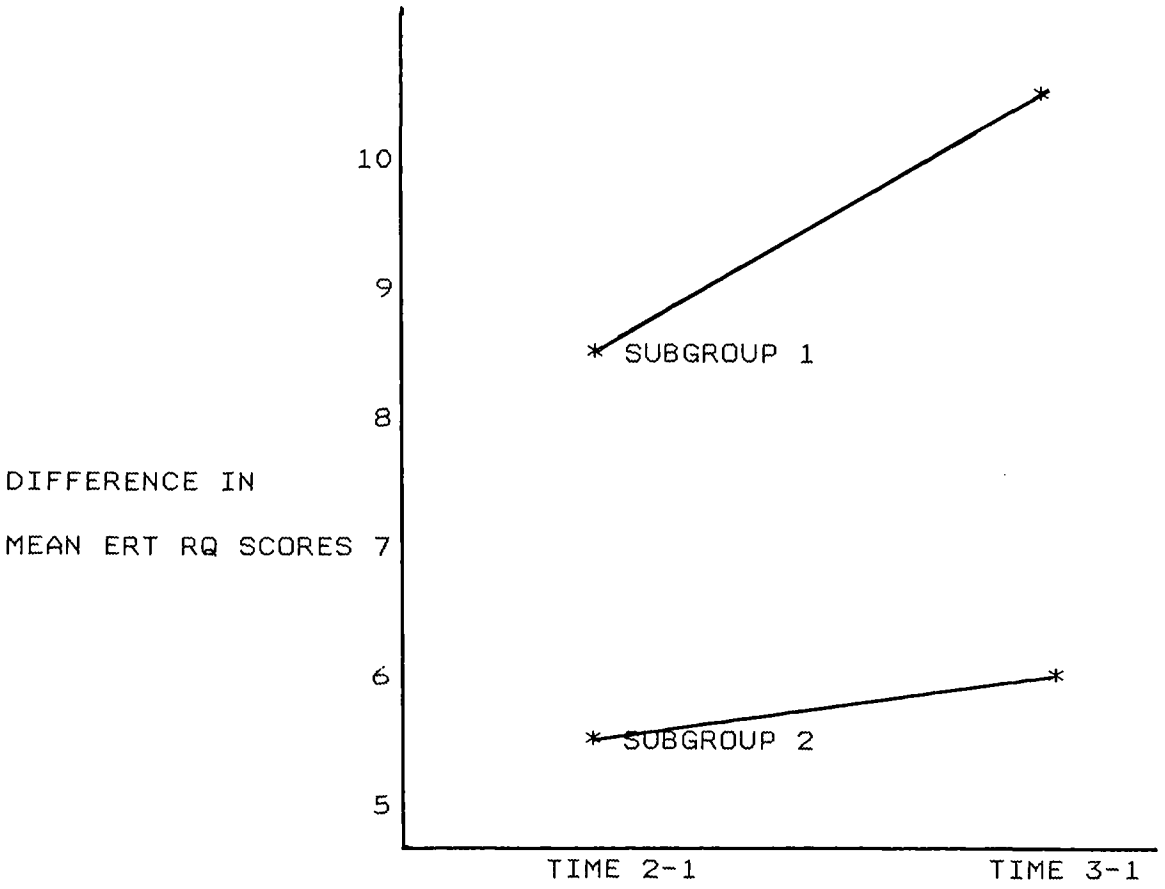
't' TEST DATA: DIFFERENCE IN MEAN RQ'S FOR TIMES 1, 2, 3, 2-1, 3-1 AND 3-2 BETWEEN CHILDREN WITH AN INITIAL (T1) RQ EQUAL TO OR <90 AND THOSE WITH AN INITIAL (T1) RQ >90

TIME	RQ SUB-GROUPS	N	MEAN	SD	't'	df
1	EQUAL TO OR <90	18	82.72	6.69	11.25***	25
	>90	57	105.18	9.93		
2	EQUAL TO OR <90	18	91.06	5.90	10.18***	52
	>90	57	111.07	10.49		
3	EQUAL TO OR <90	18	93.06	9.13	6.79***	38
	>90	57	111.32	12.18		
2-1	EQUAL TO OR >90	18	8.33	6.51	1.42	26
	>90	57	5.89	5.77		
3-1	EQUAL TO OR <90	18	10.33	8.74	1.84*	25
	>90	57	6.14	7.30		
3-2	EQUAL TO OR <90	18	2.00	7.50	0.88	26
	>90	57	0.25	6.82		

* P<0.05; *** P<0.001 (one-tail)

FIGURE 4

DIFFERENCE IN MEAN ERT RQ BETWEEN CHILDREN WITH AN INITIAL (T1) RQ EQUAL TO OR <90 (SUB-GROUP 1) AND THOSE WITH AN INITIAL RQ >90 (SUB-GROUP 2) FOR TIMES 2-1 AND TIMES 3-1



NB SUB-GROUP 1: Children who scored equal to or <90 RQ on the ERT Stage 2 at Time 1.

SUB-GROUP 2: Children who scored >90 RQ on the ERT Stage 2 at Time 1.

Using a one-tailed "t" test for independent Table 44 shows that subjects with a reading quotient equal to or <100 were significantly more impulsive at Times 1, 2 and 3 than subjects with a reading quotient >100 (the higher the mean I score the greater the degree of impulsivity) ('t' = 1.79: df = 70; $p<0.05$, 't' = 1.91; df = 38; $p<0.05$ and 't' = 2.22; df = 45; $p<0.05$ respectively). It is submitted that the evidence from Table 44 complements the evidence from Table 29. Table 44 shows that there is a strong tendency for the less successful readers to be more impulsive. It should be borne in mind that the mean impulsivity quotient for children with a reading quotient >100 of -0.01, 0.03 and -0.02 for Times 1, 2 and 3 respectively is a "neutral" position between impulsivity and reflectivity and that the mean impulsivity quotients of 0.49, 0.65 and 0.66 for Times 1, 2 and 3 respectively for children with a reading quotient equal to or <100 represent a marked degree of impulsivity.

The decision to "split" the reading quotient scores at 100 in this case to provide two groups, those children with a RQ equal to or <100 and those with an RQ >100 was not arbitrary. It was evident from the raw data that this "split" would portray a dramatic difference in the impulsivity quotient of the two groups in preference to making the "split" at an RQ of 90. Whilst a "split" at an RQ of 90 would have brought it into line with "splits" for the other data the contrast in the resulting impulsivity score would have given a false impression.

Using a one-tailed "t" test for independent data Table 45 shows that subjects with a reading quotient equal to or <70 had a significantly poorer attitude to reading at Times 1 and 3 than subjects who had a reading quotient >90 ('t' = 2.98; df = 33; $p<0.01$ and 't' = 5.86; df = 22; $p<0.001$ respectively).

Using a chi-square test, Tables 46 and 47 show that there is strong evidence that the distribution of attitudes to school among children whose reading quotient is equal to or <90 is different from that of children whose reading quotient is >90 at both times 1 and 3 (χ^2 = 20.80; df = 2; $p<0.001$ and χ^2 = 18.30; df = 2; $p<0.001$ respectively). (It should be noted that in some cells the totals are less than 5 which might affect the accuracy of Chi-square calculations.)

The data in Tables 48 and 49 however show that there is no evidence that the distribution of self-assessment estimates of ability among children whose reading quotient is equal to or <90 is different from that of children whose reading quotient is >90 at both Times 1 and 3. Tables 48 and 49 also supplement the data provided by Table 39. Whilst the conclusion from Table 39 accurately emphasises the tendency for children with a low estimate of their own ability to have a reading quotient substantially lower than children with a high estimate of their own ability, Tables 48 and 49 show that, in spite of this, 8/12 children at Time 1 and 9/11 children at Time 3 who regarded themselves "not clever" had a reading quotient equal to or >90. Correspondingly 8/44 children at Time 1 and 4/42

children at Time 3 who regarded themselves as "clever" had a reading quotient <90. This may reflect Ewing and Johnstone's comment on the basis of the DART development that primary age children tend either to have an unrealistically high self-concept of their own ability or want to make a favourable impression.

Ewing and Johnstone do not comment on any relationship they may have discovered between a negative attitude to reading and attitude to school or assessment of own ability where the negative end of the scales is concerned. In the present study of the 13 children who disliked school at Time 1 only three also had a negative attitude to reading and at Time 3 of the six children who disliked school only two also had a negative attitude to reading.

TABLE 44.

't' TEST DATA: MFFT COMPARATIVE MEANS AND SD'S OF SALKIND'S IMPULSIVITY QUOTIENT FOR CHILDREN MEASURED WITH ERT RQ'S EQUAL TO OR <100 AND THOSE WITH RQ'S >100 FOR TIMES 1, 2 AND 3

	ERT STAGE 2 RQ	MATCHING FAMILIAR FIGURE TEST				
TIME	"SPLIT"	N	MEAN	SD	't'	df
1	EQUAL TO OR <100	37	0.49	1.33	1.79*	70
	>100	38	-0.01	1.09		
2	EQUAL TO OR <100	25	0.65	1.43	1.91*	38
	>100	50	0.03	1.08		
3	EQUAL TO OR <100	28	0.66	1.41	2.22*	45
	>100	47	-0.02	1.04		

* P = <0.05 (one-tail)

TABLE 45.

't' TEST DATA: DART COMPARATIVE MEANS AND SD'S OF CHILDREN MEASURED WITH ERT STAGE 2 RQ'S EQUAL TO OR <90 AND RQ'S >90 FOR TIMES 1 AND 3

ERT STAGE 2 RQ		DUNDEE ATTITUDE TO READING TEST				
TIME	"SPLIT"	N	MEAN	SD	't'	df
1	EQUAL TO OR <90	18	61.0	9.63	2.98**	33
	>90	57	69.1	11.10		
3	EQUAL TO OR <90	9	55.0	4.74	5.86***	22
	>90	66	67.1	10.90		

*** P<0.001; ** P<0.01 (one-tail).

TABLE 46.

A CHI-SQUARE TABLE COMPARING CHILDREN WITH AN ERT STAGE 2 RQ EQUAL TO OR <90 AND THOSE WITH A RQ >90 WITH DART ATTITUDE TO SCHOOL CATEGORIES FOR TIME 1

	ERT RQ EQUAL TO OR <90	ERT RQ >90	TOTALS
DISLIKE SCHOOL	6 2.2	3 6.8	9
NEUTRAL	12 8.4	23 26.6	35
LIKE SCHOOL	0 7.4	31 23.6	31
TOTALS	18	57	75

$\chi^2 = 20.80$; df = 2; $p<0.001$ Expected counts are printed below observed counts.

TABLE 47

A CHI-SQUARE TABLE COMPARING CHILDREN WITH AN ERT STAGE 2 RQ EQUAL TO OR <90 AND THOSE WITH A RQ >90 WITH DART ATTITUDE TO SCHOOL CATEGORIES FOR TIME 3

	ERT RQ EQUAL TO OR <90	ERT RQ >90	TOTALS
DISLIKE SCHOOL	3 0.5	1 3.5	4
NEUTRAL	5 4.1	29 29.9	34
LIKE SCHOOL	1 4.4	36 32.6	37
TOTALS	9	66	75

χ^2 = 18.30; df = 2; P<0.001 Expected counts are printed below observed counts.

TABLE 48

A CHI-SQUARE TABLE COMPARING CHILDREN WITH AN ERT STAGE 2 RQ EQUAL TO OR <90 AND THOSE WITH A RQ >90 WITH DART ESTIMATE OF OWN ABILITY FOR TIME 1

	ERT RQ EQUAL TO OR <90	ERT RQ >90	TOTALS
NOT CLEVER	4 2.9	8 9.1	12
NEUTRAL	6 4.6	13 14.4	19
CLEVER	8 10.6	36 33.4	44
TOTAL	18	57	75

$\chi^2 = 1.99$; df = 2; ns. Expected counts are printed below observed counts.

TABLE 49

A CHI-SQUARE TABLE COMPARING CHILDREN WITH AN ERT STAGE 2 RQ EQUAL TO OR <90 AND THOSE WITH A RQ >90 WITH DART ESTIMATE OF OWN ABILITY FOR TIME 3

	ERT RQ EQUAL TO OR <90	ERT RQ >90	TOTAL
NOT CLEVER	2 1.3	9 9.7	11
NEUTRAL	3 2.6	19 19.4	22
CLEVER	4 5.0	38 37.0	42
TOTAL	9	66	75

χ^2 = 0.70; df = 2; ns. Expected counts are printed below observed counts.

8.3.ii. The relationship between sex and test measures

Table 50 shows the relationship between sex and the Edinburgh Reading Test Stage 2. At Times 1 and 3 a "t" test for independent data shows that girls were significantly better readers than boys ('t' = 1.78; df = 102; $p<0.05$ and 't' = 1.82; df = 99; $p<0.05$) and for Time 2 the difference in RQ is only marginally less.

Table 51 shows the relationship between sex and the Dundee Attitude to Reading Test ATR2 Global. Using a "t"

test for independent data the mean scores at Times 1 and 3 show that the girls had a significantly more favourable attitude to reading ('t' = 2.68; df = 100; p<0.01 and 't' = 1.90; df = 96; p<0.05). This compares with a similar differential derived from the development of the Dundee (see Table 52).

TABLE 50

't' TEST DATA: ERT STAGE 2 COMPARATIVE MEANS AND SD'S BETWEEN BOYS AND GIRLS FOR TIMES 1, 2 AND 3

TIME	SEX	N	MEAN	SD	't'	df
1	BOYS	60	101.0	14.0	1.78*	102
	GIRLS	45	105.4	11.2		
2	BOYS	60	107.4	13.0	1.45	95
	GIRLS	45	111.1	12.8		
3	BOYS	60	107.7	14.6	1.82*	99
	GIRLS	45	112.7	13.3		

* P<0.05 (one-tail).

TABLE 51.

't' TEST DATA: DART COMPARATIVE MEANS AND SD'S BETWEEN BOYS AND GIRLS FOR TIMES 1 AND 3

TIME	SEX	N	MEAN	SD	't'	df
1	BOYS	60	66.80	11.5	2.68**	100
	GIRLS	45	72.60	10.3		
3	BOYS	60	65.90	10.8	1.90*	96
	GIRLS	45	69.90	10.5		

** P<0.01; * P<0.05 (one-tail).

TABLE 52,

DART COMPARATIVE MEANS AND SD'S DURING THE TEST DEVELOPMENT PERIOD (OBTAINED FROM EWING AND JOHNSTONE)

SEX	N	MEAN	sd
BOYS	724	63.6	11.0
GIRLS	766	67.0	10.8

Tables 53 and 54 show the relationship between sex pairings and the improvement in reading quotient and attitude to reading respectively for Browning C pupils over the duration of the paired reading intervention. Using a one-way analysis of variance neither of the results is statistically significant.

TABLE 53

ONE-WAY ANALYSIS OF VARIANCE DATA: ERT STAGE 2 MEANS AND SD'S FOR PUPIL/TUTOR DYADS FOR TIME 2-1

DYAD	N	MEAN	sd	F	df
BOY/BOY	8	9.00	9.01		
GIRL/GIRL	8	3.50	4.54	0.95	3,26
BOY/GIRL	10	6.20	5.75		
GIRL/BOY	4	6.50	5.80		

Tutor is designated first.

TABLE 54.

ONE-WAY ANALYSIS OF VARIANCE DATA: ERT STAGE 2 MEANS AND SD'S FOR PUPIL/TUTOR SEX DYADS FOR TIME 3-1

DYAD	N	MEAN	sd	F	df
BOY/BOY	8	4.62	9.36		
GIRL/GIRL	8	-1.62	11.43	1.46	3,26
BOY/GIRL	10	4.00	7.38		
GIRL/BOY	4	-4.50	6.61		

Tutor is designated first

8.3.iii. The DART and membership of a public library

Table 55 compares the Dundee Attitude to Reading Test ATR2 global quotient with membership/non-membership of a public library at Times 1 and 3. Using a "t" test for

independent data the difference between the mean scores at Times 1 and 3 respectively is statistically significant
('t' = 2.94; df = 38; p<0.01 and 't' = 2.50; df = 39; p<0.05).

TABLE 55.

't' TEST DATA: DART COMPARATIVE MEANS AND SD'S BETWEEN MEMBERS OF A PUBLIC LIBRARY AND NON-MEMBERS FOR TIMES 1 AND 3

TIME	LIBRARY	N	MEAN	sd	't'	df
1	Member	79	71.2	10.5	2.94**	38
	Non-member	26	63.5	12.0		
3	Member	79	69.2	10.2	2.50*	39
	Non-member	26	62.8	11.5		

** p<0.01; * p<0.05 (one-tail).

8.3.iv. Ewing and Johnston and the present study: a comparison

Tables 56, 57 and 58, pages compare the numbers of children during the Ewing and Johnstone validation studies and the numbers of children during the present study at Times 1 and 3 who fell within the Dundee Attitude to Reading categories and the categories of the subsidiary scales of Attitude to school and self-assessment.

TABLE 56.

A COMPARISON BETWEEN THE % OF CHILDREN FALLING WITHIN THE DART CATEGORIES DURING THE TEST DEVELOPMENT PERIOD AND DURING THE PRESENT STUDY FOR TIMES 1 AND 3

STUDY	TIME	<> LOW -VE:	<> MOD:	<> HIGH NORM:	<> HIGH +VE:
EWING AND JOHNSTONE	--	15%	20%	31%	35%
PRESENT STUDY	1	10.4%	18.1%	19.0%	52.4%
	3	10.4%	12.4%	36.2%	40.9%

TABLE 57.

A COMPARISON BETWEEN THE % OF CHILDREN FALLING WITHIN THE DART ESTIMATE OF OWN ABILITY CATEGORIES DURING THE TEST DEVELOPMENT PERIOD AND DURING THE PRESENT STUDY FOR TIMES 1 AND 3

STUDY	TIME	LEAST CLEVER	<>NOT VERY CLEVER	<>AVERAGE	<>FAIRLY CLEVER	<>ONE OF THE CLEVEREST
EWING AND JOHNSTONE	--	1.5%	13%	51%	30%	5.5%
PRESENT STUDY	1	3.8%	7.6%	40.9%	38%	9.5%
	3	0.0%	5.8%	33.6%	55.8%	4.8%

TABLE 58.

A COMPARISON BETWEEN THE % OF CHILDREN FALLING WITHIN THE DART ATTITUDE TO SCHOOL CATEGORIES DURING THE TEST DEVELOPMENT PERIOD AND DURING THE PRESENT STUDY FOR TIMES 1 AND 3

	TIME	<>DISLIKE VERY MUCH	<>DISLIKE	<>NEUTRAL	<>LIKE	<>LIKE VERY MUCH
EWING AND JOHNSTONE	--	5%	5%	16%	36%	38%
PRESENT STUDY	1	10.4%	7.6%	20%	21%	40.9%
	3	6.7%	4.8%	27.6%	20%	40.9%

8.4.QUALITATIVE DATA FOR UPSTEAD P

All 45 parents participating in the study returned signed forms of contract. The following basic facts also indicate the degree of co-operation received without which adequate analysis of this study would have been difficult:

(a) diaries returned at completion = 42/45,

(b) diaries returned weekly = 40/45,

(c) parents' questionnaires returned at completion of study = 44/45,

and (d) children's questionnaires returned at completion of study = 43/45.

Table 59 provides an analysis of the number of reading sessions over the nine week period and the frequency of sessions for the respective tutors. Whilst parents

predominated as tutors, siblings, aunts and uncles and grandparents also helped. The aim was to achieve an average of 48 sessions per child, that is 8 weeks times 6 sessions per week. It was necessary to extend the intervention period by one week to ensure that children who had missed reading through illness etc. could make up the deficit. The correlational analysis, Table 60 augments this information. It will be noted that none of the correlational coefficients between the Edinburgh Reading Test Stage 2 reading quotient and the mean frequency of sessions for each child is statistically significant.

Table 61 gives an analysis of the average length of session for the three parent tutored groups. It will be noted that no correlational analysis is provided for length of session because the times are tightly spread between 13 and 16 minutes.

All but one pairing timed their reading sessions for the evening and five out of the 45 pairings read after 8 p.m.

Table 62 provides an analysis of the number of visits and telephone calls made to homes. Only one family was not on the telephone and this family was covered by visiting instead. In addition six telephone calls were received from parents seeking information or advice between the hours of 6 p.m. and 7 p.m. on Monday and Friday evening, the time which had been notified. Each Friday p.m. was set aside to check the returned diaries and also to provide a "surgery" to advise on paired reading techniques and problems; two parents made regular use of this facility. It

was noticeable that slight deviations of technique tended to creep in or some lack of attention to detail which the researcher was able to correct. The feedback provided in terms of an "objective" comment on a child's progress also functioned as reinforcement.

TABLE 59.

AN ANALYSIS OF THE TOTAL NUMBER OF READING SESSIONS FOR GROUPS 1, 2 AND 3 AND THE AVERAGE FREQUENCY OF SESSIONS PER CHILD FOR PARENT TUTORED GROUPS

	NUMBER OF SESSIONS BY:				DATA SETS AVAILABLE	MEAN NO. SESSIONS PER CHILD
GROUP	MUM	DAD	OTHERS	TOTAL		
1	573	158	16	747	15/15	49.80
%	76.71	21.15	2.14	100		
2	489	144	25	658	14/15	47.00
%	74.32	21.88	3.80	100		
3	496	108	21	625	13/15	48.08
%	79.36	17.28	3.36	100		
ALL	1,558	410	62	2,030	42/45	48.33
%	76.75	20.20	3.05	100		

N = 15 for each group.

TABLE 60

PEARSON PRODUCT MOMENT CORRELATION COEFFICIENTS BETWEEN THE ERT STAGE 2 AND THE NUMBER OF READING SESSIONS PER CHILD FOR PARENT TUTORED GROUPS

	EDINBURGH READING TEST STAGE 2 RQ			
	TIME 1	TIME 2	TIME 3	TIME 2-1
NO.OF SESSIONS	0.027	0.064	0.009	0.092

TABLE 61.

ANALYSIS OF MEAN LENGTH OF SESSION FOR PARENT TUTORED GROUPS 1, 2 AND 3

GROUP	MEAN LENGTH OF SESSION.
1	14.7 mins.
2	15.3 "
3	15.5 "

TABLE 62.

ANALYSIS OF VISITS AND TELEPHONE CALLS FOR PARENT TUTORED GROUPS

*NUMBER OF VISITS (GROUP 1 ONLY).

4x	3x	2x	1x
12	2	0	1

*NUMBER OF TELEPHONE CALLS (GROUPS 2 AND 3 ONLY).

GROUP	4x	3x	2x	1x
2	2	12	1	0
3	0	14	1	0

* NB No. of visits and telephone calls made over the nine week intervention period.

Tables (see Appendices 24a to 24d) give responses to the following questionnaires:

(a) a structured parent questionnaire (Appendix 24a).

(b) a structured child questionnaire (Appendix 24b),

(c) a paired reading checklist compiled from visits (Appendix 24c) and

(d) an analysis of open-ended observations made by parents, teachers and children based on diaries and comments made during visits and telephone conversations (Appendix 24d) (Copies of questionnaires are also included in Appendices 11a, 11b and 12).

Many of the comments noted refer to parental tuition as a whole irrespective of treatment group. Where a response has something enlightening to say about a particular group this will be highlighted.

The initial meetings, the contracts whereby parents undertook to sustain the paired reading programme, the handbooks describing the technique, the diaries and supportive visits together with provision for "surgeries"; all contributed to a "successful" outcome to the project. It is important to note from conversations with parents that they welcomed the comparatively tightly structured approach which was partly triggered by their written commitment to persevere with paired reading. The degree of commitment to diaries, completion of questionnaires and regularity and consistency of length of sessions provide quantitative data

illustrating parental enthusiasm and co-operation (see Tables 59 to 62). The completion of diaries varied greatly in terms of type, length and quality of comment (a range of typical comments is provided at Appendix 19). In view of Pilling and Pringle's (1978) comment about the lack of studies looking at the father's role in the child's development compared with the mother it is interesting to note that fathers were responsible for 20% of the tutoring sessions. In the absence of comparable data this level of input from "dads" would appear to be encouraging. Unfortunately the number of fathers attending the initial explanatory meetings was not recorded but it was sufficiently high to give cause for comment from teaching staff. The overall take-up rate by parents matched the 60% take-up rate noted by Miller et al (1986). It should also be noted that three second year teachers, the headteacher and the teacher responsible for language development attended the two parents' meetings and refreshments were provided by the school secretary which must also be indicative of considerable enthusiasm within the school staff.

It is remarkable that at no time during the 60 visits to children's homes, approximately 120 telephone calls and other contacts was any problem encountered with lack of co-operation from parents. There were of course some critical comments but these were all good-natured and constructive. Whilst, in the odd case, a visit had to be cancelled or it may have been inconvenient, parents were without exception welcoming.

The technique of paired reading was regarded very favourably and it was deemed to be very easy to acquire (see Appendix 24a). It is clear however that 19/44 parents found difficulty in finding a regular reading time although in fact, almost without exception, regular sessions were maintained which is a creditable achievement under the circumstances. A point of concern noted by the researcher was the lateness of some of the reading sessions. Of the five children who regularly read after 8 p.m. two were on the visiting list and it was noted that they were visibly wilting though with no apparent effect on their overall performance.

The structured parental questionnaires showed that, in parents' opinion, paired reading had proved of considerable benefit to their children. The negative comments, as the footnote to Appendix 24a indicates, were made by parents of children using the simultaneous or independent modes. For these groups whilst interest and enjoyment, perhaps expressed in "lively reading" and "willingness to read", were less in evidence than in the paired reading group, "understanding of reading", "confidence" and "making fewer mistakes" were generally improved and compensated for some fall-off in enthusiasm.

Where the child questionnaire at Appendix 24b is concerned it is noteworthy that 36/42 children concluded that they were better at all kinds of reading and a similar proportion liked paired reading. To the question "Was it easy or hard to find time to read?" 19/43 found it hard which reflected their parents' comments. From response to

questionnaires given by the adults and children participating in the project (Appendix 24d) it can safely be assumed that paired reading is accepted more readily by parents and children than simultaneous or independent reading. The pattern of subjective judgements does match the relative progress made by the children within the three proups. For the paired reading group the mention of "fluency", "enjoyment", "improved expression" and "confidence" may reflect those factors which the responding adults deemed to be the most important indicators of "good" reading. The quantitative reading test data suggest that both "accuracy" and "comprehension" had both greatly improved but only four adults referred to both these measures. The two negative factors in Appendix 24d are interesting. It was the children and adults who participated in the simultaneous reading group who exclusively registered a dislike of the technique. Some children were irked by the need to read with an adult all the time. Whether this is the explanation for the fact that it was children in this group whose long-term reading performance tended to decline compared with children in the other two groups is questionable since their initial improvement was slightly greater than the independent group but it may have contributed (cf Tables 9 and 11).

The concern about "small errors" was a source of worry to nearly a third of the parents participating. It would appear from the evidence of this study that one factor in the model of "good" reading held by parents and possibly by many teachers is that the omission of small words is

deemed to be "laziness" on the part of the child. Parents were advised not to make word-perfect reading a primary concern which is in line with the advice of Smith (1985). As parents noticed children's overall improvement they tended to abandon the "word-perfect" emphasis particularly when it was clear that their child had gained an understanding of what was read. One or two parents remained unconvinced but went along with the suggestion for the purpose of the study.

The checklist which was completed during the visits to the homes of children in Group 1 gives some indication of how closely the parents followed the paired reading technique (see Appendix 24c). Topping has consistently stressed the need for home visits at fortnightly intervals to provide feedback to parents and to ensure that they continue with the prescribed technique. From parental comments during this study a fortnight between visits is a desirable optimum. The checklist was completed in most cases during the fourth visit. It is apparent that the evidence from the checklist matches parents' comments that paired reading was easy to acquire. There would not appear to be any evidence to support minority comments criticising the paired reading technique (see Doyle and Lobl, 1987 and Greening and Spenceley, 1984). The only substantial difficulty was concerned with praise where in 6/15 cases it was apparently lacking. Morgan (1986a) stresses the need for praise at the point where the child signals to change from simultaneous to independent reading, a recommendation stressed to parents in this study, though praise during the course of either reading mode was not

discouraged. Many writers have puzzled over the apparent reluctance of parents to praise their children (e.g. Burdett, 1985) and this was noticed in the pilot study. Miller et al (1986) observe that parents generally provided a warm and encouraging atmosphere; an observation confirmed by this main study. It can be conjectured with some degree of certainty that the bond between parent and child could be such that verbal praise is not necessary; parent and child appear to have ways of communicating which are partially discernible by an observer - the glance, the cuddle or a subtle private change of manner. That something of this sort is occurring is apparent from the pleasure which children in Group 1 derived from paired reading.

As Yarington (1978) observes, variables in the affective domain cannot be quantified or measured so readily as in the cognitive domain. Whilst it is true, that the problem of measurement is still unresolved and that the direction of causality between a child's feelings about himself and academic achievement is the subject of controversy, weight must be placed upon the research of Lawrence (1972 et seq), Sawyer (1974), Spache (1954 and 1957), Cant and Spackman (1985) and Wooster (1986) (see also the importance attached to self-esteem in the proposed paradigm in Chapter 4). They conclude from their research that individual counselling gives a boost to reading progress. It should be noted that these counselling sessions were usually once weekly for approximately 40 to 45 minutes. Yarington (1978) is of the opinion that as much as 60% of

variance in learning to read is due to affective factors an area which, he claims, has been neglected for years.

It is noteworthy that the literature dealing with parents hearing children read by whatever method, whilst it generally stresses its value, appears to be reluctant to make definitive conclusions about the importance of affective factors in the enhancement of reading progress particularly of delayed readers (e.g. Tizard et al, 1982; Hewison, 1987 and Hannon, 1987). More than half of the parents visited during the course of this paired reading project remarked quite spontaneously how they welcomed the opportunity on a daily basis to have a period alone with their child. One parent, more articulate than most, described the effect this had had on the relationship with her nine year old boy. She had felt that he had been neglected because an older brother and a baby sister had been engaging her and her husband's attention. The mother described how the boy's relationship with them both had improved - they had become closer.

At the risk of placing too much emphasis on intuitive judgements it is also apparent from the author's experience that many experienced teachers believe that a key element in triggering progress for the delayed reader is the establishment of a relationship between teacher, child and parents. Unfortunately this cannot always be achieved in a large class nor can it be achieved when remedial reading is only of a spasmodic nature and when the remedial teacher is often too concerned with a sophisticated array of aids.

p

8.5.QUALITATIVE DATA: BROWNING C.

The response from Browning C was as follows:

(a) returned diaries 25/30,

(b) pupil questionnaires returned 29/30 and

(c) tutor questionnaires returned 29/30.

(copies of questionnaires are included in Appendices 10, 11a and 11b).

Table 63 provides an analysis of the number of reading sessions over the nine week period.

The length of reading sessions was consistently 15 minutes and thus any additional analysis is not relevant.

TABLE 63.

ANALYSIS OF MEAN NUMBER OF SESSIONS FOR CHILD TUTORED GROUPS 5 AND 6

GROUP	MEAN NUMBER OF SESSIONS.
5	34.2
6	34.9
OVERALL	34.6

Tables at Appendices 24e to 24k give the results of the following questionnaires (full questionnaires are also given in Appendices 11a, 11b and 12).

(a) a structured cross-age tutor questionnaire (Appendix 24e),

(b) a structured peer tutor questionnaire

(b) a structured peer tutor questionnaire (Appendix 24f),

(c) a structured pupil questionnaire: (children with peer tutors - Appendix 24g),

(d) a structured pupil questionnaire: (children with cross-age tutors - Appendix 24h),

(e) an analysis of open-ended observations made by teachers and peer-tutored children based on diaries and comments (Appendix 24i),

(f) an analysis of open-ended observations made by teachers and cross-age tutored children based on diaries and comments (Appendix 24j) and

(g) an analysis of same sex and oposite sex pairings (Appendix 24k).

The qualitative data from Browning C presents an altogether different picture from Upstead P; The number of sessions completed at Browning C was, on average, just under 75% of the number of sessions possible at Upstead P largely due to a five day as against a six day week - five days at school versus six days at home.(see Table 67. In retrospect this difference should have been noted when the research was in the planning stage. However there is no evidence that there is any correlation between the reading quotient and the number of completed sessions within the range 30 to 42. Another factor accounting for the difference in number of sessions between the two schools was that absence of a child from school meant the loss of a session but if a child at Upstead P was ill at home, in most cases, unless the illness

was serious, the child continued with paired reading. The length of session was invariably 15 minutes.

A difficulty of organization which could have diminished the children's progress during the course of the nine week treatment period should be considered. As mentioned previously it was not anticipated at the planning stage that split year classes would cause any problems; of the two second year classes involved in the study one class included first year children. The teacher of this split year class experienced difficulty in supervising his second year children involved in paired reading. In practice this meant that some personality clashes and minor friction went unchecked, the completion of diaries lacked regular checks and thus the children forfeited some feedback. An attempt by the researcher was made to nullify these effects by being present twice a week during the reading period. This alleviated the situation, but some problems remained. Lacking a regular check there was some deterioration in the quality of the comments, though some peer tutors and most cross-age tutors made these with care and they were helpful. For example it was apparent that one fourth year tutor felt that a change round of tutors fortnightly would be helpful. In principle the idea was a good one but perhaps periods of four weeks would be more appropriate. In any event it might be worth experimenting with.

The opinion of cross-age tutors about their pupils' progress can be seen at Appendix 24e. There is no reason to believe that responses to this or to any of the questionnaires addressed to Browning C children were less

than "honest"; the forthright responses to open-ended questions confirm this. Appendix 24e is an encouraging commentary on the value of paired reading using cross-age tutors in terms of increased understanding, enjoyment, confidence and proficiency. The one somewhat puzzling response indicated that 7/15 of their pupils were deemed to read in a "lifeless" way. Perhaps this had something to do with the two year difference in chronological age. Of the cross-age tutors 13/15 would have been happy to continue tutoring though 9/15 would themselves have welcomed the opportunity to be tutored by someone better. The pupils of cross-age tutors were also very enthusiastic about their progress (see Appendix 24h). The one problem of note recorded by both pupil groups was the difficulty of obtaining books. Whilst 200 extra books were made available by the public library at fortnightly intervals, the demand for available space meant that these books were displayed on a folding rack in a constricted area which made access for the children difficult. There is clearly a limit to the advice which a researcher can offer and the situation was such that, in the interest of successful completion of the project, it was wiser to remain silent. That it was "hard to get books" refers to ease of access rather than to availability of suitable books. It meant in practice that some time was wasted, though when the problem was realised some children were allowed to change their book before the reading session.

The peer tutor questionnaire (Appendix 24f) provided a much less conclusive pattern of responses than

the cross-age tutor questionnaire in spite of the better performance in terms of Topping's "tnp" of peer tutored than cross-age tutored children. Of the four items which elicited a tendency to a negative response, "less willing to read" may be accounted for by the fact that three pairings in this group were not so well matched as they might have been. It is difficult to account for the negative response "have a less steady flow" and "read in a lifeless way". The response to the category "read in a lifeless way" is similar to that of the cross-age tutors but the explanation given there of age differential does not apply in this case and closer questioning of tutors was unenlightening. It may be that, where children are responsible for tutoring, the effort of keeping together in the simultaneous mode tends to produce a mechanical and somewhat monotonous reading style and observation would tend to confirm this. That their pupils did not keep a steady flow would be characteristic of some of the delayed readers a fact with which the tutors would have been unacquainted. The comment by a child who did not get on with his tutor is "encouraging". He did not like his tutor but was determined to improve his reading. Indeed there is no indication that poor pair matching affected progress though this may reflect the teacher's and the researcher's insistence that once started the pairings would not be changed. However more care should have been taken to ensure that pairings were compatible and in this respect the children's teachers could have been more helpful.

The open-ended comments provided by teachers and children are misleading (see Appendices 24i and 24j) in that

over three-quarters of the comments are those of the teachers and the headteacher. In spite of the organizational problem teachers judged the paired reading project to have been a "success"; in particular the progress of children with up to a two year delay in reading was noted. In spite of some unsuitable pairings it is encouraging to observe that teachers felt there had been an increase in friendliness and a developing maturity among the participants. General agreement was expressed about the difficult access to books and of organizing exchanges.

CHAPTER 9

DISCUSSION

9.1. GENERAL FINDINGS

The findings of the present study in general lend strong support to the superiority of classical paired reading both by comparison with the control group but also by comparison with simultaneous and independent reading. This is in line with Topping (1986b) where he provides a guide for teachers amid the development of deviant forms of paired reading, other competing reading methods and traditional practice. He recommends paired reading in its "pure" form as BEST BUY and shared reading (a form of simultaneous reading) developed by Greening and Spenceley (1984 and 1987) as GOOD VALUE. Topping does however express some doubt about the merits of relaxed reading (a form of independent reading) developed by Evans (1985) and Lindsay et al (1985).

Whilst there are other important findings which will be discussed below one of the most encouraging is that delayed readers with a RQ equal to or <90 not only made greater reading progress during the intervention period than readers with a RQ >90 but maintained their progress after the cessation of the intervention.

As a general comment there is no reason to conclude that the findings of the present study cannot be generalized throughout the UK. The success of paired reading has already been demonstrated in studies using a wide range of sub-groups (see Topping 1987a). Primarily this present research differs from the majority of other studies in its comparative emphasis. The parameter in this sample which might preclude generalizability is that of social class but there is nothing to indicate from Topping's extensive analysis that social class is a confounding variable. The volume of paired reading research suggests effectiveness across the board.

9.2. DISCUSSION OF HYPOTHESES

9.2.i. Hypotheses 1(a), 1(b), 2(a), 2(b), 3, 4, 5 and 6.

Hypotheses 1(a) and 1(b) were constructed to assist in resolving the claims made by a small number of researchers that, by using either simultaneous or independent reading alone an improvement in reading ability can be obtained comparable to that achieved using the two reading modes together as in classical paired reading.

Where hypothesis 1(a) is concerned there is a very strong trend in favour of the classical approach (Gp 1) as compared with simultaneous reading (Gp 2) in terms of the reading quotient. On a one-tail test this is significant at $p<0.05$ (see Table 20A. page 317). This suggests that the claims of Greening and Spenceley (1984 and 1987) that "shared reading", their term for simultaneous reading, is as effective as classical paired reading cannot be substantiated (see Tables 20A to 23, pages 317 to 322: also

see discussion in relation to Hypothesis 4 below). This result is in line with Topping (1986b). In addition this conclusion is supported by the tendency for children tutored by parents in the simultaneous mode of paired reading to make less progress in the long term as compared with children tutored by their parents in either the classical or the independent mode of paired reading (see Tables 20B and 24B, pages 318 and 326).

Hypothesis 1(b) relating to a comparison between independent reading and classical paired reading can be rejected in terms of the reading quotient, sub-tests C (retention of significant details) and subtest D (use of context) ($p<0.05$). The evidence would therefore suggest that classical paired reading results in a significant improvement in reading performance compared with independent reading (see Tables 20A to 23, pages 317 to 322). This result is in line with Topping (1986b) and Burdett (1985) but contrary to the conclusions of Evans (1985) and Lindsay et al (1985). These contrary results are both based on insufficient research data, a situation which the present study goes part way to resolving.

The null hypothesis 2(a) relating to a comparison between second year children tutored by their parents in classical paired reading and second year children tutored by their peers could not be rejected and the results suggest that an approach in which children are tutored by their peers in classical paired reading is almost as effective as one in which children are tutored by their parents (see Tables 20A to 23, pages 317 to 322). This finding should be

coupled with the finding that null Hypothesis 2(b) relating to a comparison between second year children tutored by their parents in classical paired reading and second year children tutored by fourth year children (cross-age tutoring) can be rejected in favour of the parent tutor group in terms of the reading quotient ($p<0.01$), in terms of sub-test D (use of context) ($p<0.05$) and sub-test F (comprehension of essential ideas) ($p<0.05$). These findings contradict Topping's (1987a) conclusions, based on what is at present limited research evidence, that cross-age tutors are more effective than peer tutors. The findings do however confirm his view about the effectiveness of child tutoring generally (see Tables 20A and 21 to 23, pages 317 and 320 to 322).

Hypothesis 3 was designed to compare the progress of second year children tutored by their peers with second year children tutored by fourth year children. The null hypothesis cannot be rejected in this case. Whilst, as already mentioned, Topping (1987a) urges the greater effectiveness of cross-age tutoring compared with peer tutoring, the tenuous grounds for this conclusion are not confirmed by the present research; if anything the reverse appears to be true ($p<0.09$) i.e. that peer tutoring may be more effective than cross-age tutoring (see Tables 20A and 21, pages 317 to 320). The reasons for this are difficult to determine on the basis of the evidence presently available but certainly further research is called for.

The aim of hypotheses 4, 5 and 6 was to compare the reading progress (in terms of reading quotient and sub-

tests A to F of the ERT) of the five intervention groups (1, 2, 3, 5 and 6) and the two tutor groups (7 and 8) with similar progress made by the control group (see Tables 24A to 27, pages 325 to 329). Hypothesis 4 relating to groups 1,2 and 3 could only be supported in the case of group 1 tutored by parents using the full paired reading technique ($p<0.05$). This is additional support for Topping's finding that classical paired reading is more effective than the "simultaneous" reading of Greening and Spenceley (1984 and 1987) and the "independent" reading of Evans (1985) and Lindsay et al (1985).

One of the prime purposes of the present study is to evaluate the claims that simultaneous or independent reading on their own are as effective as the "amalgam" of the two known as classical paired reading. The research basis for these statements is limited and in addition much of Topping's evidence is suspect on methodological grounds as the literature has shown. However Topping's conclusions do appear to vindicate his faith in classical paired reading tutored in particular by parents (see Topping, 1986b). His conclusion derives additional support from the failure of the present study to support Hypothesis 5 which anticipated that the results of peer and cross-age tutoring would be better than that of the control group. Table 20c, page 319 is a cogent demonstration of the all-round superiority of classical paired reading in that all the statistically significant findings are contained in the first column - the differences between the mean RQ's in terms of progress between Times 1 and 2 comparing the classical paired reading

Group 1 with Group 2 (simultaneous reading), Group 3 (independent reading), Group 4 (control), Group 5 (peer tutored group) and Group 6 (the cross-age tutor group respectively).

Hypothesis 6 that the progress in reading made by the peer and cross-age tutors would be greater than that made by pupils in the control group cannot be supported by the present study although there was a substantial difference in favour of the peer group tutors (see Table 24a, page 325). There is nothing to indicate that the performance of peer and cross-age tutors suffered from certain problems of organization discussed elsewhere. The findings do not confirm the analysis of a limited number of studies using peer and cross-age tutors made by Topping (1987d) that the reading progress of tutors matched those of their pupils. It is difficult to speculate about the discrepancy in these findings except to note that Topping comments "Doubts about the reliability, validity and comparability of the reading tests used in these projects are substantial." The need for further research is exemplified once again.

9.3. ADDITIONAL COMMENTS ON HYPOTHESES 1 TO 6

9.3.i. Progress times normal

Throughout the literature the effect of paired reading intervention is commonly reported in terms of "tnp" (the acronym adopted in the literature survey for "times normal progress"). Keith Topping in his analysis of classical paired reading studies iniably uses this measure. Topping (1986c), in his second annual report,

analyzes the progress of 1,595 children who had participated in classical paired reading studies and calculates a mean improvement for reading accuracy of 3.4 "tnp" and for comprehension of 4.7 "tnp". For comparative purposes it makes sense to augment the more statistical conclusions with a calculation using "tnp" during the present study.

The present study shows that, during the period January 1987 to April 1987, classical paired reading with its 7.4 "tnp" as measured by the ERT (see Table 42, page 354) is clearly BEST BUY in line with Topping's analysis (Topping 1986b). Both simultaneous and independent reading were GOOD VALUE at 4.8 and 4.7 "tnp" respectively which is also in line with Topping's finding. The general trend of the findings using the 'tnp' measure thus clearly demonstrate the superiority of classical paired reading as opposed to both simultaneous and independent reading.

9.3.ii. The Hawthorne Effect

A further examination of the present study shows that the control group (Group 4) made 5.5 "tnp" which is slightly in excess of the 4.8 and 4.7 "tnp" made by the simultaneous and independent groups respectively but still considerably less than the classical paired reading group "tnp" at 7.4. Topping (1987c) notes that over the three years of the Kirklees Reading Project in studies where control groups were used children gained at 2.1 "tnp" in reading accuracy and experimental group children gained at 4.3 "tnp" in reading accuracy.

During the previous discussion about the Hawthorne Effect in Chapter 5 it was reported that Topping regarded

the reading progress of the control group as reflecting "... contamination...in reading from the experimental group." In the present study there is no doubt that the immense enthusiasm of participating parents and staff is also likely to have contributed to the progress of control group children, a feature also mentioned by Topping (1987c). It cannot be without significance that Topping's analysis shows that on average the reading progress of the experimental paired reading groups in terms of "tnp" exceeded that of control groups by 2.1 "tnp" and that the reading progress in the present study of paired reading Group 1 exceeds the progress of the control Group 4 by 1.9 "tnp". That the progress of the control group in the present study is so much greater than the mean gain of control groups in Topping's analysis (5.5. "tnp" as compared with 2.1 "tnp") may be due to the enhanced enthusiasm generated in the present study since, as just noted, there is a similar difference between the "tnp's" of children in the classical paired reading and control groups (7.4 "tnp" as compared with 5.5).

These results suggest that the Hawthorne Effect is operative across all groups in this type of research which is the conclusion of Gay (1981), Borg (1981), Cook (1962) and Zdep and Irvine (1970). It would also appear to justify the decision made when the present research proposal was initiated to attempt to sustain equal enthusiasm across experimental and control groups and thus to cancel out the influence of the Hawthorne Effect as a confounding variable. Although some 'normal' parental involvement with control

group children's reading is likely to have taken place during the course of the present study follow-up enquiries suggest that no systematic reading took place comparable to that in the experimental groups.

It is submitted, therefore, that the improvement in reading of the control group can be attributed to the Hawthorne Effect. Further, since its "strength" is similar to the improvement in reading of both Groups 2 and 3, the simultaneous and independent reading groups, this suggests that whatever factors are operating to make these two modes effective for producing reading progress in young children they are comparable to the influence of the Hawthorne Effect on the control group. (This supports the present findings in relation to Hypothesis 4.) Classical paired reading with its marked additional effectiveness is "greater than the sum of its parts" which argues very strongly for its preferred use in comparison with other forms of paired reading. If the X factor apparently held in common with the control group and the independent and simultaneous groups can be explained by the general climate of corporate enthusiasm this might have further implications for Lawrence's research findings linking counselling with reading improvement (see Lawrence 1971 et seq). It might also confirm the speculations of Yarington (1978) based on considerable experience of reading problems with children that "... at least 60% of the variance of learning to read is due to affective rather than cognitive factors."

9.3.iii. Reading comprehension

Where there is a significant improvement in reading vocabulary generally speaking there is a commensurate improvement in sub-test performance. There are one or two exceptions to this and they will be discussed at the appropriate time. The ERT Stage 2 reading quotients were correlated with the mean of three reading quotients derived from The Richmond Test of Basic Skills, (Hieronymus and Lindquist, 1981), Test V (vocabulary), Test R (reading comprehension) and Test L4 (usage) (see Chapter 8.1.i.). The high correlation of 0.903 would suggest that the ERT Stage 2 is indeed providing a unitary global score in terms of the measures quoted.

There is no evidence from the present study that there is any significant difference between the progress of second year junior children in reading accuracy as compared with comprehension (see Tables 20A to 27, pages 317 to 329).

These results conflict with Topping's (1986c) findings in his second annual report where, on average, he reports that during paired reading projects children improved their reading accuracy scores at 3.7 'tnp' compared with an improvement in comprehension of 4.8 'tnp'. It is submitted that the inflated comprehension scores are due to the inadequacies of the Neale Analysis of Reading Ability discussed in Appendix 26 The impending publicaton (August 1989) of a restandardized version of the NARA after a lapse of 30 years is a tacit recognition of these deficiencies.

9.3.iv. Reading rate

There have been comments made by professionals that the simultaneous mode of paired reading, Group 2 of this study, has a tendency to slow down a child's reading if practised at length. Without giving any reasons for his statement Miller (1987) also warns that too much simultaneous reading may be detrimental. There is no evidence from the ERT sub-test E (see Tables 23A and 27, pages 322 and 329) which measured reading rate that this occurred in the present study. Indeed using a paired 't' test to examine the summary of standardized data in Table 6E, page 297, the difference in the reading rate scores between Times 1 and 2 is significant at <0.01 ('t' = 3.17). There is an isolated instance of a father participating in the paired reading study who claimed that he had noticed that the simultaneous mode of paired reading had drastically slowed his daughter's reading rate. He also says that previously she had tended to skim or even skip sections. It may be recalled that a lack of enjoyment was also noted as a feature of the simultaneous mode in the questionnaire responses and it may be that this contributes to a poor reading rate. However other aspects of simultaneous reading may also be relevant; that it is tedious and frustrating in the opinion of some parents is evident from the questionnaires.

9.3.v. Peer and cross-age tutoring: extraneous variables and other considerations

The data obtained from the treatment groups may have been contaminated by a number of extraneous variables. When the headteacher of Browning C agreed to his children participating in a paired reading project it was not appreciated that one of the "second" year classes from which it was necessary to draw children included first and second years. This meant that teacher supervision for some of the children was less than what was required to ensure support for the pairs concerned because his attention was divided. To help to overcome this the researcher visited the school twice weekly during the tuition period to provide the pairs with some guidance and feedback but, lacking adequate support from their own teacher was no doubt detrimental to maximum exploitation of the intervention.

The competing demands from other subjects on the curriculum meant that it was not possible for each child to achieve the maximum 45 sessions (see Table 63 page 384). On average one session per week was lost which meant that Browning C children completed approximately 75% of the number of sessions achieved by Upstead P children. This is however based on the dubious assumption that each tutor completed the daily record accurately. Along with the findings of Miller et al (1985) and Miller (1987) however time on task does not appear to correlate significantly with reading progress; that is within the parameters noted.

Out of 27 responses to the question "Was it hard to get books, or easy?" 21 pupils answered "hard". From

observation this was mainly due to the fact that additional books had been borrowed from the public library and were kept separate from class readers at a central point. This caused some quarelling and "traffic jams" which were never fully solved.

More care should have been given to the matching of children in their pairs. It was apparent that at least five of the pairings were involved in some degree of friction. However a researcher is dependent on the teacher's judgement in planning the pairs. Outright choice by the children was not practicable in this case because of the need to retain a differential between the reading ability of tutor and pupil.

In spite of the foregoing intervening variables the peer tutored group made considerable progress second only to the parent tutored paired reading group 1. In terms of Topping's "shopping list" this could be termed "very good value" though Townsend (1986) is of the opinion, which will be discussed later, that the bonus effects accruing from parent tutoring may not be present for peer tutoring. In terms of the "tnp" measure peer tutoring was 6.4 "tnp" compared with parent tutoring which was 7.4 "tnp". Topping's (1987d) analysis of ten studies provides an average of four "tnp". The difference between Topping's figures and the figures derived from the present study is consistently of the order of 2.0 "tnp"; it can only be reiterated that this may be due to the additional enthusiasm generated in the present study. When the qualitative data are discussed later it will be apparent that the children who participated

appeared to have enjoyed the intervention and were willing to continue and to that extent were unaffected by these problems. The progress of the cross-age tutored children compares unfavourably with the progress of peer tutored children using paired reading; the difference is significant at the <0.01) level. It is not possible to make accurate conclusions as to why this should be in the absence of comparative data from other studies. It could be speculated that peer tutored children derived more enjoyment from their pairing than cross-age children but this does not seem to be the case (see Tables 68ff, Appendices 24e to 24k).

In the present study there is no evidence that tutors' reading progress is commensurate with or better than their pupils' reading progress as American studies of non-paired reading tutoring would suggest (consult Cloward, 1976; Felman et al, 1976 and Paolitto, 1976).

9.4. HYPOTHESIS 7: THE MFFT

This hypothesis was designed to discover whether the inconclusive statements in the literature about reflective children being better readers than impulsive children in the middle and lower classes of the primary school had any substantial basis in fact. If there is any evidence for this it would suggest that training impulsive children to be more reflective would help to improve their reading. A period of intensive emphasis on reading skills as occurred in the present study provided an ideal opportunity to determine whether reflectives were better able to take advantage of this initiative than impulsives. An examination of Table 29, page 333 over the period of one year shows that

there was a steadily increasing differential between the mean reading quotients of reflective and impulsive children ($p = <0.01$) and thus the hypothesis is confirmed in line with the research of Blanton and Bullock (1973) and Sones (1973). Reflective children appear to derive a benefit which continued after the nine week intensive treatment period. When the long-term benefits of paired reading are discussed under Hypothesis 12 the significance of this progress will be examined further.

It is also of interest in the light of statements by researchers that paired reading produces startling gains in comprehension skills, that the statistically significant progress shown here for reflective children obtains for both the vocabulary and the comprehension sub-tests (see Tables 30 to 32, pages 334 to 336). In terms of Topping's "tnp" criterion, whilst reflectives improved by 5.6 "tnp" and 1.3 "tnp" during the treatment and follow-up periods respectively the comparable figures for impulsives were 4.7 and 0.9 "tnp". To break down the reading progress of reflectives and impulsives within each treatment group would be invalid because of the small numbers involved.

9.5. HYPOTHESIS 8: LIBRARY MEMBERSHIP

This hypothesis stated that membership of a public library would be related to the reading performance of children participating in an intensive reading initiative. It may not be surprising that the differences between library/non-library members in mean reading quotient at Times 1, 2 and 3 as measured by the ERT were highly significant (see Table 33, page 339) since it is likely that

good (and keen) readers will use libraries more than poor and less well-motivated readers. What is perhaps more interesting however is that, for the duration of the treatment period and during the subsequent follow-up, there was no difference in the rate of progress of children whether they were or were not library members (also see Table 33, page 339, sections Time 2-1 and Time 3-1, where in fact the rate of progress of non-library members in the longer term is slightly more than library members). This latter finding is encouraging because it would suggest that whatever complex association there may be between non-membership of a public library and poor reading performance it does not retard subsequent progress during an intensive emphasis on reading skill although it is likely that good (and keen) readers will use libraries more than poor and less well-motivated readers.

The statistically significant difference between the means of the Dundee Attitude to Reading Test ATR2 Global for pupils who were members/non-members of public libraries is shown at Table 55, page 370 ($p<0.01$) and this supports Ewing and Johnstone's finding in their examination of the validity of the DART. However whether progress in reading leads children to become library members or whether membership of a public library leads to enhanced reading progress or both is not possible to determine from the present research.

9.6. HYPOTHESIS 9: ATTITUDE TO READING

This hypothesis is designed to examine whether there would be any difference between the reading

performance of children with a negative attitude towards reading and those with a positive attitude (see Table 34, page340). The hypothesis is supported at $p<0.001$.

The additional finding in the present study that the ERT correlates with the DART at 0.394 for the first administration and at 0.523 for the second administration (see Table 36, page 342) is in line with Ewing and Johnstone's figure of 0.43 {both correlations are significant at
$p<0.001$ and match the finding of the Primary Survey Report No 1 "Language Performance in Schools (Gorman et al, 1981 using an attitude test developed by them}. Gorman et al do not report the correlation coefficient but state that it is significant at $p<0.001$ and obtained with a test developed especially for eleven year old children. Gorman et al lament the lack of research into the relationship between children's attitude to reading and their performance. The increase in the correlation coefficient between Times 1 and 3 for the ERT and the DART may reflect the increased enjoyment of reading which has been clearly expressed in the responses to questionnaires.

The negative skew is more pronounced in the present study than in Ewing and Johnstone's study which could reflect the predominantly middle-class composition of the present sample. In common with the data supporting Hypothesis 8 it would appear that there is no statistically significant evidence to show that a negative or a positive attitude to reading has an influence on the rate of progress; over the duration of the study the progress of

both -ve and +ve attitude groups was comparable. Table 15, page 310, shows that between Times 1 and 3 the attitude to reading score decreased in five out of the seven experimental groups. It is submitted that the reasons for this may be accounted for by the pronounced negative skew of the scores and by regression to the mean.

9.7. HYPOTHESIS 10: ATTITUDE TO SCHOOL

This hypothesis states that children who have a positive attitude towards school will have a significantly better reading performance than children who have a negative attitude towards school. The hypothesis is clearly supported; at times 2 and 3 the mean difference between the reading quotients is of high statistical significance (see Table 37, page 344 where $p<0.05$ and <0.001 respectively). The more highly differentiated data of Table 38, page 345 are "erratic". There is a clear tendency for the mean reading quotients for Groups 3 and 5 (the "neutral" group and the "like very much" group respectively) to improve throughout the treatment period and the subsequent follow-up. Beyond that it is probably too much to expect, as distinct from the clearer tendencies of Table 37, that the more differentiated data would show general tendencies. It does however serve to remind that general tendencies incline to obscure individual differences. In distinction to the two previous hypotheses the rate of progress in reading achievement for the negative attitude to school group is less than that for the positive group and the difference is statistically significant ($p <0.05$) (see Table 37, page 344).

A comparison of the percentages of children falling within the five categories of attitude to school shows that the profile is similar for Ewing and Johnstone's data and for the data provided at Times 1 and 3 in the present study (see Table 58, page 372).

9.8. HYPOTHESIS 11: ESTIMATE OF OWN ABILITY

The hypothesis is supported (see Table 39, page 348). The reading performance of those children who have a high estimate of their own ability is greater than that of children who have a low estimate of their ability throughout the study period and is highly significant ($p<0.001$).

The differential between the two groups over the course of the present study remained constant i.e. the rate of progress remained constant (see Table 39, page 348) unlike the differential between children with a positive attitude to school and those with a negative attitude to school where the differential widened (Hypothesis 10).

9.9. HYPOTHESIS 12: CHANGE IN ATTITUDE

This hypothesis is supported: during the duration of this study there was a significant improvement in the attitude to reading of children who initially had a negative or a moderate attitude to reading (see Table 41, page 350) ($p<0.001$).

Nineteen out of the 30 children who initially had a negative attitude to reading were delayed readers defined for the purpose of the present study as those children whose initial RQ was equal to or <90. Twelve out of those 19 improved their attitude to reading and this may be attributable to factors operating within the paired reading

relationship. It is important that this point should not be lost when considering other findings in the present study relating to the overall improvement in the reading achievement of delayed readers.

N.B. Hypotheses 9 to 12 concerned with attitude to reading, attitude to school, assessment of own ability and change in attitude over the experimental period raise the question of whether 'good' attitudes lead to good reading or vice versa - or a bit of both. The finding of Hypothesis 12 suggests that improved reading may lead to improved attitudes. On the other hand the increased attention which the children received from their parents during the course of the present study would suggest otherwise. Essentially the pattern of directionality of influence remains unsolved.

9.10. HYPOTHESIS 13: tHE LONG-TERM EFFECT OF PAIRED READING

This hypothesis states that the progress in reading attainment will be maintained after the cessation of the paired reading intervention. Whilst the hypothesis is not supported in general (cf Tables 9 to 11, pages 302 to 304) some comments need to be made about the longer term effect on children whose reading quotient is equal to or <90 when sub-group characteristics are discussed below.

The most dramatic presentation of the effect of the paired reading intervention is shown at Table 42, page 354 which uses the "tnp" gains used by Topping and is referred to above; also in Figure 3, page 353 which shows the very marked progress in reading ability for all groups between Times 1 and 2 and the return to 'normal' between

Times 2 and 3. As previously explained it is to be regretted that adequate baseline data from September 1985 are only available for 52 children at Upstead P. (With hindsight it would have been useful to have planned for this information to be available for the whole sample.) Reading progress for these 52 children between September 1985 and January 1987 {based on the Kent Reading Test in September 1985, the NFER "A" reading test (Watts, 1953) in May 1986 and the ERT in January 1987} was approximately commensurate in terms of reading age with chronological age (a factor of 1), a finding which is in line with Topping's observations on baseline data (see Topping, 1987a). Between January 1987 and April 1987 the comparable progress varies between factors of 7.4 and 3.7 "tnp" for the five intervention groups and the two tutor groups. Between April 1987 and January 1988 after the intervention phase reading progress in terms of "tnp" reverts approximately to a factor of 1. For the testing in this latter period the ERT was used.

Topping (1987a) on the evidence of six data sets from four projects comments "... that though acceleration at normal rates does not continue indefinitely, the advantages accruing to paired reading children are maintained and do not 'wash out'" (also see Carrick-Smith, 1985). At the paired reading conference held in Dewsbury, West Yorkshire in November 1988 Keith Topping in his plenary address claimed that further evidence indicates that after an eight month lapse from cessation of intervention limited evidence shows that children continue to progress at 1.2 "tnp". It is apparent from the phrasing of the above quotation and his

conference remarks that Keith Topping appears to believe that the maintenance of a "tnp" factor slightly greater than 1 is in some way "satisfactory". The intensive reading intervention of the present study indicates that the majority of children participating in the study made a substantial improvement in reading attainment and that subsequently the rate of progress did not fall below a "tnp" of less than 1. To that extent paired reading would appear to give an effective and possibly a lasting boost to the reading performance of paired readers. However the fall-off in reading performance from a mean of 5.3 "tnp" during the intervention period to a mean of 0.95 "tnp" after a lapse of nine months does not appear to match the euphoric claims made for paired reading in its earlier days (see an analysis of early studies using paired reading between 1981 and 1984 provided by Keith Topping at Appendix 7). However it may well be that at some point a ceiling effect would operate after such a 'spectacular' gain in reading progress and intensity of effort.

9.11. CHARACTERISTICS OF SUB-GROUPS

9.11.i. A comparison between the delayed and the more able readers

Summaries of paired reading research have concluded that the degree of reading delay in children at the commencement of a project appears to be unrelated to gains during paired reading intervention (cf Miller et al, 1986 and Morgan, 1986a). However in the present study the mean RQ between the continuing performance of children measured at Time 1 with a RQ equal to or <90 and those with

a RQ >90 narrowed appreciably from 22.4 points at Time 1 and 10 points at Time 2 to 8 points at Time 3 (see Table 43 and Figure 4, pages 356 and 357). Though the gap remained significant ($p<0.001$) the rate of progress of the two groups between Times 1 and 2 showed that the children with a RQ equal to or <90 improved by 2.5 points in mean RQ more than the children with a RQ >90; this figure approached significance. Between Times 1 and 3 into the follow-up period children with a RQ equal to or <90 improved by 4 points more than children with a RQ >90 in terms of mean RQ ($p<0.05$). It is interesting to compare the progress of delayed readers in the present study with the scanty evidence for the effectiveness of remedial reading reviewed in the literature survey.

In contrast to paired reading the literature review showed that there was no evidence that short term gains attributable to remedial reading programmes had any long-term effect (see DES, 1975 - the Bullock Report - and Gittleman and Feingold, 1983 for typical comments). It is difficult not to be cynical about the lack of hard statistics in the field of reading research. It is almost as though there is a conspiracy to conceal the lack of effectiveness of remedial reading programmes. On the basis of limited research it is apparent that subsequent progress after remedial reading reverts to a rate considerably less than 1 on the "tnp" criterion. Topping (1977) found that, over a two year follow-up period, a small sample of 33 children progressed in reading at a mean of 0.47 "tnp" after the cessation of remedial reading. The study of Lovell et al

(1963) examined the records of 261 children who had been referred to remedial reading centres in an English Education Authority but their findings are less sanguine. Follow-up over three and a half years failed to demonstrate any difference in reading progress between those children who had attended the centre and those who had not.

In the absence of any rigorous follow-up studies (see remarks by Gittleman and Feingold, 1983) the experience of teachers is the only guide and this would suggest that the figure of 0.47 'tnp' found by Topping is overstating the position. Any discussion about reading progress is also perforce obscured because of the lack of agreement as to what is to be regarded as adequate progress. If a child progresses year on year (1 year of reading age to one of chronological age) is this acceptable as a norm? A rigorous examination of the issues involved would go beyond the scope of the present study but the predominant use of reading tests such as the Schonell (1942-5), Burt (1976), Holborn (Watts, 1948) and the Daniels and Diack (1975) among the teaching profession would suggest that a "tnp" factor of 1 is generally regarded as a more than satisfactory rate of progress for a delayed reader. These tests among others commonly used provide reading ages as a measure of progress with the implication that progress of 1 year of reading age for 1 year of chronological age is a norm.

However whilst the use of Topping's "tnp" comparison as a rough guide to progress may be approximately valid for the sample, to use it to compare the progress of delayed readers with more competent readers would be unwise.

It raises further questions about the use of reading ages. For example is it reasonable to equate two year's progress in terms of reading age for a child with an initial reading age of 6.0 and a chronological age of 9.0 with a child of similar chronological age but with an initial reading age of 11.0? This question is discussed briefly in the literature review. It is not proposed to examine it here at any greater length but simply to re-emphasize at this stage the importance of the basic point.

It is submitted that the data displayed at Table 43 and Figure 4, pages 356 and 357 are sufficient to demonstrate by contrast with Miller et al (1986) and Morgan (1986a) that children who are delayed readers and who participate in paired reading do appear to improve at a faster rate than their more competent peers and that this progress may be sustained.

9.11.ii. The MFFT

In relation to findings on the MFFT there is strong evidence that, among younger readers, the more impulsive children have a tendency to be inferior in their reading performance to the more reflective children (Table 44, page 361). The "split" used in this instance is a RQ equal to or <100 and a RQ >100. The differences are consistent for Times 1, 2 and 3 and nicely demonstrate the point. They provide additional support for the predominantly correlational studies which show a link between conceptual tempo and reading skills at an early age (cf Kagan, 1965 and Blanton and Bullock1973). Sones (1973) in particular concludes that impulsive children tend to have more reading

difficulties than reflective children; a statement which the present study would confirm.

One reason for including the MFFT in the present study was to attempt to find out whether the paired reading technique provided a structured approach to reading some elements of which might match attempts to train impulsives in improved scanning strategies (see Messer, 1976). He emphasised that it is essential for the child to verbalize and he also recommends the use of teachers to model behaviour. There is however no evidence from the present study that impulsives become less impulsive during intensive reading intervention.

The DART has little to offer in terms of distinguishing between children with a RQ equal to or <90 and those with a RQ >90. It is not possible to associate a general improvement in reading performance with any of the parameters because of limitations in the data obtained although there is a suggestion that children with an ERT RQ equal to or <90 did improve their attitude to reading over the period of the present study (see Table 41, page ?).

However the consistent finding of the present study shows that children coming within the negative categories of the main attitude test and the two sub-tests have a reading quotient substantially lower than children with positive attitudes though the mean RQ's of the three groups differ substantially. An examination of Tables 34, 37 and 39, pages 340, 344 and 348) exemplifies these apparently anomalous statements. The mean ERT reading quotient score of children who regarded themselves as "not clever" is 87.50;

of those who had a negative attitude to reading 95.20 and of those who disliked school 100.30.

9.11.iii. Sex: differential scores

Miller et al (1986) and Morgan (1986a) summarized paired reading research and found that sex appeared to be unrelated to progress in reading during paired reading studies though Burdett (1985) in her research found that boys respond slightly more positively to paired reading than girls. In the present study there is nothing to indicate any difference of response in the reading performance of boys and girls where clearly the differential remains constant with boys consistently underscoring girls by a statistically significant figure (see Table 50, page 367) where $p<0.05$). Table 51, page 368 shows that boys had a more negative attitude to reading than girls at Times 1 and 3 ($p<0.01$ and $p<0.05$ respectively) and this corroborates the finding by Ewing and Johnstone at Table 52, page 368.

At the conclusion of the paired reading intervention there was no significant difference in the comparative reading progress of pupils tutored by same sex or opposite sex tutors in the peer tutored and cross-age tutored groups (see Tables 53 and 54, page 369). This fits in with the research of Devin-Sheehan et al (1976) who report no difference between same sex and opposite sex pairings. More recently Topping and Whiteley (1988) summarize the results of 15 peer tutored paired reading projects of which three used cross-age tutors. Whilst the evidence for trends is still scanty their findings confirm the trend in the present study in one particular respect.

The boy/boy pairings, in the opinion of Topping and Whiteley, are "particularly robust" (cf Table 53). They suggest that this should be an encouragement to teachers who find it difficult to motivate boys. However their findings that girl/girl pairings are also very effective are not borne out by the present study (see Table 53).

9.12. COMMENTS ARISING FROM THE QUALITATATIVE DATA

For Upstead P almost without exception the responses of parents, teachers and children to questionnaires express the value of paired reading. The pattern of subjective judgements matched the progress within the three groups (classical, simultaneous and independent). It is apparent that the classical form of paired reading was more readily accepted than either the simultaneous or the independent modes with the simultaneous mode having a tendency to be irksome.

Questionnaire responses also confirm the weight that should be attached to the affective domain. Apart from the enhanced interest from the researcher and teachers which the children received, there is no doubt that a majority of parents and children enjoyed the regular interaction which paired reading provided. Any evaluation of why paired reading is successful must take account of these enhanced relationships and it is to be regretted that it was not possible to include an experimental group receiving counselling alone in the present study to make a comparison with the paired reading groups.

The concern of researchers that the praise provided by parents is inadequate is probably exaggerated;

it was noticeable that parents have subtle ways of communicating their pleasure - the 'look', the cuddle. the tone of voice - not readily discerned by a casual observer.

Two aspects of the take-up rate of paired reading are worth noting. The overall take-up rate was 60% which compares very well with other studies and 20% of the parents were fathers which was very encouraging.

Where Browning C was concerned it is remarkable that in spite of the practical difficulties experienced referred to in Chapter 8 teachers and children judged the paired reading project to be successful particularly where the less able readers were concerned. It is submitted that this demonstrates the robustness of the paired reading technique. It is apparent that if more care had been taken to ensure that pairings were compatible reading performance might have been further enhanced.

9.13. SOME IMPLICATIONS FOR THE PRACTICE OF PAIRED READING

9.13.i. The superiority of classical paired reading

A fundamental conclusion of the present study is that classical paired reading tutored by parents tends to be superior to parental tutoring using either the simultaneous or the independent modes which confirms Topping's (1986a) conclusion that it is BEST BUY. There are three additional reasons for discounting simultaneous reading. Firstly the technique was disliked by 6/15 of the children involved compared with the unanimous approval of children in the paired reading and in the independent reading groups. There was an expressed preference for children to read on their own as in the independent reading group. From conversation

with parents the simultaneous paired reading technique was generally disliked. Secondly, whilst there may be some doubt about the reasons for the unpopularity of the simultaneous mode, it is a fact that it was the only group whose progress deteriorated in terms of "tnp" during the 9 month follow-up period. Miller (1987) comments that too much simultaneous reading may be detrimental although he does not offer any reasons for this statement. This issue would however merit further investigation.

In attempting to make balanced conclusions about the comparative worth of the simultaneous and independent modes with classical paired reading there is another important consideration relating to the Hawthorne Effect. It is submitted that the elements that coincided in the present study, that is, a structured reading programme, all-round enthusiasm from parents, pupils and teachers were probably responsible for the operation of the Hawthorne Effect across both treatment and control groups. The effect can be regarded as a spin-off benefit as if the built-in reinforcement is self-sustaining. This is not an idiosyncratic "use" of the Hawthorne Effect but extends the comments of Cook (1962) and Borg (1981) discussed earlier. The progress of the control group can thus be regarded as a measure of the strength of the Hawthorne Effect and the fact that the classical paired reading group progressed at a commensurably greater rate compared with the progress of the rate of the control group and the simultaneous and independent groups over the nine week period is a measure of the effectiveness of the classical paired reading approach.

These tentative conclusions would suggest that, whilst paired reading has a tendency to be superior to both simultaneous and independent reading, the latter techniques are effective in their own right. It is probable however that they are no more effective than a sustained and enthusiastic intervention to improve the all-round standard of reading which involves parents hearing their children read (see Hewison, 1987). On the basis of these findings the claims of researchers such as Greening and Spenceley (1984 and 1987), Evans (1985) and Lindsay et al (1985) that the simultaneous and the independent modes are as effective as classical paired reading are questionable.

To attempt to provide a full answer to the question why the classical paired reading technique appears to be superior to either of its components practised alone is not possible on the basis of the data obtained from the present study. The differences in the techniques must however hold a clue. The difference primarily consists in the greater support given to parents. In many cases the fortnightly visits to parents undertaken by the researcher have amounted to "counselling" sessions for parents. It is submitted that the four 30 minute or longer visits to parents over the period of the intervention may serve a similar function to the counselling provided by Lawrence for delayed readers in terms of the enhancement of children's reading performance and relationships between home and school. The other main difference can be somewhat tritely described as "the whole is greater than its parts", but which suggests that the difference is too subtle to be

evident; only careful research analysis will provide an answer.

9.13.ii. Peer and cross-age tutoring

It would appear that the extension of the paired reading technique from parental tuition to peer and cross-age tutoring is justified. However, along with the finding that peer tutoring is superior to cross-age tutoring, both conclusions should be viewed with caution because of the methodological problems encountered at Browning C. It is probable that child tutoring may be even more effective than is indicated. For the same reasons it is not possible to make any conclusions about the performance of the tutors which, the literature suggests, is comparable to the progress of pupils (see Doyle and Lobl, 1987 and Topping. 1987a). No doubt attempts will be made to compare the spin-off benefits of child versus parental tutoring. The probability is that these are complementary and cannot therefore be judged in terms of which is the better. On the one hand Jerome Bruner urges "... that we use the system of student assisted learning from the start in our schools" as one means of dealing with the psychological problems associated with prolonged schooling in a technological society (see Bruner, 1972 and Allen, 1976). On the other hand Townsend (1986) concludes that parental tutoring is preferable because of its beneficial side-effects on relationship and behaviour. In a private communication to the author Keith Topping has concluded (1989), on the basis of studies available to him, that parental tutoring is qualitatively better than peer tutoring. When spin-off

benefits are discussed below the balance can be more readily assessed.

9.13.iii. Conceptual tempo

There is little doubt that children who are reflective make greater reading progress at an early age than children who are impulsive and that this may be particularly true of comprehension. The relevance of conceptual tempo to the paradigm of reading acquisition in Chapter 4.7. should be noted. However, as researchers are quick to observe, cognitive style is only one of many possible determinants of individual reading differences. It is important to note the originality of the present study where conceptual tempo is concerned; not only is it the only study seeking to examine the relationship between conceptual tempo and paired reading but the study uses the conservative measurement techniques of Salkind (1978). This conservative formula together with its application in the present study has provided data which more readily discriminate between impulsivity and reflectivity. The scoring technique of Salkind (1978) uses negative coefficients as indicative of reflectivity and positive coefficients as indicative of impulsivity. The present study has made the cut-off figure more rigorous. Scores equal to or <-0.50 indicate impulsivity and scores equal to or >+0.50 indicate impulsivity.

9.13.iv. The test instruments

Generally speaking the test instruments used are among the best available for their purpose. The DART has proved to be an invaluable aid in terms of the main attitude

to reading scale and the sub-tests. The apparent regression to the mean shown by the second administration (see Table 15, page 310) is no doubt an inherent element in the testing business. The developers of the attitude test may need to scrutinize the sub-scales more closely; they may be measuring aspects of the same dimension. The suggestion is made with the limited evidence from the present study that children with a negative attitude to reading, to school and to an assessment of their own ability are overlapping samples though by no means exclusively so. A factor analysis might provide a more refined measure.

The ERT has proved to be an effective instrument to measure the children's reading quotient. Whether it is also effective in its measurement of comprehension skills is open to question. The sub-tests do not appear to be measuring reading skills distinct from the general reading accuracy score. Upstead P children were also tested using the Richmond Test of Basic Skills; the high correlation between the two sets of reading quotients provided useful confirmation of the validity of the ERT scores.

For the MFFT this study should provide useful additional evidence that the use of Salkind's (1978) scoring techniques tend to counterbalance the comparative crudity of the original method of Kagan et al (1966) to differentiate between impulsives and reflectives.

9.13.v. Spin-off benefits

Spin-off efits are considerable. For example the interest shown by fathers in their children's education was encouraging and would appear to be increasing compared

with previous studies though this is not an area where 'hard' comparative figures are readily available and it is worth noting that this is a predominantly middle-class sample. The enthusiasm with which parents, teachers and children co-operated in this initiative can only augur well for community relations and for "academic" success in the schools. The spontaneous manner with which second year children, who were tutored by their peers and by fourth years, testified to their reading progress and which accurately reflected the objective tests was also a "joy" to listen to.

The evidence from questionnaires directed to parents, teachers and children was expressed in terms of greater confidence and enjoyment alongside fluency and "understanding" paralleling Topping's (1986d) analysis. Apart from the confirmation provided by the ERT these factors must be regarded generally as key indicators for the "success" of any reading project. The paramount importance of the affective domain cannot be over-emphasised. This confirms the 'wisdom' of Miller (1981) who emphasised the influence of attitudes, self-esteem and motivation in his paradigm of reading acquisition (see Chapter 4.7) and should stimulate greater attention to the value of counselling delayed readers in particular. There is no doubt that for a number of parents paired reading provided an opportunity for the "re-discovery" of bonds between parent and child which had become fragmented by other family commitments. It is not an exaggeration to say that in some cases relationship problems arising from unwitting neglect were "healed" and,

in most cases, bonds were strengthened. Whilst it is well-nigh impossible for a teacher of a primary class with a roll of 30+ to establish a relationship with each child it is submitted that, where children are aware that a friendly relationship exists between his/her teacher and his/her parent this provides a climate in which the child's education thrives. Clearly it would be counter-productive to attempt to develop relationships only with delayed readers.

As a relevant footnote to the preceding paragraph a very recent testimony to the effectiveness of paired reading is that of Stewart (1989). She explains that paired reading is new to the Stathclyde region of Scotland. Stewart's first impressions can therefore be regarded as important. She argues that, in her opinion, paired reading could be the medium for striking up the vital relationship between parents and teachers which is so much desired. She stresses that paired reading is not about homework but reading together for pleasure. She reports that parents comment on the strengthening of the relationship with their children and concludes by saying "As adults we sometimes forget that reading and learning to read is a cognitive and emotional process."

An inevitable corollary of the previous paragraph is that the present study has demonstrated the stress placed by many authors on the need to involve teachers in school-based research. In particular Eggleston (1979) urges that "Teachers should be in on the act when the play is written not merely witnesses of a performance." Teachers at both the schools involved in the present project were consulted about

it well before the onset of intervention, they actively participated in the parents' meetings and heve been provided with interim feedback on the findings. The benefits accruing from this are apparent in the teachers' enthusiastic and useful comments quoted above in spite of the organizational problems at Browning C.

CHAPTER 10

CONCLUSIONS

10.1. SUMMARY OF MAIN CONCLUSIONS

A summary of the main conclusions of the present study is set out below.

(a) Classical paired reading tutored by parents has a clear tendency to be the most effective technique by comparison with a control group, with simultaneous and independent reading alone, and with cross-age tutoring. This is in line with Topping's (1987b) analysis of paired reading studies.

(b) Simultaneous reading has a tendency to be less effective than classical paired reading. Topping's (1986a) "shopping list" of reading methods and the findings of Greening and Spenceley (1984 and (1987) tend to overrate simultaneous reading. Certainly in qualitative terms simultaneous reading does not appear to be a technique to be recommended without the qualification on the basis of the present study that children may find it irksome and their fluency may also suffer. In the long term it is possible that its effectiveness tails off by comparison with classical paired reading. Further investigation of these "side-effects" is desirable.

(c) Independent reading has a tendency to be less effective than classical paired reading. This finding does not confirm the conclusion of Evans (1985) or of Lindsay et

al (1985) but it does confirm the finding of Topping (1986a).

(d) There is no evidence that the improvement in comprehension is superior to the gains in reading accuracy which is contrary to the analysis of classical paired reading studies made by Topping (1987b).

(e) Parent tutoring of classical paired reading tends to be superior to cross-age tutoring but there is little to choose between parent tutoring and peer tutoring. Whilst these findings confirm Topping (1987b) the overall conclusions are still only based on a small number of studies.

(f) Tutoring of children by their peers is marginally superior to tutoring by cross-age tutors. At present there is no hard evidence from other sources to make a comparison with the findings of the present study.

(g) The reading performance of tutors did not match the performance of their pupils which is not in line with Topping's (1987d) tentative conclusions on the basis of a few studies.

(h) Irrespective of the foregoing conclusions the improvement in children's reading ability as a result of the paired reading intervention is highly significant and to a large extent justifies Topping's faith in its effectiveness.

(i) The importance of the Hawthorne Effect in this study is considerable.

(j) As measured by the MFFT, second year children who are reflective have a marked tendency to make greater reading progress than children who are impulsive over the

period of the intensive paired reading intervention. This progress was also true of the comprehension sub-tests. This finding is in line with the research summary of Blanton and Bullock (1973) who found that the relationship between reading and conceptual tempo was particularly strong in the lower primary age groups.

(k) Whereas the reading quotient of children who were not members of a public library was initially markedly inferior to the reading quotient of library members, the gap tended to close during the course of the intervention period which supports Ewing and Johnstone's finding in their development of the DART.

(l) In January 1987 the reading quotient of children was measured concurrently with the measurement of their attitude to reading and finally both tests were re-administered 9 months after the reading intervention. The reading quotient of children with a negative attitude to reading has a tendency to be less than that of children with a positive attitude to reading and the differential tended to remain constant over the duration of the present study.

(m) Similar concurrent testing from (l) showed that the reading quotient of children with a negative attitude to school has a tendency to be less than that of children with a positive attitude to school at initial testing in January 1987. This tendency became markedly greater during the course of the paired reading intervention.

(n) Similar concurrent testing from (l) also showed that the reading quotients of children with a low

estimate of their own ability are considerably less than the reading quotients of children with high estimates of their own ability - the differential remained constant over the intervention period.

(o) Children who were measured initially by the DART as having a negative attitude to reading had a tendency to improve their attitude to reading during the course of this intervention.

(p) Contrary to the findings of Topping (1987b) there is no evidence from the present study that children continue to improve their reading at an enhanced rate after the cessation of paired reading intervention though this is qualified by (q) below.

(q) There is a marked tendency for children who were initially tested with a reading quotient equal to or <90 to make consistently greater gains in reading achievement throughout the period of intervention and during the follow-up period of 9 months than children with a reading quotient >90. (This contrast was not due to the operation of a "ceiling" effect in relation to the able reader on the ERT since there was plenty of headroom available.) This is in line with a speculation by Topping at the 1988 Dewsbury Paired Reading Conference, but contrary to the findings of Morgan (1986a) and Miller et al (1986).

(r) There is no evidence from this study that boys respond more positively to paired reading than girls which is in line with the findings of Miller et al (1986) and Morgan (1986a) but contrary to the suggestion made by

Topping at the 1988 Paired Reading Conference that boys might derive greater benefit from classical paired reading.

(s) Following the analysis of Lawrence and his colleagues and the comments of Yarington (1978) it seems apparent that the "affective" factor is likely to play a crucial explanatory role for the success of classical paired reading.

(t) The analysis of the questionnaires testifies almost without exception to the effectiveness of classical paired reading as seen by parents and pupils. It illustrates the value of bringing together quantitative and qualitative data.

10.1.i. General comments

Paired reading should not be regarded in euphoric terms as the solution to all reading problems but it can be regarded as one of the most useful techniques available to augment the more analytical treatment of remedial teachers and the daily efforts of hard-pressed class teachers. It is economical in terms of resources but it does require additional input on the part of teachers where parents are being used as tutors. There is a need for fortnightly home visits to ensure that parents adhere to the basic technique, to provide reinforcement for both parent and child and to cement the threefold relationship. Generally speaking it is the "technical" implications of visiting and other contacts which paired reading studies emphasise whilst relationships take a second place instead of their being regarded as an essential complement, a feature which it is submitted the present study amply demonstrates. Indeed it may well be that

the affective aspects of the technique are as important as the "technical", cognitive aspects.

Greening and Spenceley (1984) placed their emphasis on the simultaneous mode of paired reading and charged classical paired reading with being unnecessarily complicated in that it was unnecessary to have the child reading alone with the associd signalling but there is no evidence from the present study that this is so. Indeed as shown above the simultaneous mode has a tendency to be disliked by children because it is tedious.

The bulk of paired reading initiatives appear to have taken place in the north and midlands. Paired reading has been slow to take off in the south and it may be that the very simplicity of paired reading deters educators from adopting it. How can such a simple technique be so effective when diagnostic testing allied to sophisticated remedial methods has failed? It is however encouraging to note that the United Kingdom Reading Association has published a brief paper on the subject (Lane, 1988) and books published in recent years by its main proponents have aided publicity (see Morgan, 1986 and Topping and Wolfendale, 1985). Another reason for paired reading not being adopted in some areas may be the common assumption that the technique is no different from "traditional" practices of parents hearing children read.

Statements that paired reading research has been distorted have not helped to popularize it (see Hannon and Tizard, 1987). These statements derive in part from Topping's (1986a) review of paired reading studies and some

individual studies which appeared to show that improvement in comprehension was generally in excess of improvement in reading accuracy and on occasions astonishingly so (see Miller et al, 1986; Bush, 1985; Bushell, 1982 and Arora and Shepherd, 1981). The comprehension element in the ERT is substantial but there is no evidence from the present study that children's comprehension improved relative to reading accuracy. It is submitted that the reading test review contained in the present study conclusively demonstrates that this phenomenon is almost certainly due to the shortcomings of The Neale Analysis of Reading which has been almost exclusively used in paired reading studies (see Appendix 26). All the reasons adduced for the need for a successor to the Neale, a need which should shortly be met, confirm these deficiencies. In the present study there is however a significant exception: children measured as reflective by the MFFT showed an improvement in each of the sub-tests.

10.2. FURTHER RESEARCH

The use of structured questionnaires and interviews in a study of the present type should be examined more closely. The questionnaires should have been more thoroughly piloted to elicit the "key" opinions which might have provided further evidence for example for the strength of the operation of the Hawthorne Effect across both experimental and control groups. The control group children were not questioned in the psesent study; they might have provided valuable information as to what extent they had perceived themselves as responding to the enthusiasm of

their teachers and peers. It is important to obtain further evidence as to the wisdom of continuing to use control groups as valid baseline data for the type of research exemplified by the present study (see Zdep and Irvine, 1970). The weight of evidence provided in the literature review of the Hawthorne Effect would suggest that it is likely to affect the control group whether or not measures are taken to control for its effect (see Rubeck, 1975 and Cook, 1967). An alternative would be to proceed as has been done in the present study by testing the children over the year prior to the onset of the study, if this is practicable, to establish data which would be truly baseline. It should be stressed that similar baseline data used in the present study were available for many of the children but this did not form part of the original design.

The research summaries of Miller et al (1986) and Morgan (1986a) which suggest that paired reading is not of particular benefit for delayed readers should be re-examined. The present study strongly suggests that children with a reading quotient equal to or <90 make appreciably greater reading progress after a paired reading intervention and sustain it for longer than children with a reading quotient >90. It is also apparent from recent correspondence between the author and Keith Topping who states "... we have also noted a tendency for the most retarded subjects to make the biggest gains." Considering the disillusion expressed by many writers with remedial reading techniques it is essential for further research to be undertaken with delayed/retarded readers using parents or children's peers

as tutors. It is also important to establish some criteria as to what is "maintenance of progress" after the cessation of remedial intervention.

Research into the influence of affective factors on children's progress in reading should be extended beyond the work of Lawrence (1972 and 1985), Cant and Spackman (1985) and Wooster (1986) to examine the effect of visits by teachers or other professionals on children's academic progress. It would appear to be necessary for researchers to come to an agreement as to which measures of self-concept are most appropriate before comparative studies can proceed. If teachers of remedial reading or the staff of special schools are encouraged to become involved with the use of counselling techniques this could be a fruitful area of research. With hindsight the use of a self-concept measure might also have been useful in the present research though there would clearly be some degree of overlap with the DART.

Where Browning C was concerned, in retrospect the research design is seen to be faulty. If paired reading research is confined to children in a single academic year the use of a school with split-year classes is impractical. The problems of providing adequate supervision and feedback to the children stemmed predominantly from this fact. Where Upstead P was concerned the co-ordination of the paired reading initiative devolved upon the researcher who was not attached to the school staff and who bore nearly all the work involved. Apart from the test programme there was very litle disruption of class work and minimal inconvenience for the class teachers. However it is submitted that it is well-

nigh impossible for an outside researcher working part-time to organize a peer/cross-age tutoring intervention within a school such as Browning C. It is also true that compared with the parent tutoring modes the demands upon the class teachers for peer/cross-age tutoring are greater; an additional person would be needed to ensure its smooth operation and to be on hand to resolve logistical problems such as the changing of books and the allocation of seating. It is a tribute to the "power" of paired reading that, in spite of the obvious drawbacks, progress in reading at Browning C was so marked. Generally speaking further research is needed into the relative effectiveness of peer tutoring compared with cross-age tutoring; the findings are inconclusive.

Greater care should have been given to matching pupils and tutors in Browning C. There is also further scope for research into matching pupils and tutors on the basis of compatible or disparate conceptual tempo and sociometric techniques to examine whether progress in reading is influenced. Whilst continuing to bear in mind the "limited" role of cognitive style as a determinant of reading progress (see Tamor, 1979), the present research findings do suggest that it is of significance and further research could profitably be directed in an attempt to isolate the extent of its role in paired reading. Where conceptual tempo is concerned attention should be directed to the work of Karlin (1975) outlined by Readance and Baldwin (1978) who conclude that children possessing a varying balance of conceptual tempo are sensitive to different types of reading programme.

Research could also be usefully directed to examine the optimum gap between children's reading ability abd the readability level of books. Some adult guidance might be required perhaps utilizing readability indices and thus the concept of allowing children complete freedom of choice of book would be modified.

Finally this study does give some glimmer of hope that a technique which is proving so powerful as an aid to help children generally to greater reading progress can also help the delayed reader. The way in which the quality of relationship between parent and child can be "re-discovered" or enhanced by paired reading and other forms of parent/child learning together is a salutory reminder that, when we are dealing with a child with learning difficulties we are not dealing with a problem but with a person.

REFERENCES.

Adair, J.G. (1984). The Hawthorne effect: a reconsideration of the methodological artifact. Journal of Applied Psychology, 69, 2, 334-345.

Adelman, C. and Young, M.F.D. (1985). The assumptions of educational research: the last twenty years in Great Britain. In Shipman, M. (Ed) (1985). Educational research: principles, policies and practices. The Falmer Press.

Allen, A.R. and Boraks, N. (1978). Peer tutoring: putting it to the test. The Reading Teacher, 32, 274-278.

Allen, V.L. (1976). Children as teachers: theory and research on tutoring. Academic Press.

Allen, V.L. and Feldman, R.S. (1973). Learning through tutoring: low-achieving children as tutors. The Journal of Experimental Education, 42, 1, 1-5.

Allport, B. (1937). Personality: a psychological interpretation. New York: Holt.

Anderson, R.C., Mason, J. and Shirey, L. (1984). The reading group: an experimental investigation of a labyrinth. Reading Research Quarterly, 20, 1, 6-38.

Argyle, M. (1953). The relay assembly test room in retrospect. Occupational Psychology, 27, 98-103.

Argyle, M. (1975). Bodily communication. Methuen.

Arizmendi, T., Paulsen, K. and Domino, G. (1981). The Matching Familiar Figure Test: a primary, secondary and tertiary evaluation. Journal of Clinical Psychology, 37, 812-818.

Arora, C.M.J. and Sheppard, J.R. (1982). Paired reading instruction by non-teachers' project in Kirklees. (Obtainable from Director of Educational Services, Municipal Buildings, Halifax Road, Dewsbury WF13 2AS.)

Asimov, I. (1977). The beginning of the end. Garden City, New York: Doubleday and Co. Inc.

Athey, I. (1970). Affective factors in reading. In Singer, H. and Ruddell, R. (1970). Theoretical models and processes in reading. Newark, Delaware: International Reading Association.

Athey, I. (1971). Language models and their relation to reading. Paper presented at the meeting of the International Reading Association, Atlantic City, N.J. April 19-23, 1971. ED 053 863.

Atkin, M. (1968). Stamp out non-behavioural objectives. In Hamilton, D., Jenkins, D., King, C., Macdonald, B. and Parlett, M. (Eds) (1977). Beyond the numbers game. Macmillan.

Ault, R.L., Mitchell, C. and Hartmann, D.P. (1976). Some methodological problems in reflection-impulsivity research. Child Development, 47, 227-231.

Bacon, A.W. (1976). Parent power and professional control - a case study in the engineering of client consent. Sociological Review, 24, 577-597.

Bailey, A.C. (1985). An examination of the effects of drama on the self-perception, anxiety, sociometric status and reading attainment of a group of junior children with low self-concepts. Unpublished MA Thesis, Christ Church College, Canterbury.

Bald, J. (1985a). Proof of the pudding. The Times Educational Supplement, 5th April 1985, 30.

Bald, J. (1985b). Take your partners. The Times Educational Supplement, 1st November 1985, 35-36.

Ball, S. (1985). The Hawthorne Effect. In Husen, T. and Postlethwaite, T.N. (Eds) (1985). The International Encyclopedia of Education, Vol. 4. Macmillan and Free Press.

Barrett, J. (1986). Reading with mother: a paired reading programme described and evaluated. Reading, 20, 3, 173-178.

Barrett, J.M. (1987). Paired reading - psycholinguistics in practice. Reading, 21, 3 152-158.

Bauernfeind, R. and Olson, C. (1973). Is the Hawthorne Effect in educational experiments a chimera? Phi Delta Kappan, 55, 271-273.

Baumann, J.F. (1983). A commentary on Kamil's critique of early word recognition studies: from Cattell and Huey to the psycholinguists by leaps and bounds. In Gentile, L.M., Kamil, M.L. and Blanchard, J.S. (Eds) (1983). Reading research revisited. Charles E. Merrill Publishing Co.

Beard, R. (1987). Developing reading 3-13. Hodder and Stoughton.

Becher, R.A. (1974). Research into practice. In Dockrell, W.B. and Hamilton, D. (Eds) (1980). Rethinking educational research. Hodder and Stoughton.

Becker, L.D. (1976). Conceptual tempo and the early detection of learning problems. Journal of Learning Disabilities, 9, 7, 433-442.

Beech, M.C. (1985). Review of Hunter-Grundin Literacy Profiles. In Mitchell, J.V. Jr. (Ed). The ninth mental measurements yearbook. The University of Nebraska Press.

Bennett, N. and Desforges, C. (1985). Recent advances in classroom research. Scottish Academic Press.

Bennett, S.N. (1978). Recent research on teaching: a dream, a belief and a model. British Journal of Educational Psychology, 48, 127-147.

Bentley, D. and Goodacre, E.J. (1985). British register of reading research No.10. Centre for the Teaching of Reading, University of Reading School of Education.

Bentley, D. and Goodacre, E.J. (1986). British register of reading research No.11. Centre for the Teaching of Reading, University of Reading School of Education.

Bentley, D. and Goodacre, E.J. (1987). British register of reading research No.12. Centre for the Teaching of Reading, University of Reading School of Education.

Bentley, D. and Goodacre, E.J. (1988). British register of reading research No.13. Centre for the Teaching of Reading, University of Reading School of Education.

Birmingham Child Advisory and Psychological Service (1983). Family involvement in reading. Birmingham Education Dept.

Birmingham Education Authority. (1980). The reading curriculum of the primary school. City of Birmingham Education Department.

Biscoe, M., Bradshaw, C., Clarke, S., Halliwell, M., Morgan, D., Nunn, T., Quigley, H. and Zelickman, I. (1980). London reading Test. NFER-Nelson.

Black, H.D. and de Luca, C. (1979). Collaborative research from both sides of the fence. Scottish Educational Review, 11, 2, 125-132.

Blanton, W.E. and Bullock, T. (1973). Cognitive style and reading behaviour. Reading World, 7, 276-287.

Block, J., Block, J.H. and Harrington, D.M. (1974). Some misgivings about the Matching Familiar Figure Test as a measure of reflection-impulsivity. Developmental Psychology, 10, 5, 611-632.

Blyth, W.A.L. (1967). Some relationships between home and school. In Craft, M., Rayner, J. and Cohen, L. (Eds) (1967). Linking home and school. Longman.

Board of Education. (1904). Code of regulations for public elementary schools CD 2074. In van der Eyken, W. (Ed) (1973). Education, the child and society. Penguin.

Board of Education. (1906). Report of the Consultative Committee upon questions affecting higher elementary schools. In van der Eyken, W. (Ed) (1973). Education, the child and society. Penguin.

Board of Education. (1931). Report of the Consultative Committee on the Primary School. The Hadow Report. HMSO.

Bolster, A.S. (Jr) (1983). Towards a more effective model of research in teaching. Harvard Educational Review, 53, 3, 294-308.

Borg, W.R. (1981). Applying educational research. Longman.

Borg, W.R. and Gall, M.D. (1979). Educational research: an introduction, 3rd Ed. New York, Longman.

Bowermaster, M. (1978). Peer tutoring, The Clearing House, 52, 59-60.

Bowers, A.J. and Mann, M. (1980). Bowman test of reading competence. Science Research Associates.

Braine, M. (1971). On two types of models of the internalization of grammar. In Slobin, D. (Ed) (1971). The ontogenesis of grammar. New York: Academic Press.

Bramel, D. and Friend, R. (1981). Hawthorne: the myth of the docile worker, and class bias in psychology. American Psychologist, 36, 8, 867-878.

Branston, P. and Provis, M. (1984). Caper workshop pack. West Glamorgan County Council.

Brennan, W.K. (1985). Curriculum for children with special needs. Open University.

Brent, D.E. and Routh, D.K. (1978). Response cost and impulsive word recognition errors in reading-disabled children. Journal of Abnormal Child Psychology, 6,2,211-219.

Brimer, M.A. (1965). Neale Analysis of Reading Ability. In Buros, O.K. (Ed) (1965). The sixth mental measurement yearbook. The Gryphon Press.

Brimer, M.A. and Gross, H. (1972). Wide-span reading test. Nelson.

Bronfenbrenner, U. (1974). Is early intervention effective? Facts and principles of early intervention: a summary. In Clarke, A.M. and Clarke, A.D.B. (Eds) (1976). Early experience: myth and evidence. Open Books.

Brown, M. (1979). Measuring attitude to reading - more questions than answers. Reading, 13, 1, 13-20.

Brown, R.T. (1980). Impulsivity and modelling in hyperactive and normal children. Exceptional Children, 27, 79-87.

Brown, R.T. and Quay, L.C. (1977). Reflection-impulsivity in normal and behaviour-disordered children. Journal of Abnormal Child Psychology, 5, 4, 457-462.

Bruce, P. (1986). A peer-tutoring project with class 6 - a class of nine and ten-year-olds in Holy Spirit R.C. JMI School, Heckmondwike. Paired Reading Bulletin, Spring 1986, 71-81.

Bruner, J.S. (1972). The relevance of education. Allen and Unwin.

Bryans, T., Kidd, A. and Levey, M. (1985). The King's Heath project. In Topping, K. and Wolfendale, S. (Eds) (1985). Parental involvement in children's reading. Croom Helm.

Bryant, P.E. and Bradley, L. (1980). Why children sometimes write words they do not read. In Frith, U. (Ed) (1980). Cognitive processes in spelling. Academic Press.

Bryant, P.E. and Bradley, L. (1985). Children's reading problems. Blackwell.

Bryman, A. (1984). The debate about quantitative and qualitative research: a question of method or epistemology? The British Journal of Sociology, 35, 1, 75-92.

Burdett, L. (1985). Parental involvement in reading: a comparative study of paired reading and individualized reading with poor readers. Unpublished MEd dissertation, University of Hong Kong.

Burdett, L. (1986). A study of paired reading and individualized reading in Hong Kong. Paired Reading Bulletin, Spring 1986, 53-60.

Burgess, R.G. (1985). Strategies of educational research: qualitative methods. The Falmer Press.

Burke, E. (1976). A developmental study of children's reading strategies. Education Review, 29, 30-46.

Burke, E. (1977). The probing of children's reading strategies. Educational Studies, 3, 2, 137-143.

Bush, A. (1983). Can pupils' reading be improved by involving their parents? Remedial Education, 18, 4, 167-170.

Bush, A.M. (1985). Paired reading at Deighton Junior School. In Topping, K.J. and Wolfendale, S.W. (Eds) (1985). Parental involvement in children's reading. Croom Helm.

Bush, A.M. (1987) Cross-age peer tutoring at Deighton. Paired Reading Bulletin, 3, 16-23.

Bushell, R., Miller, A. and Robson, D. (1982). Parents as remedial teachers. Journal of the Association of Educational Psychologists, 5, 9, 7-13.

Butler, L.G. (1972). A psycholinguistic analysis of the oral reading behaviour of selected impulsive and reflective second grade boys. Unpublished PhD Thesis, Ohio State University, 33/11-A, p.5960, Order No. 73-11465.

Cadmean Trust. (1986). Partnership for reading. Information from Mrs.J.M.Edwards, JP., 6, Wellesley Mansions, Edith Villas, London, W14 9AH.

Calfee, R.C., Lindamood, P. and Lindamood, C. (1973). Acoustic-phonetic skills and reading - kindergarten through twelfth grade. Journal of Educational Psychology, 64, 3, 293-298.

Calsyn, R.J. and Kenny, D.A. (1977). Self-concept of ability and perceived evaluation of others: cause or effect of academic achievement? Journal of Educational Psychology, 69, 2, 136-145.

Campbell, S.B. and Douglas, V.I. (1972). Cognitive styles and responses to the threat of frustration. Canadian Journal of Behavioural Sciences, 4, 1, 30-42.

Cant, R. and Spackman, P. (1985). Self-esteem, counselling and educational achievement. Educational Research, 27, 1, 68-70.

Carey, A. (1967). The Hawthorne studies: a radical criticism. American Sociological Review, 32, 403-416.

Carr, W. (1983). Can educational research be scientific? Journal of Philosophy of Education, 17, 1, 35-43.

Carrick-Smith, L. (1982). An investigation into the effectiveness of paired reading. Unpublished MSc thesis, University of Sheffield.

Carrick-Smith, L. (1985). A research project in paired reading. In Topping, K. and Wolfendale, S. (Eds) (1985). Parental involvement in children's reading. Croom Helm.

Carter, A. and Stokes, W. (1982). What children know about reading before they can read. Journal of Education, 164, 173-184.

Cashdan, A. and Pumfrey, P.D. (1969). Some effects of the remedial teaching of reading. Educational Research, 11, 2, 138-142.

Caudrey, A. (1985). A volunteer army steps into the firing line. Times Educational Supplement, 12th April 1985.

Chall, J. (1967). Learning to read: the great debate. New York: McGraw Hill.

Chambers, P. (1983). Democratisation and pragmatism in educational research. British Educational Research Journal, 9, 1, 21-25.

Chambers, P. and Powney, J. (1982). School-based curriculum research. British Educational Research Journal, 8, 2, 133-139.

Cherry, C. and Sayers, B. (1956). Experiments upon total inhibition of stammering by external control and some clinical results. Journal of Psychosomatic Research, 1, 233-246.

Chukovsky, K. (1963). From two to five. University of California Press.

Clark, M.M. (1979). Reading difficulties in schools. 2nd Edn. Heinemann Educational Books

Clay, M.M. (1979). Reading: the patterning of complex behaviour, 2nd Ed. Heinemann.

Clements, J.E. and Alexander, R.N. (1975). Parent training: bringing it all back home. Focus on Exceptional Children, 7, 5, 1-12.

Cloward, R.D. (1976). Teenagers as tutors of academically low achieving children: impact on tutors and tutees. In Allen, V.L. (Ed) (1976). Children as teachers: theory and research on tutoring. Academic Press.

Clymer, T. (1968). What is reading? some current concepts. In Melnik, A. and Merritt, J. (Eds) (1972). Reading: today and tomorrow. Open University Press.

Cohen, A.R. (1959). Some implications of self-esteem for social influence. In Hovland, C.I. and Janis, I.L. (Eds). Personality and persuasibility. New Haven: Yale University Press.

Coles, C.M. (1977). Counselling and reading retardation. Therapeutic Education, 5, 1, 10-19.

Conrad, E.E. (1975). The effects of tutor achievement level: reinforcement training and expectancy on peer tutoring. Arizona University, Tucson, Arizona Centre for Educational Research and Development, 18.7.75, ED 116 807.

Cook, D.L. (1962). The Hawthorne Effect in educational research. Phi Delta Kappan, 44, 116-122.

Cook, D.L. (1967). The impact of the Hawthorne Effect in experimental designs in educational research. U.S. Office of Education, Report No. 0726, Washington, D.C.

Corbishley, H. (1983). Linking professionals, voluntary organizations and parents. In De'Ath, E. and Pugh, G. (1983). Partnership paper 1: working together: parents and professionals as partners. National Children's Bureau.

Crombie, R. and Low, A. (1986). Using a paired reading technique in cross-age peer tutoring. The Paired Reading Bulletin, Spring 1986, 2, 10-15.

Crystal, D. (1984). Language handicap in children. National Council for Special Education.

Cunningham, C. and Davis, H. (1985). Working with parents: frameworks for collaboration. Open University Press.

Curtis, M.E. (1980). Development of components of reading skill. Journal of Educational Psychology, 72, 5, 656-669.

Cyster, R., Clift, P.S. and Battle, S. (1980). Parental involvement in primary schools. NFER.

Daniels, J.C. and Diack, H. (1958). Standard reading test. Collins Educational.

Davey, B. (1983). Cognitive styles and reading research: some methodological concerns and future directions. Reading Psychology, 4, 1, 65-77.

Denney, D.R. (1974). Relationship of three cognitive style dimensions to elementary reading abilities. Journal of Educational Psychology, 66, 5, 702-709.

DES. (1967). Children and their primary schools. Vol.1. The Plowden Report. HMSO.

DES. (1968). Parent/teacher relations in primary schools. Education Survey 5. HMSO.

DES. (1975). A language for life. The Bullock Report. HMSO.

DES. (1977). A new partnership for our schools. The Taylor Report. HMSO.

DES. (1978). Special educational needs. The Warnock Report. HMSO.

DES. and DHSS. (1976). Fit for the future: report of the committee on child health services. Vol. 1. The Court Report. HMSO.

Devin-Sheehan, L. and Allen, V.L. (1976). Implementing tutoring programs: some alternatives for practitioners and researchers. In Allen, V.L. (Ed) (1976). Children as teachers: theory and research on tutoring. Academic Press.

Diaper, G.R. (1985). An examination of the relationship between cognitive style and social adjustment in a group of primary school pupils within a residential school setting. Unpublished MA dissertation, Christ Church College, Canterbury, Kent.

Douglas, J.W.B. (1964). The home and the school: a study of ability and attainment in the primary school. Panther.

Doyle, S. and Lobl, A. (1987). Embedding paired reading in the curriculum. Paired Reading Bulletin, 3, 31-39.

Dulin, K.L. and Chester, R.D. (1974). A validation study of the Estes Attitude Scale. Journal of Reading, 18, 56-59.

Egan, K. (1983). Education and psychology. Methuen.

Egeland, B. (1974). Training impulsive children in the use of more efficient scanning techniques. Child Development, 45, 165-171.

Egeland, B., Bielke, P. and Kendall, P.C. (1980). Achievement and adjustment correlates of the Matching Familiar Figure Test. Journal of School Psychology, 18, 4, 361-372.

Egeland, B. and Weinberg, R.A. (1976). The Matching Familiar Figure Test: a look at its psychometric credibility. Child Development, 47, 483-491.

Eggleston, J. (1979). The characteristics of educational research: mapping the domain. British Educational Research Journal, 5, 1, 1-12.

Ehrhardt, H.B. and Corvey, S.J. (1980). An overview of cognitive style. Mountain View College, Dallas, Texas. ED 203 939.

Elder, V. (1980). Family co-operation in the development of literacy project. Unpublished paper, Centre for Urban Educational Studies, ILEA.

Erickson, L. and Otto, W. (1973). Effect of intra-list similarity and impulsivity/reflectivity on kindergarten children's word recognition performance. The Journal of Educational Research, 66, 10, 466-470.

Eska, B. and Black, K.N. (1971). Conceptual tempo in young grade school children. Child Development, 42, 505-516.

Essex Education Authority. (1984). Focus on Language, 6, Spring, 1984.

Estes, T.H. and Johnstone, J.P. (1974). Assessing attitudes to reading: a validation study. In Nacke, P. (Ed) (1974). Interaction: research and practice for college-adult reading. Clemson, South Carolina: National Reading Conference Inc. 1974.

Evans, A. (1984). Paired reading: a report on two projects. Unpublished paper, Division and Institute of Education, University of Sheffield.

Evans, A. (1985). Parental involvement in children's reading: is a structural technique necessary? SERCH (Sheffield), 7, 11-14.

Evans, C. (1978). Psychology: a dictionary of mind, brain and behaviour. Arrow.

Ewing, J. and Johnstone, M. (undated). Attitudes to reading: measurement and classification within a curricular structure. Unpublished research paper obtainable from Dundee College of Education.

Eysenck, H.J. (1978). The development of personality and its relation to learning. In Murray-Smith, S. (Ed) (1978) Melbourne Studies in Education. Melbourne University Press.

Farber, B. and Lewis, M. (1975). The symbolic use of parents: a sociological critique of educational practice. Journal of Research and Development in Education, 8, 2, 34-43.

Felman, R.S., Devin-Sheehan, L. and Allen, V.L. (1976). Children tutoring children: a critical review of research. In Allen, V.L. (Ed) (1976). Chidren as teachers: theory and research in tutoring. Academic Press.

Finch, A.J. Jr., Spirito, A. and Brophy, C.J. (1982). Reflection-impulsivity and WISC-R performance in behaviour problem children. Journal of Psychology, 3, 2, 217-221.

Fitz-Gibbon, C.T. (1985). The implications of meta-analysis for educational research. British Educational Research Journal, 11, 1, 45-49.

Flavell, J.H. (1963). The developmental psychology of Jean Piaget. New York: van Nostrand.

Flood, J.E. (1977). Parental styles in reading episodes with young children. Reading Teacher, 31, 864-867.

Fontana, D. (1981). Psychology for teachers. Macmillan Press.

Fontana, D. (1983). Individual differences in personality: trait-based versus state-based approaches. Educational Psychology, Nos. 3 and 4, 189-199.

Fox, B. and Routh, D.K. (1980). Phonemic analysis and severe reading disability in children. Journal of Psycholinguistic Research, 9, 2, 115-119.

Fox, T.G. Jr. and Stronach, I. (1986). Making research and evaluation educational by "bracketing". Cambridge Journal of Education, 16, 2, 143-150.

France, N. (1981). Primary Reading Test. NFER-Nelson.

Franke, R. H. (1979). The Hawthorne experiments: review. American Sociological Review, 44, 861-867.

Friend, P. (1980). Reading: which test? Northamptonshire Reading and Language Development Centre.

Friend, P. (1981). The use of reading tests in primary schools: a progress report. Reading, 15, 15-20.

Frith, U. (1980). Reading and spelling skills. In Rutter, M. (Ed) (1980). Developmental psychiatry. Heinemann.

Gardner, H. (1983). Frames of mind: the theory of multiple intelligences. Heinemann.

Gay, L.R. (1981). Educational research. 2nd Ed. Charles E. Merrill Publishing Co.

Georgiades, N.J. (1965). A report of a pilot study on the development of an instrument to investigate the attitude of children to reading. In Downing, J. and Brown, A.L. (Eds) (1967). The second international reading symposium. Cassell.

Georgiades, N.J. (1968). The testing of reading today. In Downing, J. and Brown, A. (1968). The third international reading symposium. Cassell.

Gillham, B. (1985). Paired reading storybooks. Methuen.

Gillham, B. (1986). Paired reading in perspective. Child Education, June 1986, 8-9.

Gipps, C. (1985). Hunter-Grundin Literacy Profile. In Levy, P. and Goldstein, M. (Ed) (1985). Tests in education. Academic Press.

Gipps, C., Steadman, S., Blackstone, T. and Stierer, B. (1983). Testing children: standardized testing in local education authorities and schools. Heinemann.

Gipps, C. and Wood, R. (1981). The testing of reading in LEA's: the Bullock Report seven years on. Educational Studies, 7, 2, 133-143.

Gittleman, R. and Feingold, I. (1983). Children with reading disorders - 1. Efficacy of reading remediation. Journal of Child Psychology and Psychiatry, 24, 2, 167-191.

(The) Godfrey Thomson Unit, University of Edinburgh (1980). Edinburgh Reading Test, Stage 2. 2nd Ed. Hodder and Stoughton.

Goldstein, K.M. and Blackman, S. (1981). Cognitive style: five approaches and relevant research. John Wiley and Sons.

Gollop, S. (1984). A paired reading project in a junior school. Focus on Language, 6, Spring 1984, 10-11. Essex Education: Language and Reading Centre.

Gonsalves, S.V. (1983). Selected bibliography on cognitive skills. Perceptual and Motor Skills, 56, 723-734.

Goodacre, E.J. (1971). Methods of teaching reading. In Chapman, L.J. and Czerniewska, P. (Eds) (1978). Reading from process to practice. Routledge and Kegan Paul.

Goodacre, E.J. (1986). Reading research review, 1984. The Reading and Language Information Centre, University of Reading.

Goodman, K.S. (1967). Reading: a psycholinguistic guessing game. Journal of the Reading Specialist, 6, 126-135.

Goodman, K.S. (1970). Behind the eye: what happens in reading. In Melnik, A. and Merritt, J. (Eds), (1972). Reading today and tomorrow. Open University Press.

Goodman, K.S. (1972). Reading: the key is in children's language. Reading Teacher, 25, 505-508.

Goodman, K.S. (1979). The know-more and the know-nothing movements in reading. Language Arts, 56, 6, 657-663.

Goodman, K.S. and Goodman, Y.M. (1979). Learning to read is natural. In Resnick, L.B. and Weaver, P.A. (Eds), (1979). Theory and practice in early reading. Lawrence Erlbaum Associates.

Goodman, Y.M. (1980). The roots of literacy. In Douglas, M.P. (Ed), (1980). Claremont Reading Conference, Claremont Graduate School, Claremont, California, 91711.

Gorman, T.P., White, J., Hargreaves, M., MacLure, M. and Tate, A. (1984). Language performance in schools: 1982 primary survey report. HMSO.

Gorman, T.P., White, J., Orchard, L. and Tate, A. (1981). Language performance in schools: primary survey report No. 1. HMSO.

Granowsky, A., Middleton, F. R. and Mumford, J.H. (1979). Parents as partners in education. The Reading Teacher, 32, 7, 826-830.

Greene, J. and D'Oliveira, M. (1982). Learning to use statistical tests in psychology. Open University Press.

Greening, M. and Spenceley, J. (1984). Paired reading made easy. INPSYCH, 11, 1, 4-11. (Bulletin of Cleveland County Psychological Service.)

Greening, M. and Spenceley, J. (1987). Shared reading: support for inexperienced readers. Educational Psychology in Practice, April 1987.

Griffiths, A. and Hamilton, D. (1984). Parent, teacher, child. Methuen.

Grigg, S. (1984). Parental involvement with reading: an experimental comparison of paired reading and listening to children read. Unpublished MSc. dissertation, University of Nottingham.

Grinder, R.E. (1978). The "New" science of education: educational psychology in search of a mission. In Farley, F.H. and Gordon, N.J. (Eds) (1981). Psychology and education: the state of the union. Berkley, CA: McCutchin Publishing Corp.

Guenther, A.A. and Mills, P.R. (1976). The relationship of cognitive style to language acquisition and selected aspects of nonverbal communication. Paper presented at the annual meeting of the Western Speech Communication Association, San Francisco, Nov. 1976. ED 130 348.

Guilford, J.P. (1965). Fundamental statistics for students of psychology and education, 4th Ed. New York: McGraw Hill Book Co.

Guilford, J.P. (1980). Cognitive styles: what are they? Educational and Psychological Measurement, 40, 715-735.

Guszak, F.J. (1967). Teacher questioning and reading. In Gentile, L.M., Kamil, M.L. and Blanchard, J.S. (Eds) (1983). Reading research revisited. Charles E. Merrill Publishing Co.

Haigh, G. (1977). Report on the pre-school "scope" project. Southampton University School of Education.

Hall, V.C. and Russell, W.J.C. (1974). Multitrait-Multimethod analysis of conceptual tempo. Journal of Educational Psychology, 66, 6, 932-939.

Halpern, H.G. (1984). An investigation of reading and conceptual tempo measures. Reading World, 24, 1, 90-96.

Halsey, A.H. (1972). Educational priority Vol 1: EPA problems and policies. HMSO.

Hannon, P. (1986). Research into how parents hear their children read. Education 3-13, 14, 1, 20-23.

Hannon, P. (1987). A study of the effects of parental involvement in the teaching of reading on children's reading test performance. British Journal of Educational Psychology, 57, 56-72.

Hannon, P.W. and Cuckle, P. (1984). Involving parents in the teaching of reading: a study of current school practice. Educational Research, 26, 1, 7-13.

Hannon, P. and Jackson, A. (1987). The Belfield reading project: final report. National Children's Bureau.

Hannon, P., Jackson, A. and Weinberger, J. (1986). Parents' and teachers' strategies in hearing young children read. Research Papers in Education, 1, 1, 6-25.

Hannon, P. and Tizard, B. (1987). Parent involvement - a no-score draw? Times Educational Supplement, 3.4.87.

von Harrison, G. and Reay, D.G. (1983). Tutoring in primary schools in the USA. Research in Education, 30, 65-69.

Hayden, H.M.R. and Fagan, W.T. (1983). Clarification strategies in joint book reading. First Language, 4, 11, Pt.2, 131-142.

Heath, A. (1980). ILEA project: a paired reading programme. ILEA.

Heckelman, R.G. (1966). Using the neurological impress remedial reading technique. Academic Therapy, 1, 235-239.

Hegarty, S., Pocklington, K. and Lucas, D. (1981). Educating pupils with special needs in the ordinary school. NFER-Nelson.

Henderson, W. and Glynn, T. (1986). A feedback procedure for teacher trainees working with parent tutors of reading. Educational Psychology, 6, 2, 159-177.

Henk, W.A. (1981). Neurological impress and reading: how and why? Paper presented at the 13th annual Three Rivers reading conference, University of Pittsburgh, PA. October 16th. 1981.

Henk, W.A. (1983). Adapting the NIM to improve comprehension. Academic Therapy, 19, 97-101.

Henk, W.A., Helfeldt, J.P. and Platt, J.M. (1986). Developing reading fluency in learning disabled children. Teaching Exceptional Children, Spring 1986, 202-206.

Hewison, J. (1982). Parental involvement in the teaching of reading. Remedial Education, 17, 4, 156-162.

Hewison, J. (1985). Edinburgh Reading Tests. In Levy, P. and Goldstein, H. (Eds) (1985). Tests in education. Academic Press.

Hewison, J. (1987). The Haringey reading project: long term effects of parental involvement in children's reading. Paired Reading Bulletin, 3, 50-53.

Hewison, J. and Tizard, J. (1980). Parental involvement and reading attainment. British Journal of Educational Psychology, 50, 209-215.

Hiebert, E.H. (1981). Developmental patterns and interrelationships of preschool children's print awareness. Reading Research Quarterly, 16, 2, 236-260.

Hiebert, E.H. (1983). An examination of ability grouping for reading instruction. Reading Research Quarterly, 18, 2, 231-255.

Hittleman, D.R. (1978). Developmental reading: a psycholinguistic perspective. Chicago, Rand McNally Publishing Co.

Hogan, P. (1980). A critique of educational research. Oxford Review of Education, 6, 2, 141-153.

Hood, J.E., Kendall, J.R. and Roettger, D.M. (1973). An analysis of oral reading behaviour of reflective and impulsive beginning readers. Paper presented at the annual meeting of the American Educational Research Assn. New Orleans, Louisiana, Feb.5 - March 1, 1973. ED 078 376.

Horgan, D. (1981). Learning to tell jokes: a case study of metalinguistic abilities. Journal of Child Language, 8, 217-224.

Horney, K. (1950). Neurosis and human growth. New York: Norton.

Hunter-Carsch, M. and Cortazzi, M. (1986). Starting paired reading in the classroom. Reading, 20, 1, 36-42.

Hunter-Grundin, E. and Hunter-Grundin, H.U. (1980). Hunter-Grundin literacy profiles. Test Agency.

Inner London Education Authority. (1968). Home and school. ILEA.

Inner London Education Authority. (1985). Improving primary schools: the Thomas report. ILEA.

Ives, J.P., Bursuk, L.Z. and Ives, S.A. (1979). Word identification techniques. Chicago: Rand McNally Publishing Co.

Jackson, A. and Hannon, P. (1981). The Belfield reading project. Belfield Community Council, Samson St., Rochdale.

Jackson, P.W. (1977). The promise of educational psychology. In Farley, F.H. and Gordon, N.J. (Eds) (1981). Psychology and education: the se of the union. Berkeley, CA: McCutchan Publishing Corporation.

Jenkinson, M.D. (1969). Sources of knowledge for theories of reading. In Melnik, A. and Merritt, J. (Eds) (1972). Reading: today and tomorrow. University of London Press Ltd.

Jones, J.M. (1987). Hawarden infants' parental involvement project. Paired Reading Bulletin, 3, 54-61.

Jones, J.R. (1981). Advising parents on reading. Reading, 15, 27-30.

Jungnitz, G. (1984). A descriptive and comparative study of a parental involvement in reading project with Asian families. Unpublished MA Thesis, University of York.

Jungnitz, G., Olive, S. and Topping, K.J. (1983). The development and evaluation of a paired reading project. Journal of Community Education, 2, 4, 14-22.

Kagan, J. (1965). Reflection-impulsivity and reading ability in primary grade children. Child Development, 36, 609-628.

Kagan, J. (1976). Monographs of the Society for Research in Child Development. Serial No.168, 41, 5, 48-52.

Kagan, J. (1982). The emergence of self. Journal of Child Psychology and Psychiatry, 23, 4, 363-381.

Kagan, J. and Messer, S.B. (1975). A reply to "Some misgivings about the Matching Familiar Figure Test as a measure of reflection-impulsivity." Developmental Psychology, 11, 2, 244-248.

Kagan, J., Moss, H.A. and Sigel, I.E. (1963). Psychological significance of styles of conceptualization. Monographs of the Society for Research in Child Development, 28, 2, 73-112.

Kagan, J., Pearson, L. and Welch, L. (1966). Modifiability of an impulsive tempo. Journal of Educational Psychology, 57, 6, 359-365.

Katz,P., Zigler, E. and Zelk, S.R. (1975). Children's self-image disparity. Developmental Psychology, 11, 546-550.

Kennedy, L.D. and Halinski, R.S. (1975). Measuring attitudes: an extra dimension. Journal of Reading, 18, 7, 518-522.

Kennedy, P.H. (1985). Review of Hunter-Grundin Literacy Profiles. In Mitchell, J.V. Jr. (Ed) (1985). The ninth mental measurements yearbook. The University of Nebraska Press.

Kent County Council Education Committee. (1972). The Kent Reading Test. Manual of instructions. KCC.

Kirby, P. (1983). Reading tests: a critical review. Kent Reading and Language Development Centre, Christ Church College, Canterbury, Kent.

Kitwood, T. (1976). Educational research and its standing as science. Studies in Higher Education, 1, 1, 69-82.

Krouse, J., Gerber, M.M. and Kauffman, J.M. (1981). Peer tutoring: procedures, promises and unresolved issues. Exceptional Educational Quarterly, 1, 4, 107-115.

Landsberger, H.A. (1958). Hawthorne revisited. Cornell University Press.

Lane, R. (1988). Paired reading. Reading and Language Development Flyer, Series 2, No. 5. United Kingdom Reading Association.

Latham, W. (1968). Are today's teachers adequately trained for the teaching of reading? In Melnik, A. and Merritt, J. (Eds) (1972). Reading today and tomorrow. Open University Press.

Lather, P. (1986). Research as praxis. Harvard Educational Review, 56, 3, 257-273.

Lawrence, D. (1971). The effects of counselling on retarded readers. Educational Research, 13, 2, 119-124.

Lawrence, D. (1972). Counselling of retarded readers by non-professionals. Educational Research, 15, 1, 48-51.

Lawrence, D. (1981). The development of self-esteem questionnaire. British Journal of Educational Psychology, 51, 245-251.

Lawrence, D. (1985). Improving self-esteem and reading. Educational Research, 27, 3, 194-200.

Lawrence, D. and Blagg, N. (1974). Improved reading through self-initiated learning and counselling. Remedial Education, 9, 2, 61-63.

Lees, E.A. (1986). A cognitive developmental analysis of reading skills in good and poor readers. Paper presented to British Psychological Society Developmental Psychology Section Annual Conference 19th-22nd September, 1986.

Levine, M. (1974). Scientific method and the adversary model: some preliminary thoughts. American Psychologist, 29, 9, 661-676.

Levy, P. and Goldstein, M. (1985). Tests in education. Academic Press.

Lewkowicz, N.K. (1980). Phonemic awareness training: what to teach and how to teach it. Journal of Educational Psychology, 72, 5, 686-700.

Liberman, I.Y., Shankweiler, D., Liberman, A.M., Fowler, C. and Fischer, F.W. (1977). Phonetic segmentation and recoding in the beginning reader. In Reber, A.S. and Scarborough, D.L. (Eds) (1977). Towards a psychology of reading. Hillsdale, Erlbaum.

Lindsay, G., Evans, A. and Jones, B. (1985). Paired reading versus relaxed reading: a comparison. British Journal of Educational Psychology, 55, 304-309.

Litchfield, M. (1986). Cross-age tutoring in the primary school. Literary Support Service, Leicestershire Education Committee.

Liverpool Education Department. (1982-1984) Liverpool Support Programme. Liverpool Education Dept.

Livesley, W.J. and Bromley, D.B. (1973). Person perception in childhood and adolescence. Wiley.

Logan, J.W. (1983). Cognitive styles and reading. Reading Teacher, 36, 7, 704-707.

Lopez, L.C., Clark, P.M. and Winer, G.A. (1979). The relationship of two cognitive styles to reading speed and comprehension. Journal of Genetic Psychology, 135, 229-235.

Lovell, K., Byrne, C. and Richardson, B. (1963). A further study of the educational progress of children who had received remedial education. British Journal of Educational Psychology, 33, 1, 3-9.

Lundberg, I., Oloffson, A. and Wall, S. (1980). Reading and spelling skills in the first school years predicted from phonemic awareness skills in kindergarten. Scandinavian Journal of Psychology, 21, 159-173.

Lundsteen, S.W. (1977). On developmental relations between language-learning and reading. Elementary School Journal, 77, 3, 192-203.

Mackworth, J.F. (1976). Information processing models of reading: a developmental approach. Paper presented at the 21st annual meeting of the International Reading Association, Anaheim, California. May, 1976, ED 123 580.

Macleod, F. (1985). Parents in partnership. Community Education Development Centre, Coventry.

Maclure, S. (1970). One hundred years of London education. Allen Lane, Penguin Press.

Margolis, H., Peterson, N. and Leonard, H.S. (1978). Conceptual tempo as a predictor of first-grade reading achievement. Journal of Reading Behaviour, 10, 359-362.

Marsh, G. and Mineo, R.J. (1977). Training pre-school children to recognise phonemes in words. Journal of Educational Psychology, 69, 6, 748-753.

McKinney, J.D. (1975). Problem solving strategies in reflective and impulsive children. Journal of Educational Psychology, 67, 6, 807-820.

McLeod, J. and Unwin, D. (1970). GAP Reading Comprehension Test. Heinemann Educational.

McNaughton, S. and Glynn, T. (1981). Delayed versus immediate attention to oral reading errors: effects on accuracy and self-correction. Educational Psychology, 1, 1, 57-65.

McNeill, D. (1970). The acquisition of language. New York: Harper and Row.

Meek, M. (1982). Learning to read. The Bodley Head.

Meighan, R. (1981). A new teaching force? Some issues raised by seeing parents as educators and the implications for teacher education. Educational Review, 33, 2, 133-142.

Melnik, A. and Merritt, J. (1972a). (Eds). The reading curriculum. University of London Press Ltd.

Melnik, A. and Merritt, J. (1972b) (Eds). Reading: today and tomorrow. University of London Press Ltd.

Messer. S.B. (1976). Reflection-impulsivity: a review. Psychological Bulletin, 83, 6, 1026-1052.

Messer, S.B. and Brodzinsky, D.M. (1979). The relation of conceptual tempo to agression and its control. Child Development, 50, 758-766.

Messick, S. (1982). Cognitive styles in educational practice. An unpublished research report obtainable from Educational Testing Service, Princeton, NJ.

Miller, A. (1981). Approaches to the failing reader: a problem of paradigm competition. Remedial Education, 16, 2, 71-76.

Miller, A. (1987). Is there still a place for paired reading? Educational Psychology in Practice, April 1987, 38-43.

Miller, A., Robson, D. and Bushell, R. (1985). The development of paired reading in Derbyshire. In Topping, K. and Wolfendale, S. (Eds) (1985). Parental involvement in children's reading. Croom Helm.

Miller, A., Robson, D. and Bushell, R. (1986). Parental participation in paired reading: a controlled study. Educational Psychology, 6, 3, 277-284.

Mischel, W. (1977). On the future of personality measurement. American Psychologist, April 1977, 246-254.

Moray House College of Education. (1985). Edinburgh Reading Tests Stage 3. Hodder and Stoughton.

Morgan, R.T.T. (1976). "Paired-reading" tuition: a preliminary report on a technique for cases of reading deficit. Child Care, Health and Development, 2, 13-28.

Morgan, R. (1984). Behavioural treatments with children. William Heinemann Medical Books Ltd.

Morgan, R. (1985). Paired reading: origins and future. In Topping, K. and Wolfendale, S. (Eds) (1985). Parental involvement in children's reading. Croom Helm.

Morgan, R. (1986a). Paired reading - history and future. The Paired Reading Bulletin, 2, 2-4.

Morgan, R. (1986b). Helping children read: the paired reading handbook. Methuen.

Morgan, R. and Gavin, P. (1987). A trial of paired reading tuition. Support for Learning, (in press).

Morgan, R. and Lyon, E. (1979). "Paired reading" - a preliminary report on a technique for parental tuition of reading-retarded children. Journal of Child Psychology and Psychiatry, 20, 151-160.

Morris, J. (1966). Standards and progress in reading. NFER.

Morris, J.M. (1972). The first "R": yesterday, today and tomorrow. In Melnik, A. and Merritt, J. (Eds) (1972). Reading: today and tomorrow. University of London Press Ltd.

Morton-Williams, C. (1967). The survey of parental attitude and circumstances. In Croft, M. (Ed) (1970). Family, class and education. Longman.

Musgrove, F. (1967). The "good" home. In Croft, M. (Ed) (1970). Family, class and education. Longman.

Neale, M.D. (1966). Neale Analysis of Reading Ability: manual of directions and norms. 2nd Edn. Macmillan Educational.

Newson, J. and Newson, E. (1963). Infant care in an urban community. George Allen and Unwin.

Ninio, A. and Bruner, B. (1978). The achievements and antecedents of labelling. Journal of Child Language, 5, 1-15.

Nisbet, J. (1974). Educational research: the state of the art. In Dockrell, W.B. and Hamilton, D. (Eds) (1980). Rethinking educational research. Hodder and Stoughton.

Nisbet, J.D. and Entwistle, N.J. (1973). The psychologist's contribution to educational research. In Taylor, W. (Ed) (1973). Research perspectives in education. Routledge and Kegan Paul.

Nottingham Education Department. (1985). Paired reading teachers' handbook, parents' handbook and diary. Nottinghamshire County Council.

Olofsson, A. and Lundberg, I. (1983). Can phonemic awareness be trained in kindergarten? Scandinavian Journal of Psychology, 24, 35-44.

Osgood, C.E., Suci, G.J. and Tannenbaum, P.H. (1985). The measurement of meaning. Urbana, University of Illinois Press.

O'Sullivan, D. (1980). Teachers' views on the effects of the home. Educational Research, 22, 138-142.

Otto, J. (1982). The new debate in reading. The Reading Teacher, 36, 1, 14-18.

Paolitto, D.P. (1976). The effect of cross-age tutoring on adolescence: an enquiry into theoretical assumptions. Review of Educational Research, 46, 2, 215-237.

Parsons, H.M. (1974). What happened at Hawthorne? Science, 183, 922-932.

Parsons, H.M. (1978). What caused the Hawthorne Effect? A scientific detective story. Administration and Society, 10, 3, 259-281.

Parsons, H.M. (1982). More on the Hawthorne Effect. American Psychologist, 37, 7, 856.

Pellegrini, A.D. (1982). Learning through verbal interaction: the effects of three conceptual conflict strategies on preschoolers' associative fluency. Journal of Applied Developmental Psychology, 3, 67-80.

Pennock, G.A. (1929). Industrial research at Hawthorne. Personnel Journal, 8, 296-313.

Peters, R.de V. and Barnfield, G.A. (1980). Reflection-impulsivity and social reasoning. Unpublished doctoral dissertation, Queen's University, Ontario, Canada. ED 206 396.

Pflaum, S.W., Walberg, H.J., Karegianes, M.L. and Rasher, S.P. (1980). Reading instruction: a quantitative analysis. Educational Researcher, 9, 12-18.

Piaget, J. (1984). The construction of reality in the child. New York, Basic Books.

Pilling, D. and Pringle, M.K. (1978). Controversial issues in child development. London: Elek.

Pitchford, M. and Taylor, P. (1983). Paired reading: previewing and independent reading. Unpublished paper, Leeds Psychological Service.

Pitts, M.M. and Thompson, B. (1984). Cognitive styles as mediating variables in inferential comprehension. Reading Research Quarterly, 19, 4, 426-435.

Plant, R.M. (1986). Reading research: its influence on classroom practice. Educational Research, 28, 126-131.

Pumfrey, P.D. (1985a). Reading: tests and assessment techniques. 2nd. Edn. Hodder and Stoughton.

Pumfrey, P.D. (1985b). Neale Analysis of Reading Ability. In Levy, P. and Goldstein, M. (1985). Tests in education. Academic Press.

Pumfrey, P.D. (1986). Paired reading: promises and pitfalls. Educational Research, 28, 89-94.

Pumfrey, P.D. (1987). A critique of paired reading. Paired Reading Bulletin, 3, 62-66.

Pumfrey, P.D. and Dixon, E. (1970). Junior children's attitude to reading: comments on three measuring instruments. Reading, 4, 2, 19-26.

Quicke, J. (1982). The cautious expert: an analysis of developments in the practice of educational psychology. Open University Press.

Raban, B. (1983). Guides to assessment in education: reading. Macmillan.

Radcliffe, D. (1980). Paired reading involving non-teachers. Obtainable from Deighton County Junior School, Deighton Rd., Huddersfield, HD2 1JP.

Rathbone, M. and Graham, N.C. (1981). Parent participation in the primary school. Educational Studies, 7, 2, 145-150.

Readence, J.E. and Baldwin, R.S. (1978). The relationship of cognitive style and phonics instruction. Journal of Educational Research, 72, 44-52.

Readence, J.E. and Searfoss, L.W. (1976). The impulsivity/reflectivity dimension of cognitive style. Reading World, 16, 2, 88-96.

Reading School of Education. (1983). Parents in partnership. Reading School of Education, Centre for the Teaching of Reading.

Roberts, T. (1979). Reflection-impulsivity and reading ability in seven-year-old children. British Journal of Educational Psychology, 49, 311-315.

Robinson, A. (1985). Reading: parents, children and teachers. National Children's Bureau.

Robinson, H.M. (1966). The major aspects of reading. In Robinson, H.A. (Ed) (1966). Reading: seventy-five years of progress. The University of Chicago Press.

Robinson, H.M. (1975). Insights from research: children's behaviour while reading. In Page, W.D. (1975). Help for the reading teacher: new directions in research. National Conference on Research in English. ERIC Clearinghouse in Reading and Communication Skills, National Institute of Education, Urbana, Illinois.

Robson, D., Miller, A. and Bushell, R. (1984). The development of paired reading in High Peak and West Derbyshire. Remedial Education, 19, 4, 177-183.

van Roekel, B.H. (1985). Edinburgh Reading Tests. In Mitchell, J.V. Jr. (Ed) (1985). The ninth mental measurements yearbook. The University of Nebraska Press.

Roethlisberger, F.J. and Dickson, W.J. (1941). Management and the worker. Harvard University Press.

Roettger, D., Szymczuk, M. and Millard, J. (1979). Validation of a reading attitude scale for elementary students and an investigation of the relationship between attitude and achievement. Journal of Educational Research, 72, 138-142.

Rogers, C.R. (1951). Client centered therapy. Boston: Houghton Mifflin.

Rogers, R. (1980). Crowther to Warnock: how fourteen reports tried to change children's lives. Heinemann.

Rosenshine, B.V. (1978). Review of teaching styles and pupil progress. American Educational Research Journal, 15, 163-169.

Rosenthal, R. (1976). Experimenter effects in behavioural research. New York: Irvington Publishers Inc.

Roser, N.L. (1985). Edinburgh Reading Tests. In Mitchell, J.V. Jr. (Ed) (1985). The ninth mental measurements yearbook. The University of Nebraska Press.

Rubeck, P.A. (1975). Hawthorne concept - does it effect reading progress? The Reading Teacher, 28, 375-379.

Rudduck, J. (1985). The improvement of the art of teaching through research. Cambridge Journal of Education, 15, 3, 123-126.

Rutter, M. (1974). Emotional disorder and educational underachievement. Archives of Diseases of Childhood, 49, 249-256.

Rutter, M. (1985). Family and school influences on cognitive development. Journal of Child Psychology and Psychiatry, 26, 5, 683-704.

Ryan, B.F., Joiner, B.L. and Ryan, T.A. Jr. Minitab handbook 2nd. Ed. Boston: Duxbury Press.

Salkind, N.J. (1978). The development of norms for the MFFT. Catalogue of Selected Documents in Psychology, 8, 61, Ms1718.

Salmon, D. (1932). The practical parts of Lancaster's improvements and Bell's experiments. Cambridge University Press.

Saracho, O.N. (1983). Assessing individual differences in young children. Studies in Educational Evaluation, 8, 229-263.

Sarbin, T.R. (1976). Cross-age tutoring and social identity. In Allen, V.L. (Ed) (1976). Children as teachers: theory and research on tutoring. Academic Press.

Saretsky, G. (1972). The OEO P.C. experiment and the John Henry effect. Phi Delta Kappan, 53, 579-581.

Sawyer, D. (1974). The diagnostic mystique - a point of view. The Reading Teacher, 27, 555-561.

Scheirer, M.A. and Kraut, R.E. (1979). Increasing educational achievement via self-concept change. Review of Educational Research, 49, 1, 131-150.

Schonell, F.J. and Schonell, F.E. (1942). Schonell Reading Tests. Oliver and Boyd.

Scott, E. and Annesley, F.R. (1976). Some implications of cognitive style for reading achievement and curriculum design. Paper presented at the International Reading Association World Congress, Singapore, 1976, ED 200 912.

Scott, J. (1983). Process evaluation of paired reading. Occasional papers of the Division of Educational and Child Psychology, 7, 1, 82. British Psychological Society.

Scottish Council for Research in Education. (1976). Burt Word Reading Test, 1974 Revision. Hodder and Stoughton.

Selkirk, K.E. (1979). Ready guide 29: Analysis of variance. University of Nottingham School of Education.

SERCH (Sheffield Educational Research). (1984). Current highlights. Issue No.6. Education Department, City of Sheffield.

Shapiro, J.E. (1976). The effects of visual discrimination training on reading readiness test performance of impulsive first grade boys. Journal of Educational Research, 69, 9, 338-340.

Shapp, M.J. and Kline, E.P. (1975). Attitudes towards reading scale. Pennsylvania State Department of Education, Bureau of Curriculum Studies, Harrisburg. ED 117 647.

Sharpley, A.M. and Sharpley, C.F. (1981). Peer tutoring: a review of the literature. Collected Original Sources in Education, 5, 3, 7-11.

Sharrock, A. (1968). Relations between home and school. Educational Research, 10, 3, 185-196.

Sharron, H. (1987). Changing children's minds. Souvenir Press Ltd.

Shatter, F. (1956). An investigation of the effectiveness of a group therapy program including the child and his mother, for the remediation of reading disability. Unpublished doctoral dissertation. New York University.

Shavelson, R.J. and Bolus, R. (1982). Self-concept: the interplay of theory and methods. Journal of Educational Psychology, 74, 1, 3-17.

Shipman, M. (1985). Educational research principles, policies and practices. The Falmer Press.

Simm, T. (1986). The long-term results of remedial teaching of reading. Educational Psychology in Practice, January 1986, 142-147.

Smith, F. (1977). Making sense of reading - and of reading instruction. In Chapman, J. and Czerniewska, P. (Eds) (1978). Reading from process to practice. Routledge and Kegan Paul.

Smith, F. (1982). Understanding reading. 3rd. Edn. Holt, Rineheart and Winston.

Smith, F. (1985). Reading. 2nd. Edn. Cambridge University Press.

Smith, F. and Goodman, K.S. (1971). On the psycholinguistic method of teaching reading. Elementary School Journal, 177-181.

Soltis, J.F. (1984). On the nature of educational research. Educational Researcher, 13, 10, 5-10.

Sones, G.K. (1973). Relationship of cognitive styles and reading readiness in kindergarten children. Unpublished DEd thesis, University of California, Los Angeles, 34/06-A p3161. Order No. 73-28984.

Sonnenfeld, J. (1982). Clarifying critical confusion in the Hawthorne hysteria. American Psychologist, 37, 12, 1397-8.

Sousley, S.A. and Gargiulo, R.M. (1981). Effect of conceptual tempo on kindergarten reading readiness. Perceptual and Motor Skills, 53, 127-134.

Southgate, V., Arnold, H. and Johnson, S. (1981). Extending beginning reading. Heinemann Educational Books.

Spache, E.B. (1976). 2nd Edn. Reading activities for child involvement. Boston: Allyn and Bacon Inc.

Spache, G.D. (1954). Personality characteristics of retarded readers as measured by the picture-frustration study. Educational and Psychological Measurement, 14, 186-192.

Spache, G.D. (1957). Personality patterns of retarded readers. Journal of Educational Research, 50, 461-469.

Spalding, B., Drew, R., Ellbeck, J., Livesey, J., Musset, M. and Wales, D. (1984). "If you want to improve your reading ask your mum" - an attempt to involve parents in the reading process at secondary age level. Remedial Education, 19, 4, 157-161.

Spooncer, F.A. (1976). The development of reading. Hodder and Stoughton.

Spooncer, F.A. (1983). Testing for teaching. Hodder and Stoughton.

Stagner, R. (1982). The importance of historical context. American Psychologist, 37, 7, 856.

Stainback, W.C., Stainback, S.B. and Lichtward, F. (1975). The research evidence regarding the student-to-student approach to individualized instruction. Educational Technology, 15, 54-56.

Stanovich, K.E. (1984). The interactive-compensatory model of reading: a confluence of developmental, experimental and educational psychology. Remedial and Special Education, 5, 3, 11-19.

Steadman, S. and Gipps, C. (1984). Teachers and testing: pluses and minuses. Educational Research, 26, 2, 121-126.

Stenhouse, L. (1980). The study of samples and the study of cases. British Educational Research Journal, 6, 1, 1-6.

Stewart, L. (1989). Paired reading projects in Scotland. Times Educational Supplement, 17.2.1989.

Stierer, B. (1984), Parents and reading. Advisory Centre for Education information sheet.

Stierer, B. (1985). School reading volunteers: results of a postal survey of primary school headteachers in England. Journal of Research in Reading, 8, 1, 21-31.

Stott, D.H. (1974). Bristol Social Adjustment Guide Manual. 5th Edn. Hodder and Stoughton.

Surkes, S. (1987). Parental help reaps lasting benefits. Times Educational Supplement, 16.1.87.

Swinson, J. (1985). A parental involvement project in a nursery school. Educational psychology in Practice, April 1985, 19-22.

Swinson, J.M. (1986). Paired reading: a critique. Support for Learning, 1, 2, 29-32.

Tamor, L. (1979). Cognitive style and reading: the interrelationship of four cognitive styles. Unpublished PhD thesis, University of California at Berkeley.

Taylor, P.H. (1966). Does initial training prepare teachers to take part in educational research? Educational Research, 9, 1.

Thomas, G. (1987). Going public. Times Educational Supplement, 2.1.87.

Times Educational Supplement, Editorial, 16.1.81.

Tizard, B., Mortimore, J. and Burchell, B. (1981). Involving parents in nursery and infants' schools. Grant McIntyre Ltd.

Tizard, J., Schofield, W.N. and Hewison, J. (1982). Symposium: reading collaboration between teachers and parents in assisting children's reading. British Journal of Educational Psychology, 52, 1-15.

Toepritz, P.I. (1982). A study of parent-child interaction in a paired reading project. Unpublished MSc (Educational Psychology) thesis, University of Sheffield.

Tomlinson, S. (1984). Home and school in multicultural Britain. Batsford.

Topping, K.J. (1977). An evaluation of the long-term effects of remedial teaching. Remedial Education, 12, 2, 84-86.

Topping, K.J. (1984). Paired reading. Child Education, 61, 12, 10-11.

Topping, K.J. (1985a). Parental involvement in reading: theoretical and empirical background. In Topping, K J. and Wolfendale, S. (Eds) (1985). Parental involvement in children's reading. Croom Helm.

Topping, K.J. (1985b). Paired reading: setting up a school-based project. Published by Kirklees Psychological Services, Director of Educational Services. Kirklees Metropolitan Council, Oldgate House, 2 Oldgate, Huddersfield, HD1 6QW, West Yorkshire.

Topping, K.J. (1985c). Paired Reading Bulletin No.1. Obtainable from address in Topping, K.J. (1985b).

Topping, K.J. (1985d). Paired Reading. Child Education, 62, 1, 10-11.

Topping, K.J. (1985e). Review and prospect. In Topping, K.J. and Wolfendale, S. (Eds) (1985). Parental involvement in children's reading. Croom Helm.

Topping, K.J. (1985f). An introduction to behavioural methods. In Topping, K.J. and Wolfendale, S. (Eds) (1985). Parental involvement in children's reading. Croom Helm.

Topping, K.J. (1986a). Parents as educators. Croom Helm.

Topping, K.J. (1986b). Which parental involvement in reading scheme? - a guide for practitioners. Paired Reading Bulletin,2, 61-66. Obtainable from address in Topping, K.J. (1985b).

Topping, K.J. (1986c). Paired Reading Bulletin No.2 Spring 1986. Obtainable from address in Topping, K.J. (1985b).

Topping, K.J. (1986d). Technical review of New Macmillan Reading Analysis. Paired Reading Bulletin, 2, 87-89. Obtainable from address in Topping (1985b).

Topping, K.J. (1986e). Effective service delivery: training parents as reading tutors. School Psychology International 7, 4, 231-236.

Topping, K.J. (1987a). Paired Reading Bulletin. No.3 Spring 1987. Obtainable from address in Topping, K.J. (1985b).

Topping, K.J. (1987b). Paired reading makes a comeback! Special Children, March 1987.

Topping, K.J. (1987c). A reply to Hannon and Tizard. Times Educational Supplement, 17.4.87.

Topping, K.J. (1987d). Paired reading: a powerful technique for parent use. The Reading Teacher, 40, 7, 608-614.

Topping, K.J. (1987e). Peer tutored paired reading: outcome data from ten projects. Educational Psychology, 7, 2, 133-145.

Topping, K.J. (1988a). Paired Reading Bulletin No.4, Obtainable from address in Topping, K.J. (1985b).

Topping, K.J. (1988b). The peer tutoring handbook. Cambridge, Massachusetts: Brookline Books.

Topping, K.J., Mallinson, A., Gee, A. and Hughes, R. (1985). Paired reading: a therapeutic technique for maladjusted children. Maladjusted and Therapeutic Education, 3, 3, 52-55.

Topping, K.J. and NcKnight, G. (1984). Paired reading and parent power. Special Education: Forward Trends, 11, 3, 12-15.

Topping, K.J. and Whiteley, M. (1988). Sex differences in the effectiveness of peer tutoring. Paired Reading Bulletin, 4, 16-23.

Topping, K.J. and Wolfendale, S. (Eds) (1985). Parental involvement in children's reading, Croom Helm.

Townsend, D. (1981). Reading and the home, Reading, 15, 48-55.

Townsend, J. (1986). An experiment using paired reading with peer tutors vs. parent tutors at High Bank First School. The Paired Reading Bulletin, 2, 10-15.

Trelease, J. (1984). The read aloud handbook. Penguin.

Tunmer, W.E. and Fletcher, C.M. (1981). The relationship between conceptual tempo, phonological awareness and word recognition in beginning readers. Journal of Reading Behaviour, 13, 2, 173-185.

Tunmer, W.E. and Nesdale, A.R. (1985). Phonemic segmentation skill and beginning reading. Journal of Educational Psychology, 77, 4, 417-427.

Vincent, D., Green, L., Francis, J. and Powney, J. (1983). A review of reading tests. NFER-Nelson.

Vincent, D. and de la Mare, M. (1985). New Macmillan Reading Analysis. Macmillan.

Vincent, T. (1985). The teaching and testing of reading. NFER.

Volpe, R. (1981). Knowledge from theory and practice. Oxford Review of Education, 7, 1, 41-51.

Walker, N.W. (1986). Whatever happened to the norms for the Matching Familiar Figure Test? Perceptual and Motor Skills, 63, 1235-1242.

Wall, W.D. (1947). The opinions of teachers on parent-teacher co-operation. British Journal of Educational Psychology, 17, 2, 97-113.

Wallach, L., Wallach, M.A., Dozier, M.G. and Kaplan, N.E. (1977). Poor children learning to read do not have trouble with auditory discrimination but do have trouble with phoneme recognition. Journal of Educational Psychology, 69, 1, 36-39.

Waller, W. (1961). The sociology of teaching. New York: Russell and Russell.

Wareing, L. (1983). Comparison of the relative merits of three methods of parental involvement in reading. Unpublished MSc (Educational Psychology) thesis, North East London Polytechnic.

Wareing, L. (1985). A comparative study of three methods of parental involvement in reading. In Topping, K.J. and Wolfendale, S. (Eds) (1985). Parental involvement in reading, Croom Helm.

Watts, A.F. (1948). Holborn Reading Scale. Harrap.

Watts, A.F. (1953). NFER English Progress Test A. NFER-Nelson.

Watts, A.F. (1978). NFER Reading Test AD. NFER-Nelson.

Webb, M., Webb, T. and Eccles, G. (1985). Parental participation in the teaching of reading. Remedial Education, 20, 2, 86-91.

Weinberger, J., Jackson, A. and Hannon, P. (1986a). Involving parents in the teaching of reading: will they respond? Reading, 20, 3, 179-183.

Weinberger, J., Jackson, A. and Hannon, P. (1986b). Variation in take-up of a project to involve parents in the teaching of reading. Educational Studies, 12, 2, 159-174.

Well, A.D. and Pollatsek, A. (1981). Word processing in reading: a commentary on the papers. Visible Language, 15, 3, 287-308.

Westland, G. (1978). Current crises in psychology. Heinemann.

Wheldall, K. and Mettem, P. (1985). Behavioural peer tutoring: training 16-year old tutors to employ the "pause, prompt and praise" method with 12-year old remedial readers. Educational Psychology, 5, 1, 27-44.

White, J. (1985). Is psychology still irrelevant? Times Educational Supplement, 27.12.85.

Whitehead, T.N. (1938). The industrial worker. Cambridge: Harvard University Press.

Whiteley, M. (1986). The McMillan Reading Analysis: a preliminary evaluation. The Paired Reading Bulletin, 2, 85-86.

Whyte, W.F. (1978). Review of "The elusive phenomena": Fritz J. Roethlisberger, 1977, Cambridge: Harvard University Press. Human Organization, 37, 412-420.

Widlake, P. (1984). How to reach the hard to teach. Open University Press.

Widlake, P. and MacLeod, F. (1984). Raising standards. Community Education Development Centre, Coventry Local Education Authority.

Williams, G. (1970). Children and their books. Gerald Duckworth and Co. Ltd.

Winter, S. (1986). Peers as paired reading tutors. British Journal of Special Education, 13, 3, 103-106.

Winter, S. and Low, A. (1984). The Rossmere peer tutor project. Behavioural Approaches with Children, 8, 2, 62-65.

Witkin, H.A. (1965). Psychological differentiation and forms of pathology. Journal of Abnormal Psychology, 70, 5, 317-336.

Witkin, H.A. (1978). Cognitive styles in personal and cultural adaptation. Clark University Press.

Wolfendale. S. (1983). A framework for action: professionals and parents as partners. In De'Ath, E. and Pugh, G. (1983). Partnership paper 1: working together: parents and professionals as partners. National Children's Bureau.

Wolfendale, S. (1985a). Overview of parental participation in children's education. In Topping, K.J. and Wolfendale, S. (Eds) (1985). Parental involvement in children's reading. Croom Helm.

Wolfendale, S. (1985b). Planning parental involvement in reading. In Topping, K.J. and Wolfendale, S. (Eds) (1985). Parental involvement in children's reading. Croom Helm.

Wolfendale, S. and Gregory, E. (1985). Involving parents in reading: a guide for in-service training. Reading and Language Development Centre, Nene College, Northampton.

Wolfendale, S., Topping, K. and Hewison, J. (1986). A review of parental involvement in children's reading. Educational and Child Psychology, 3, 3, 55-63.

Wood, A. and Simpkins, L. (1976). Involving parents in the curriculum. Home and School Council Publications, 81 Rustlings Rd., Sheffield, S11 7AB.

Wood, C.M. (1979). Cognitive style, school readiness and behaviour as predictors of first-grade achievement. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, April 9th-12th, 1979. ED 182 014.

Wooster, A. (1986). Social skills training and reading gain. Educational Research, 28, 1, 68-71.

Wragg, E.C. (1985). Theory into practice. In Bennett, N. and Desforges, C. (Eds) (1985). Recent advances in classroom research. Scottish Academic Press.

Yarington, D.J. (1978). The great American reading machine. Rochelle Park, NJ: Hayden Book Co. Inc.

Young, D. (1980. Group Reading Test. Hodder and Stoughton.

Young, P. and Tyre, C. (1983). Dyslexia or illiteracy? Realizing the right to read. Open University Press.

Zdep, S.M. and Irvine, S.H. (1970). Reverse Hawthorne Effect in educational evaluation. Journal of School Psychology, 8, 2, 89-95.

Zifcak, M. (1981). Phonological awareness and reading acquisition. Contemporary Educational Psychology, 6, 117-126.

A P P E N D I C E S

APPENDIX 1

THE HAWTHORNE EFFECT EXPERIMENTS

The term Hawthorne Effect was not apparently coined by any of the original investigators. Adair (1984) notes that, while there is general agreement that its widespread acceptance derives from a chapter in the methodology handbook of Festinger and Katz (1953), the term was probably, in fact, derived from French (1950). Hawthorne was the location of the Western Electric Company in Chicago, Illinois.

For a description of the sequence of experiments carried out at Hawthorne reliance is placed on Pennock (1929) who, at the time of writing his research report, was the assistant works manager at The Western Electric Company and, in 1927, when specific studies at the factory were initiated, was superintendent of inspection. Reliance is also placed on Parsons (1974 and 1978) who has thoroughly examined the primary sources and draws extensively from Roethlisberger and Dickson's (1941) standard report. Parsons notes that seven studies took place between 1924 and 1932 at The Western Electric Company and all were concerned with worker productivity. Secondary sources usually refer to just one or two studies. Parsons rightly records his admiration for the considerable scope and pioneering nature of the research. It is comparatively easy in retrospect to denigrate their achievements confined as they were to

rudimentary research techniques in the face of a daunting task: critiques should be viewed in that light.

The first three studies were concerned with changes in illumination. In 1924 The Massachusetts Institute of Technology initiated a series of tests under the sponsorship of the National Research Council and the Illuminating Engineering Society "... to ascertain the relationship between illumination and production in various factory situations." One of the participating firms was the Hawthorne plant of The Western Electric Company. Subsequently four additional studies were initiated: the Relay Assembly Test Room experiment lasting from April 1927 to June 1932 (referred to as RATR 1), the second Relay Assembly Test Room experiment lasting from August 1928 to March 1929 (referred to as RATR 2); the Mica Splitting Test Room experiment lasting from October 1928 to September 1930 (referred to as "MICA") and finally the Bank Wiring Room Observation Room experiment dating from June 1931 to May 1932 (referred to as "Bank Wiring"). Parsons (1974) notes that he can trace only two references to RATR 2 in the literature. He also observes that the actual source of the "Hawthorne Effect" derives from RATR 1.

Further dependence is placed upon the cited authors for the substance of the seven experiments. Before describing these one misunderstanding should be dispelled. It is always assumed that Roethlisberger, who along with Dickson (1941) provided the standard report, was responsible for the Hawthorne studies probably because it is unclear who was responsible for directing the studies at any one time.

It would appear that after the lighting studies it was the Hawthorne executives who supervised the RATR 1 experiments and this would account for the marked lack of research expertise. It was after the twelfth experimental period of RATR 1 that the executives contacted Harvard Business School who provided Elton Mayo to oversee subsequent research. He in turn brought in Roethlisberger and others and, as stated elsewhere, his (Roethlisberger's) field experience at Hawthorne was limited to one summer.

In the first three experimental periods of RATR1 the subjects were women who inspected parts, assembled relays or wound coils. Secondary sources locate the Hawthorne Effect in these studies because, ostensibly, production rates went up no matter how illumination varied (see Adair, 1984). Parsons (1978) states that the "evidence" for these conclusions rests on twelve paragraphs in a news report, an edition of Technical Engineering News (Snow,1927). No document was ever published providing quantitative data nor, according to the National Academy of Science records, was a final report ever delivered to the National Research Council. Parson's notes that, for this reason, Roethlisberger and Dickson (1941), in one of the two comparatively accurate accounts of the studies in the literature, are careful to say that the subsequent studies were undertaken as a result of the illumination studies though clearly no hypotheses were generated by them.

In RATR 1 five young women were placed in a separate test room assembling relays for telephones. The independent variables were rest pauses and duration of work.

Carey (1967) points out that there was no control group for this experiment. Shortly after the experiment began subjects were paid by a new piecework system and, as it was based on the output of the small group, it was relatively close to an individual piecework arrangement. Parsons (1978) reports well-documented and relevant but little known data from Roethlisberger and Dickson (1941) and Whitehead (1938). A third of the way through the experimental period two out of the five subjects were replaced because they were "insubordinate" and talked too much. "... one of the replacements turned out to be the group's quickest, most ambitious and responsible member - in fact its leader." Parsons also notes that there were 24 periods in the course of the experiment and the definition of a "period" was that, in some manner, its conditions differed from those preceding it. However only the first 13 periods have been extensively reported although production rates fell during later periods.

Whilst limited evidence dispels the myth that production went up whenever the experimental conditions changed there was nevertheless an overall increase. In Parson's view however another important factor has been overlooked, that WITHIN many of the periods there was a tendency for the production rates to rise. He offers the explanation for this that a counter tally was situated only four feet behind where the operators sat from which readings were taken by a supervisor half-hourly. He states that none of the primary or secondary sources had ever asked whether the subjects had access to this performance data much less

whether they made use of it. That this was the case is however very apparent from subject's reported remarks and from the comments of observer/supervisors. Typical of these comments are the following: "I'm about 15 relays behind yesterday.", "I made 421 yesterday, and I'm going to make more today.", "... the girls were trying to beat their former records - each girl was conscious of how much work she was doing. Frequent attempts were made by certain operators to break the record for a day's work."

These facts suggested to Parsons, who had been working on training programmes and was aware of what knowledge of results could do to performance, that workers were getting information feedback. Further conclusive proof of these facts was provided by an observer/supervisor who Parsons contacted some years later and who had been present during the RATR 1 experiments. He confirmed that half-hourly output levels were available to subjects. It was also highly likely that the information feedback was related to the method of piecework payment, a significance which had been minimized by Roethlisberger and Dickson (1941) who had considered it as a reason for the output increase.

Parsons also hypothesises operant conditioning as explaining the production increase. The Hawthorne operators assembled relays because they had been paid to do so and payment had functioned as "generalized secondary (conditioned) reinforcement" making subsequent relay assembling behaviour more likely. Payments also increased with faster assembly rates and hence the rate of responding was differentially reinforced to become progressively

higher. Parsons also observes that the information feedback available from the tally counters functioned as additional and essential discriminate stimuli for the rate of behaviour to be emitted. He also discounts suggestions that RATR 1 output increase was due to team work, cohesiveness, informal organization, interpersonal relationships or social unity. He argues that all these factors existed in the subsequent Bank Wiring experiment where production remained constant. It is interesting to note that, at Hawthorne's 50th anniversary celebrations in 1974, the company had still not realised these major implications of the study although over half a dozen speakers regarded his (Parson's) explanations as convincing.

The RATR 2 experiment investigated the effects of the new piecework payment adopted by RATR 1. No other variables were introduced. Baseline data on five workers were obtained from their regular work station. They then worked together under the piecework system for nine weeks and an alternating pattern of work continued. Production did increase under piecework payment but not beyond a 12% level; on return to the regular work station production dropped which was hardly surprising. It is very significant that, for this second experiment, information feedback was not available and output rates within each experimental period did not rise during the piecetime rate payment period. Parsons largely discounts the significance of the Mica and Bank Wiring experiments for elucidating the Hawthorne Effect. The explanations for increased production in the Mica study are, in his opinion, inconclusive, whilst during

the Bank Wiring experiment the production rate remained steady because the operators deliberately adopted restrictive practices. They thought that if an excessive amount of work was turned out the management would lower the piecework rate (see Parsons, 1982).

APPENDIX 2a

Analysis of comments by child care staff on paired reading sessions.

Houseparent A: tutoring Anton.

Week beginning 23.9.85; - 3 sessions.

Anton was very keen but appeared to resist reading together. Tutor reported that Anton gradually accepted simultaneous reading but did read alone for a short time though not in the prescribed manner. He tended to rush.

Week beginning 30.9.85; - 2 sessions.

Slower; more careful; enthusiastic; good comprehension; tutor reported Anton wanted to get to the end of the story.

Undated - 1 session.

Comment of tutor: "pleased to reach the end of the book." (but only five minutes of paired reading during the week).

Week beginning 4.11.85; - 2 sessions.

After a five week lapse of paired reading tutor's comment was "A bit out of practice but enjoyed it once we got going; a tendency to rush."

Week beginning 11.11.85; - 1 session.

Nervous; hesitant; fidgety; improved as reading got under way (only one session of fifteen minutes during whole week).

Week beginning 25.11.85; - 2 sessions.

"First session for ages due to lack of enthusiasm; really good, though quite a tendency to make up words and even sentences at first; keen to get to end of book."

Undated - 2 sessions.

A good session; keen; a tendency to race ahead. "Too easily distracted; very quick to lose concentration."

Houseparent B: tutoring Marina.

The nine weeks running consecutively preceding the Christmas holidays, omitting half-term (undated otherwise).

Week 1. Enjoyable; becoming more confident.

Week 2. "Enjoying it a lot" - keen to continue.

Week 3. A little hesitant after the weekend otherwise going well.

Week 4. Going well; very keen; good progress.

Week 5. "Good progress with observer; coped well while being videoed."

Week 6. "A little nervous to begin with in front of the boys." Good progress.

Week 7. "More comfortable than previously in front of the boys." Longer sessions - wanting more. "Very comfy."

Week 8. Started independent reading . "Marina reading alone when she squeezes my finger. Good first try." (two relevant comments) Improved generally at reading alone, but houseparent commented that on one occasion "Marina wanted to read together more than alone."

Week 9. (only one short session in week immediately preceding Christmas holidays) Comment: "good".

Houseparent C: tutoring Mark.

Week beginning 7.10.85;- 2 short sessions only.

"A bit apprehensive but O.K." "A bit stuttery but good."

Week beginning 14.10.85. - 1 session.

"Very good."

Week beginning 10.11.85.

(Resuming on 15.11 after four week lapse) Good but slow; finding it hard to concentrate.

Week beginning 24.11.85; - 4 sessions.

(After ten day lapse) Very good but stuttering a lot; improved later.

Week beginning 1.12.85.

"Enjoyed reading with few mistakes and was pleased with himself."

Houseparent C: tutoring Mark. NB. Fourteen consecutive weeks apart from half-term mostly undated.

Week 1. "Occasionally reading things that aren't there" but later: "Read slower today; took better care; enjoyed book very much."

Week 2. "Chose a hard story but coping well." "Good; nervous when she read in front of another member of staff."

Week 3. "Good reading" (Only one short session).

Week 4. "Good; tried to read by herse
it too hard."

Week 5. "Slow reader; tries to read fa
she can; good."

Week 6. "Good; stumbled on pronunciatic
good reading in front of another member of staff.

Week 7. - beginning 27.10 85: good.

Week 8. - beginning 3.11.85: Tried to
fast initially.

Week 9. Good; "Putting different voice
story."

Week 10. (Only one session) "Good - rea
reading - wanted to finish story today."

Week 11 - beginning 24.11.85: "Very goc
more confident."

Week 12. "Good."

Week 13. "Wanted to read extra; good re

Week 14. "Tried to read very fast; miss
few words."

Houseparent E: tutoring Annie. }
Houseparent F: tutoring Tom. } No record
Houseparent G: tutoring Roger. }

Houseparent H: tutoring Raymond.

Undated records but consecutive from mid-Septembe
subsequent records mislaid.

Week 1. (a) "For his first attempt d
well - wanted to read on his own but wasn't able.

(b) "Better today, although often thought he knew words by just looking at pictures."

Week 2. (a) "Good today, read quite well; seemed confident." (b) "Today didn't really try words, just repeated after me." (c) "Chose extremely difficult book but didn't want to change it."

Week 3. (a) "Much more relaxed; read well." (b) "Read well; good today." (c) "More confident today."

Week 4. (a) "Very good today." (b) "Enjoyed story; read well." (c) "Wanted to read on own. (d) "Very good today."

APPENDIX 2b.

Summmary of data from checklist completed by child care staff

QUESTION 1. Where are books coming from?

7 from school library; 1 own book.

QUESTION 2. Is the child choosing the book ?

Yes

QUESTION 3. Are there enough different books?

Yes

QUESTION 4. Are they too hard or too easy?

Appropriate for age and ability range. Other comments: "Tended to persist with same book." In one case the house parent thought the child had chosen a too difficult book but the child did well. There were two instances of children choosing too difficult books initially but then changing for a more suitable one.

QUESTION 5. How long and often does the ch read?

This analysis is provided in Table 1, page 202

QUESTION 6. If its a long session does the child choose?

Yes: none of the sessions went beyond 15 minutes; often they were shorter and occasionally this reflected the child's restlessness.

QUESTIONS 7/8 Not appropriate.

QUESTION 9. Does the child read in a quiet place?

Six positive answers with two comments: "Otherwise couldn't manage." and "away from people". One houseparent experimented with different venues some of which

were noisy and commented that the pupil's concentration was good. Another tutor made the point that the venue was not always "a quiet place" but her pupil did not appear to be distracted by this.

QUESTION 10/11. Is it comfortable for both to see the book? Is it close. warm and lively? Yes.

QUESTION 12. Do both show interest in the book?

On the whole - yes. One child reported as unresponsive. More information under analyses of child care comments from their records.

QUESTION 13. And talk about the pictures and story?

Tutors generally said they did apart from one child who was unresponsive.

QUESTION 14. But not lose track of the book?

Discussion appeared to be left to an appropriate break in the story.

QUESTION 15. And with the child doing most of the talking?

Again apart from the unresponsive pupil the response was unanimously positive.

QUESTION 16/17. No fussing about mistakes?

No breaking words up?

Answer: no to both questions.

QUESTION 18. Child not struggling for more than five seconds?

No, but needs qualification (see below).

QUESTION 19/20. Tutor repeats words failed by child correctly? Child then repeats correctly?

Seven tutors gave "yes" to both questions. Two tutors required the child to return to the start of the

sentence. One tutor commented that her pupil got the rest of the word when he heard the first letter.

QUESTION 21/22. Tutor praises a lot? Praise given with feeling?

Positive responses given by each tutor to both questions, though some reservations about this will need to be expressed. One tutor remarked that her pupil was very pleased with his efforts.

QUESTION 23. Reading together exactly?

Four tutors claimed that this synchrony did occur. The others expressed doubt, the gist of which indicated it was not easy and required adjustment. One tutor had problems with a child racing ahead.

QUESTION 24/25. Not too slow or fast? Flowing and lively, not jerky or flat?

Seven tutors answered "yes" to both questions. One commented that her pupil was jerky.

QUESTION 26. Pointing to words - parent or child?

Two tutors: child. Two tutors: tutor. Three tutors: not at all. One started but discontinued.

(The questions 27 to 35 are about independent reading. Five tutors did not get beyond simultaneous reading with their pupils. One commented that her pupil was not ready because she stumbled too frequently. The other three tutors commented as follows:

QUESTION 27. Child signals for reading alone? Yes.

QUESTION 28. Signal clear and comfy enough? Yes.

QUESTION 29. Signal does not break the flow of reading? No.

QUESTION 30. Tutor goes quiet straight away? Yes.

QUESTION 31. Tutor praises child for going alone? Yes.

QUESTION 32. Parent goes on praising during reading alone? Yes.

QUESTION 33. Pointing to words - parent or child?

Two tutors: child. One tutor: child but only initially.

QUESTION 34. Child joins in again after mistake or long struggle? Yes.

QUESTION 35. Reading together goes on until next signal? Yes.

QUESTION 36. Is the record sheet used?

All tutors replied 'yes' but three sets of records were mislaid.

QUESTION 37. Are the comments positive Yes.

QUESTION 38 Is there sufficient support and feedback?

Yes; care staff felt they had sufficient teacher backing.

QUESTION 39 Does the child like the record sheet?

Yes, in one case the child kept it. (One tutor commented at the foot of the checklist: "Raymond's reading improved rapidly over the time we've been reading; he is extremely good.")

APPENDIX 2c

Summaries of video and audio recordings and observations conducted by the author

Observation session Monday 4th November 1985 4 - 4.15 p.m. in the playroom.

The aim of this session was to make open-ended comments on the paired reading technique and to assess whether the subject would tolerate a video-recording without being unduly disturbed.

The subject is a 12-yr old girl with a hairlip. Further surgery will be necessary: articulation is markedly impaired. Maria is very conscious of the condition and tends to hang her head in conversation and is very shy. The simultaneous reading flowed very well. Marina had chosen the book herself and answered her tutor's questions intelligently. It was salutory to note that, in the presence of an observer, she appeared to be very unselfconscious. There was a close, cuddly contact; it was very relaxed with the tutor's arm round the child's shoulders. The occasional person walking through the room did not appear to disturb Marina. The tutor's expression was proving a model for her. She did not generally resort to finger-pointing, but her tutor commented that she had discovered that, when Marina started to point, it was a sign that her attention was flagging and the tutor ended the session. The tutor also commented that, during the course of a session, Marina tended to cuddle-up closer.

Later in the term the tutor gave her opinion that it was valuable to hear Marina read in the dormitory with other children moving around her. Significantly some of the most naturally boisterous children were urging quieter behaviour on the other children.

Video-recording session Wednesday 6th November 1985, 4.15 - 4.30 p.m. in head's room.

Perhaps initially the reading was rather toneless reflecting some awareness of the camera presence, but gradually more expression became evident - Marina then seemed unaware of the camera. There was some brief initial discussion about the story and some subsequently. The relationship was close. At no time during the reading was it necessary for the tutor to correct the child, but some passages were omitted - were these including words Marina was unsure of? - the tutor seemed unaware. Certainly Marina was momentarily behind the tutor on occasions - this after considerable practice. On the whole the child's performance was confident. The tutor's praise was sparse. The child held the book. May be better to read in phrases - accentuate natural pauses - child might the more easily synchronize - give child time to glance ahead and bring reading strategies to bear.

Video-recording session 19.3.86; 2.55-3.05 p.m. in head's office.

An independent reading session. Much gain in confidence - encouragement from tutor was appropriate. Hardly any mistakes; book may have been slightly easy but

important that Marina gains in confidence. Pleasant relationship. Tutor commented on excellent progress. She also observed that Marina was reading confidently in different situations. Tutor was also obviously enjoying the story. The signal given by Marina to read independently was a hand squeeze.

Houseparent C: tutoring Anton.

Observation session Monday 11th November 1985; 9.13 - 9.23 a.m. in dormitory.

Anton and tutor seated side-by-side; very homelike atmosphere. Part contact; later tutor's arm was on Anton's shoulder.

Tutor tended to go ahead; no praise; no pointing; not adapting speed. On occasions Anton tended to go on ahead apparently resenting the tutor reading with him though could also have been my presence.

Tutor enjoys sessions; found that when the normal relationship between them was deteriorating paired reading "bridged the gap". Discovered that Anton was a better reader than she thought. Did in fact point when a page was all text without pictures.

Houseparent C: tutoring Mark.

Observation session 4th November 1985; 4.10 - 4.20 p.m. in dormitory.

Good expression; apparently no problem reading together. Mark chose book. Had arm round tutor. Tutor pointed. There was a lack of reinforcement and discussion of story or pictures.

Houseparent E: tutoring Annie.

Observation session 19th November 1985; 4.10 - 4.25p.m. in playroom.

On the whole synchronized well but occasionally tutor tended to go too fast resulting in child omitting words to keep up - tutor asked Annie to start sentence again. Tutor's good expression was modelled. Annie pointed to the text. She chose her own book, but it was so old it was pre-decimal coinage!

Tutor failed to praise and question or discuss story.

Houseparent B: tutoring Jonathan.

Observation session 2nd December 1985; 4.10 - 4.20 p.m. in dormitory.

Jonathan is an eleven year old boy with a hairlip and poor diction who is also very conscious of the condition. He was not one of the original subjects, but asked to take part and gained a lot of satisfaction through participating successfully if only occasionally.

This houseparent also tutored the girl with the hairlip and was equally sensitive with Jonathan.
The relationship was very relaxed and "cuddly". The tutor was praising appropriately and with feeling and the synchronous reading seemed to proceed effectively. There were other boys present in the dormitory playing table games and preparing Christmas decorations.

Author tutoring Anton.

Session 17th March 1986; 3.30 - 3.50 p.m. in head's room; audio recorded.

The aim of the session was to acquaint the author with the paired reading technique; also to prepare the way for a video-recording.

Initially it was difficult to read simultaneously; subject tended to race ahead. I did not praise sufficiently when Anton made a real effort with difficult words in independent reading which he initiated with a nudge. (Decided to go over to independent reading because I concluded that the policy of reading together for a long period had frustrated and bored Anton - this with his regular tutor). The session was too long and Anton was clearly becoming tired though continuing to enjoy the story.

Author tutoring Anton.

Video-recording session 18th March 1986; 2.45 - 3p.m. in head's room.

I had heard Anton read on the 17th and he agreed to read for a video-recording. Because of the limitations of my bi-focals I realized that I made it awkward for Anton to read by keeping the book between us instead of directly in front of him. During the independent reading period which he initiated with a nudge I gave him plenty of praise. Anton took to the technique very readily. During the simultaneous interludes Anton wanted to go too quickly but from observations with Tutor A I concluded that this was probably because he really did want to read on his own. I also concluded that there were indications that

comparative synchrony of reading is only achieved when the tutor and pupil read with facility; there appears to be a clear lag by the pupil when reading difficult words (discussed elsewhere). Expression was markedly improving. Anton showed intelligent attempts to understand the passage. There was useful discussion - on occasions Anton re-read the passage to respond to a question. There was the odd correction in simultaneous reading. Anton pointed to words when a passage became more difficult.

Video-recording session 19th March 1986 in head's room.

Anton's confidence and his expression continued to increase - I particularly praised his efforts at expression in dialogue passages. On this occasion I could have discussed the passage more freely - this is something Anton enjoys. Also I was not as consistent as I might have been to praise the correct pronunciation of a difficult word. Anton was consistently eager to return to independent reading after an incorrect pronunciation which meant that simultaneous reading was resumed. He was also very reluctant to stop reading to go on to a football match which he normally enjoys.

Author tutoring Natasha.

Video-session 19th March 1986; 3.20 - 3.30 p.m. in head's room.

This was an unsatisfactory session. Natasha had not previously been involved in paired reading. I wrongly tried to rush her into initiating the independent mode. There were initial difficulties of synchrony and a relationship was not properly established. Natasha should

have held the book herself. Praise at times was inappropriate. Chairs without arms should have been used.

APPENDIX 2d

An analysis and discussion of the Topping video

The video is edited by Topping (1985) and is entitled "Paired reading: how to do it." It is part of the package prepared by the Kirklees Paired Reading Project, Huddersfield.

The video lasts for 60 minutes. To assist in the location of various sections, video counter records are noted and time lapse. Topping explains that parts of the video can be substituted by role play, emphasising that it is not desirable to show the whole of the video but to achieve a balance between video, discussion and live demonstration. Examples can be selected appropriate to the age, sex, ethnic origin and reading ability of the target group of children at the "training meeting". "The video is arranged so that the sequences are of progressively older and more competent readers..." (N.B. Counter speed may vary from video to video.)

PAIRED READING : HOW TO DO IT.

1st sequence: "How not to do it" Counter reading 0000 - 0139.

Shows what can happen at home when parents are not given clear guidelines. Father disinterested and distracting; mother aggressive and confused; "child" reluctant and evasive. She has no interest in book. Mother fusses about child's mistakes and attempts phonic sounding.

2nd sequence "Reading together": four pairings shown. Counter reading 0143 - 0410.

1st child: infant; white; girl.

A good model. In addition to Topping's comments the author noted two words in particular: in the case of "adventure" and "enjoyed" the tutor started the first syllable "ad..." and "en..." and the child completed the words; at these points the child appeared to be momentarily behind the tutor. This can be demonstrated by freezing the frame.

2nd child: girl; infant; Asian.

Relevant Topping comments: "Mother's slow pace regulates child's impulsivity." "Mother points to words for some purpose." "Synchrony is achieved sometimes." "Mother very mechanical and unexpressive." "no praise" "very little discussion."

3rd child: junior; white; boy.

Relevant Topping comments. "Synchrony and correction procedure excellent." Criticizes for lack of praise and discussion.

The author noted the following words: "comfort", "hurled", "narrow", "brilliant" and "enormous". As with Child 1, with the easier words there was comparative synchrony; with the more difficult words he trailed slightly behind the tutor.

4th child: secondary; white; boy.

Relevant Topping comments: synchrony good, but lack of praise and no discussion. Author noted however "specialist" and "accommodate" where boy trailed.

2nd sequence "Reading alone": four pairings shown. Counter reading 0414 - 0910.

1st child: junior; Carribean; girl.

Relevant Topping comments: transition and signal good; no praise or discussion and mother did not wait full five seconds for child to attempt difficult words when reading alone.

2nd child: junior; white; boy.

Topping's comments: both enjoyed; mother's speech expressive; praise and good correction procedure; little discussion. Synchrony was variable; mum appeared over-anxious.

3rd child: junior; white; girl.

Topping's comments: "Mother allows full five seconds for child to attempt difficult words when reading alone - the result is a high proportion of self-corrections." Praise, discussion and synchrony were good, though not enough praise after success with difficult words.

4th child: secondary; white; boy.

Topping's comments: lapse of time before correction good resulting in self-corrections; good praise and discussion; enjoyment and good synchrony.

(Author's comments) "parachute": should have been given more time to correct. For example tutor waited for subject to read "additional" to good effect. "Spherical" - waited 8 seconds; "casualty" 6 seconds. Good questions about difficult words.

(The subsequent sequences on the video are of peer and cross-age tuition and are not therefore relevant to this pilot study.)

APPENDIX 3

AN INTRODUCTION TO PAIRED READING FOR TEACHERS

As teachers we have all been persuaded at some time during our teaching career to adopt "new" teaching methods or teaching aids or to gear the curriculum we provide to particular published subject schemes. Experience has taught us to be selective and to exercise a degree of scepticism about extravagant claims made for innovations. We are often rightly resentful of those "educators" who wish to spread the latest evangel but who pay scant regard to our professionalism and to the intuitive teaching skills which we have developed. It cannot be too strongly emphasised that paired reading does not come into these categories.

The aims of this paper are twofold: whilst describing the technique of paired reading also to attempt to convince you that it is a very effective method of "teaching" reading. Before relating the origins of the technique, what follows is a step-by-step description of paired reading recommended by Keith Topping, who is an educational psychologist working for the Kirklees Education Authority in West Yorkshire.

1. Allow the child to choose the book.

2. Choose a comfortable, quiet place close together.

3. Parent and child read all the words together.

4. Discuss the story when natural breaks occur.

5. The parent should adjust the speed of reading to ensure that the pair are reading in harmony.

6. The child should not be left to struggle for more than five seconds when the parent should repeat the word ensuring that the child says it correctly.

7. The parent should point to the words if necessary though it is better if the child does so.

8. A pre-arranged non-verbal signal tells the parent to be quiet to allow the child to continue reading alone. At this point praise should be frequent and positive.

9. When the child fails to read a word or struggles for more than a few seconds, paired reading should continue.

10.Ideally practice should last about fifteen minutes exclusive perhaps of a final discussion.

Paired reading dates back to 1954. Dr. Roger Morgan was researching behaviour therapy techniques for children in the University of Leicester's Child Treatment Research Unit. At one stage he was treating a boy suffering from a stammer by attempting to regularize his speech through reading with him simultaneously. The boy was incidentally a poor reader which lead to Dr. Morgan speculating about what effect this was having upon his reading and subsequently lead directly to the development of what is now known as paired reading. It was finally "launched" in 1979 when Morgan and a colleague conducted a small study using parents as tutors in a LEA remedial reading unit. Since 1979 upwards of 25 studies have been recorded. The majority of these have been in Yorkshire, Derbyshire and South Wales; only three have been reported in the south of England. If the large sales of a "paired

reading instruction pack" available from the Kirklees LEA in West Yorkshire are any indication, it is reasonable to assume that the paired reading technique is being "tried out" in these and other areas on a greater scale. Few studies have been published though five have been described by their authors in a recently published book edited by Keith Topping and Sheila Wolfendale entitled "Parental Involvement in Children's Reading".

In a deliberate attempt to refrain from making sensational conclusions and thus to avoid cynical comments a conservative estimate of the success of the studies suggests that two or three times normal reading progress is commonly achieved. It is difficult however to be restrained when much greater success is not uncommon together with the interesting finding that comprehension appears to improve more than reading accuracy. It is also encouraging to find other benefits deriving from a child's success in paired reading. Relationships between parent and child, teacher and child and parent and teacher have improved; the child's all-round performance in school has advanced and, if there were accompanying behaviour problems, these have tended to remit. There is no evidence that paired reading benefits any particular age group more than another and it appears to be equally effective across the ability range.

Precisely why paired reading has proved so successful is at present a matter for conjecture. Apart from behavioural explanations you may find the following suggestions helpful.

In 1972 a research paper was published by an educational psychologist working in Somerset which, in my view, has not received the attention it deserves. The author, Denis Lawrence, set out to demonstrate that children who were retarded in reading but who were befriended by a non-professional adult who was not related to them made greater progress in reading than a control group. Four primary schools whose staff showed interest in the project were used in the study. The headteacher of each school contacted a woman in the area who was considered to be a suitable person to use in the experiment. Forty-eight nine year old children took part; six from each school received counselling and continued with remedial reading whilst the other group of six from each school acted as controls and only received remedial reading. The counselled children were seen by their counsellor for a half hour period once a week for the two term duration of the project. Counsellors were encouraged to befriend the children and chat with them about home, holidays and all about themselves. In all four schools the counselled children showed a greater rise in reading attainment than the controls and in 22 out of 24 children the rise was greater than the chronological age.

We may conclude with hindsight that the implications of this study are intuitively acceptable and claim that, for some children, it is very evident that the progress in reading will languish in the absence of a relationship between teacher and pupil, but are we really convinced that such a relationship is necessary? In 1979 an influential book was published in America called "The Great

American Reading Machine". The author argues very convincingly that teachers in the USA have been duped by publishers, authors, the press, reading specialists and teacher training institutions to adopt a plethora of reading schemes which often claim to have a basis in research. The author believes that what is lacking is the development of a relationship between each child and the teacher as distinct from the mechanical process of a particular reading scheme.

The author makes two points in conclusion; firstly, that 60% of the variance in learning to read is due to affective factors rather than to cognitive factors; secondly that about 2% of school children have basic learning difficulties which make it extremely hard for them to read and the other.98% can learn to read given the appropriate teaching. These percentages were based on research and the authors 15 year experience of training reading teachers. To what extent these conclusions and the influence of vested interests are true in the UK is a matter for conjecture though the size of classes in some of our primary schools does not assist the establishment of relationships. Accepting that some children may achieve success in remedial classes, with others the alienation brought about by repeated failure is difficult to remedy.

You will probably agree that, as a factor in motivating some children to read, the relationship between "tutor" and pupil is of importance. One researcher into paired reading, using parents as tutors, believed that children's progress was indeed, in part attributable to what he called the "mum effect".

If you are interested to read a fuller account of the origins of paired reading I have copies available of an interesting article by the originator of the technique, Roger Morgan. Further useful information can be obtained from the references in the bibliography and, where these are journal articles, I also have spare copies available.

GRD. 18.9.86.

FOR FURTHER READING.

Lawrence, D. (1972). The effects of counselling on retarded readers. Educational Research, 13, 2, 119-124.

Morgan R. and Lyon, E. (1979). "Paired reading" - a preliminary report on a technique for parental tuition of reading-retarded children. Journal of Child Psychology and Psychiatry, 20, 151-160. (NB This is the report of the seminal research.)

Morgan, R. (1986). Paired reading - history and future. The Paired Reading Bulletin, 2, 2-4. (NB This bulletin is the second of an annual report available from the Kirklees Psychological Services; for further information this is the recommended article.)

Topping,K. (1984). Paired reading. Child Education, 61, 12, 10-11.

Topping, K. and Wolfendale, S. (1985). Parental involvement in children's reading. Croom Helm. (NB Well worth reading but of varying quality. It's very expensive and may be better obtained from the library. Both of the Topping articles are worth reading.)

Yarington, D.J. (1978). The great American reading machine. Rochelle Park, New Jersey. Hayden Book Co. Inc.

Young, P. and Tyre, C. (1983). Dyslexia or illiteracy? Realizing the right to read. Open University Press. (NB Both these latter books contain provocative material critical of established approaches to reading. The Young and Tyre book includes references to paired reading.)

(Author's footnote: this paper was written in 1986. Certain comments on aspects of paired reading need to be modified in the light of subsequent research which is available in the literature review of the main study.)

APPENDIX 4

AN INTRODUCTION TO PAIRED READING FOR PARENTS

Teachers and parents are well aware that doctors and educationists are frequently publicizing the latest fads by telling them how to feed, rear and teach their children. Unfortunately it is only rarely that a fresh initiative proves to be of lasting worth.

Many parents and teachers are convinced that paired reading is among the most promising and exciting advance in the teaching of reading in recent years.

What is special about it? After all parents have been reading to and hearing their children read for as long as there have been books.

There are three basic differences: part of the paired reading technique involves the parent reading with the child; errors are corrected without any comment and success is consistently praised. More subtle variations are that the child chooses a book and is in control of the change over to reading alone.

You may be interested to know that observation of large numbers of parents and teachers has shown that praise for success in reading is rarely offered consistently. It is rather like engaging in conversation with someone who does not respond in any way - you may have had this experience and recollect your feelings. Similarly we are often far too demanding and critical of our children's reading. We convey our anxiety to them and quickly quench their enthusiasism.

Though at some time you might well have used one of the elements mentioned above it is believed that the reason for the success of paired reading is the fact that they are all used in one package.

In a large number of schools in the north of England paired reading is used by parents in their homes. The results have been so encouraging that to call them astounding would not be an exaggeration. Whilst there is the occasional unexplained failure, there has been a marked improvement for children from five to sixteen, whether they are more or less intelligent. One of the most encouraging results is that there has been a substantial improvement in the reading attainment of children who have failed to respond to remedial reading and of whom some have been dyslexic. Paired reading is deceptively simple but very effective.

We would confidently urge you to join with us and try out paired reading in your home. Your efforts will not be wasted. However, would you please carefully consider taking part before agreeing to do so. You will need to commit yourself to hear your child read for fifteen minutes a day, six days a week for eight weeks and it is essential that you keep to the guidelines which are given in the parents' handbook and which are discussed at the meetings.

At present very few schools in the south of England have enlisted parents' help in paired reading. Not only would you be one of the first groups of parents to participate in the south but we ask you to help us find out what it is about paired reading which is so successful. Is

there any way of making it even more simple? There have been claims that the complete package is unnecessary for success; some teachers claim that it is the reading together which is the most important part and others that this can be dispensed with and all that is needed is for the parent to hear the child read in the more traditional way but according to the guidelines. To test these claims we will be asking you to agree to participate in three groups. This will be explained to you at the meeting.

We hope that we have conveyed to you our enthusiasm for what we consider to be a most valuable teaching aid. We would urge you to become pioneers so that together we can play some part in persuading other parents to adopt this simple reading technique.

You will of course be invited to a meeting during the summer term 1987 for us to provide you with feedback about the results of your labours.

THANK YOU FOR YOUR INTEREST.

GRD Jan 1987.

APPENDIX 5

COPY OF LETTER TO PARENTS BEFORE START OF PROJECT

January 1987.

Dear ,

I wrote you in December giving a preliminary notice of two parents' meetings to be held at 7.30. p.m. on Wednesdays 21st and 28th January. We do need your help to get this reading project under way. A measure of its importance is that we have received a grant from the local authority to assist with the extra books we may require. In addition we hope that some parents will agree to allow one or two reading sessions to be video-recorded so that the video can be used for informing parents in other schools about paired reading. It would be helpful if you are able to bring your child with you to practise the simple reading technique; we do not anticipate the meetings to go on longer than one hour. Please do come to the first meeting at 7.30. p.m. on Wednesday 21st January or slightly earlier if you are able to join us over refreshments.

It would be helpful if you would sign the accompanying slip and return it to me as soon as possible if you anticipate being able to come.

Yours sincerely,

APPENDIX 6

Copy of a letter sent to the headteacher of one of the participating schools before the start of the main research study (It also formed the substance of the letter to the second school.)

24th October 1986.

Dear John,

Herewith is my proposed research into paired reading with your second year and some fourth year children for the spring term 1987. I should be grateful if you would give it your consideration. If you judge the project to be viable it would be useful to meet as soon as possible to discuss the finer details. I have set out my objectives followed by a suggested timetable outlining the "bare bones" of the study.

Objectives for research into paired reading in Browning C primary school, Spring term 1987.

1. To determine how effective paired reading is using peer and cross-age tutors and how it compares with parent tutoring.

2. To measure the effect that paired reading experience has on children's attitude to reading.

3. To discover whether children who are more reflective or more impulsive as measured by the MFFT respond to paired reading differently.

4. To collect the opinion of staff and children about paired reading and of staff to small-scale research in general.

5. To retest in 1988 after the lapse of a year to ascertain whether any progress attributable to paired reading has been maintained relative to the control group.

Proposed timetable.

1. At your discretion, a meeting to explain to interested staff who may be involved what the project is about.

2. Before reading tests begin to acquaint children with "what it's all about" possibly on Friday 16th January 1987.

3. To test all your second and fourth years using a group reading test and an attitude to reading test during the week 19th to 23rd January 1987.

4. On Friday 23rd January to construct the two groups in a manner to be discussed.

5. Start of project; Monday 26th January to run for eight weeks until Friday 27th March exclusive of the half-term.

6. Either before or after the start of the project to administer an individual test of impulsivity-reflectivity - The Matching Familiar Figure Test (this is only a short test).

7. After completion of the project to do the post-testing using an alternative form of the group reading test and the attitude to reading measure during the week 30th March to 3rd April 1987.

8. Towards the end of the summer term to provide feedback about the findings of the study to staff and children.

9. To administer a retest of reading attainment in early 1988.

(All the dates are of course subject to your agreement.)

I would of course be responsible for carrying out the pre and post testing and for training children acting as tutors in the paired reading technique. The daily reading session should last for 15 minutes so presumably this should involve something over 20 minutes of class time including settling down and finding books.

To help give the tutors a sense of their importance I will prepare a small booklet telling them how to do paired reading.

The main problem which I can foresee is the availability of sufficient reading material for say up to 30 children for five 15 minute periods over eight weeks. If necessary would it be possible to obtain say 300 books on temporary loan from Maidstone or the local library. As you will appreciate it is important where possible to discourage children fron using reading schemes so that they are unable to compare their reading progress with their peers.

The cost of the test materials will be my responsibility. I will also endeavour to keep down to a minimum any inconvenience to your staff.

Whilst I anticipate being able to provide feedback about the project results to staff and children during the summer term, my dissertation will not of course identify either school or staff.

As I mentioned I have not gone into the finer details of the "treatment" groups. Perhaps we could discuss this in detail sometime in November after you have had a chance to consider the broad framework.

Looking forward to working with you,

Yours sincerely

APPENDIX 7

An analysis by Keith Topping of early studies of paired reading conducted between 1981 and 1984.

AUTHORS	CHILDREN		DURATION	GAINS
	AGE	NO.		
Heath (1981)	7-9	23	3 mons	2 1/3 Accuracy 3 1/2 Comprehension
Bushell et al (1982)	9-11	22	8 wks	3 Accuracy 6 Comprehension
Carrick-Smith (1982)	12-13	56	6 wks	4-7 Accuracy 1-4 1/2 Comprehen:
Bush (1983)	8-11	65	8 wks	5 1/2 Accuracy 8 1/2 Comprehension
Jungnitz et al (1983)	6-7	15	10 mons	2 3/4 Daniels and Diack
Pitchford and Taylor (1983)	7-8	64	8 wks	3 1/2 Accuracy 5 1/2 Comprehension
Evans (1984)	10-13	6	7 wks	1 3/4 Accuracy 9 Comprehension
Robson et al (1984)	9-11	76	6-8 wks	3-6 Accuracy 3 3/4- 6 Comp:
Topping and McKnight (1984)	11-14	13	7 wks	2 Accuracy 6 Comprehension
Jungnitz (1984)	7-9	12	12 Wks	4 Accuracy 5 Comprehension
Bruce (1984)	5-6	28	10 wks	4 1/2 Daniels and Diack

NB. The range and variation calculated from these and other studies noted by Keith Topping were as follows: for age; 5 to 14 Years, for number of children; 3 to 76, for type of children; normal readers to those 5 1/2 years delayed, for project duration; 5 weeks to 12 months, for accuracy gain, 1 1/2 to 4 times normal and for comprehension, 1 to 12 times normal.

Unless otherwise stated the reading test used in each case was the Neale Analysis of Reading Ability (Neale, 1966).

APPENDIX 8

The parents' handbook. (The illustrations have been omitted.)

PAIRED READING: PARENTS' HANDBOOK.

You will have been introduced to paired reading at the parent's meeting. This booklet is designed to remind you of the important points. If you have any difficulties at all, please contact the person running the project.

WHAT IS PAIRED READING?

Paired reading is a way in which you can help to improve your child's reading. These are the steps.

1. Reading together from a book chosen by your child.
2. You and your child reading aloud together at the same pace.
3. Your child should indicate readiness to read alone by tapping or nudging you.
4. Your child continues to read alone until a mistake is made. You correct the word. Your child repeats the word again and you carry on together until you receive the signal to read alone again.
5. Praise your child at every opportunity.
6. Don't make a fuss about mistakes.

Now lets go through these points in more detail.

CHOOSING THE BOOK.

1. It is important that your child has a free choice of the

book to be used.

2. If your child loses interest in a book, or does not understand it, it may be changed at any stage without comment! After a few false starts, most children learn to choose books that suit them best. If your child wants to read a book again don't worry.
3. Books can be chosen from:

    (a) the school library or classroom,

    (b) home or

    (c) the children's section of the local library.

    If your child has never been to the local library why not arrange a visit.

READING TOGETHER.

1. This is exactly what it says. You and your child read aloud together.
2. It is important that you read at your child's speed. It may be helpful for your child to follow each word with a finger.
3. In this way your child reads every word with you and has the enjoyment of reading in complete, understandable sentences.

READING ALONE.

When your child feels confident enough to read alone, this should be shown by some signal that you have already arranged e.g. tapping.

1. You stop reading and show you are pleased.
2. You praise often as your child reads alone.

3. When your child makes a mistake, or cannot read a word after 8 to 10 seconds, you read the word. Your child then repeats it and you both carry on reading together until you receive the signal to read alone again.
4. At a suitable break in the story talk about it with your child.

PRAISE.

It is important that your child feels successful especially if there has been a failure of reading in the past. Praise whenever possible e.g. when your child reads alone or when tackling a difficult word. Try to make paired reading enjoyable.

MISTAKES.

No fuss should be made if your child is unable to read a word. Certainly there should be no show of displeasure or tension.

1. Simply correct the word.
2. Do not ask your child to break the word up and use the sounds.
3. Do not indicate that your child has made the same mistake many times before.
4. Make sure your child repeats the word correctly before carrying on.

DO NOT.

1. Threaten to tell your child's teacher if things go wrong.
2. Make your child think he/she is in a competition.

3. Promise special rewards for completion of a book or passage.

WHEN ?

Ideally, paired reading should be done for six days a week. Choose a time which is convenient for BOTH of you perhaps the same time each day, but certainly not at a time that interrupts a favourite TV programme. Aim for about 10 to 15 minutes a day.

WHERE ?

In order to make this pleasant, choose a comfortable place sitting close to your child. Encourage your child to talk about the book; perhaps recap on the story so far, talk about the characters or what might happen next. If possible, choose somewhere quiet. This is not always possible in a busy household, but is important that your child has your attention for that length of time.

WHO ?

Either parent can help with paired reading. Some families have used grandparents, aunts and uncles. It is best to stick to the same person if possible.

Some parents, who have had reading problems themselves, may not feel confident enough to start paired reading. In that case. it is quite possible to use another adult, as long as that person understands the technique.

DIARY.

You will have been provided with a diary. This is to be filled in after each reading session. You will find the information useful, especially if you have any problems and need to consult the teacher.

The teacher will also find the information useful so please do return the diary weekly.

CONTACT.

You will have been invited to two informal meetings with a small group of parents at the start of the project. There will be another meeting at the end of eight weeks. In addition to this you will be asked to keep in regular touch with the school. This may take the form of the teacher visiting you at home, you calling in to see the teacher in school or an interim meeting with the other parents at the school.

AND FINALLY.

We hope that you will join the project. As it runs for eight weeks we realize that it will take up a good deal of your time - so please give this careful consideration. We would in fact ask that you do not start the project unless you feel you can complete it.

If you do join the project we are sure that you and your child will benefit in many ways and find the whole experience enjoyable.

Thanks are due to Nottinghamshire County Council Education Department for permission to reproduce this booklet though the alterations have been quite extensive.

APPENDIX 9

A typical diary page for completion by tutor (both parent and child tutor).

WEEK NO_____

DAY	TIME	BOOK CHOSEN	SESSION LENGTH	WITH WHOM	COMMENT
MON.					
TUE.					
WED.					
THU.					
FRI.					
SAT.					
SUN.					

_____

Teacher's signature

NB. This sample diary page is only an example; on the version used by parents there is much more space.

APPENDIX 10

An example of a questionnaire for completion by teachers.

Paired reading: evaluation.

Upstead P Junior School Teacher:

I would be grateful if you would make general comments about the effect of paired reading upon the children in your class under the following headings:

1. Any noticeable improvement in reading: this might relate to fluency, expression, speed, comprehension, variety or accuracy.

2. Any noticeable change in attitude to reading in terms of confidence or enjoyment?

3. Any noticeable effects on behaviour, general attitude to school work or concentration?

4. Any significant comments which you have heard children or parents make?

5. Any observations about the project in general; improvements needed, unhelpful aspects?

6. Any obvious comparisons with other methods of teaching reading? Does paired reading complement, augment, nullify in any way your own efforts to teach reading?

7. Any other comments not covered by the above. I would be particularly interested in comments which may be specific for individual children.

Thank you for your assistance.

APPENDIX 11a

Parent Questionnaire:

PAIRED READING EVALUATION CHECKLIST.

Name of child:_____

Please fill this in at the end of the project. Your comments will help in the planning of future paired reading projects.

A. WHAT DID YOU THINK OF PAIRED READING?

- for each of the following, circle YES or NO.

1. Did you find the project interesting? YES/NO
2. Did your child enjoy the project? YES/NO
3. Was paired reading easy to learn? YES/NO
4. Were there any problems getting books? YES/NO
5. Was it difficult to find time to read regularly? YES/NO
6. Was it hard to find a suitable place to read? YES/NO
7. Did you get enough help during the project? YES/NO
8. Was the diary useful? YES/NO

B. HOW HAS PAIRED READING HELPED YOUR CHILD?

-has there been an improvement in the following?

1. Amount of reading done? YES/NO
2. Variety of reading material? YES/NO
3. Understanding of reading? YES/NO
4. Confidence in reading? YES/NO
5. Willingness to read? YES/NO
6. Interest and enjoyment in reading? YES/NO

- When reading aloud does your child:

1. Make less mistakes? YES/NO
2. Keep a steadier flow? YES/NO
3. Read in a more lively way? YES/NO

C. ANY OTHER COMMENTS:

D. WHAT NEXT?

Now the project is over, what will you do next? Tick one

1. Stop paired reading and perhaps start again later?
2. Go on doing paired reading?
3. Keep up with paired reading but less frequently?
4. Go on reading at home, but in a different way?
5. Would you be interested in helping with future paired reading projects? YES/NO

Signed_____

P.S. Would you please indicate below whether you read with your child before you took part in paired reading and to what extent?

We hope you have enjoyed the project. Thank you for your help.

(Ackowledgement is due to Keith Topping for the use of this questionnaire.)

APPENDIX 11b

Checklist for completion by the author during the course of visits to homes.

PAIRED READING CHECKLIST NAME_____DATE_____

BOOKS:

1. Where are books coming from?
2. Is the child choosing them?
3. Are there enough different kinds?
4. Are they too hard or too easy?

TIME:

5. How long and often does the child read?
6. If its a lot, does the child choose?
7. If its not much can someone else help?
8. If others help, how many others?

PLACE:

9. Does the child read in a quiet place?
10. Is it comfortable for both to see the book?
11. Is it close, warm and lively?

TALK:

12. Do both show interest in the book?
13. And talk about the picture and story?
14. But not lose track of the book?
15. And with the child doing most of the talking?

NEW WAYS:

16. No fussing about mistakes?
17. No breaking words up?
18. Child not struggling for more than 5 seconds?
19. Parent repeats words failed by child correctly?

20. Child then repeats correctly?

21 Parent praises a lot?

22. Praise given with feeling?

READING TOGETHER:

23. Reading together exactly?

24. Not too slow or fast?

25. Flowing and lively, - not jerky or flat?

26. Pointing to words - parent or child?

READING ALONE:

27. Child signals for reading alone?

28. Signal clear and comfy enough?

29. Signal doesn't break the flow of reading?

30. Parent goes quiet straight away?

31. Parent praises child for going alone?

32. Parent goes on praising during reading alone?

33. Pointing to words - parent or child?

34. Parent joins in again at mistake or long struggle?

35. Reading together goes on till next signal?

NOTES:

36. Is the record sheet used?

37. Are the comments positive?

38. Are the teachers doing their bit?

39. Does the child like the record sheet?

NB. Two columns were provided in the original checklist for ANSWER and REMARKS.

Acknowledgement is due to Keith Topping for this checklist.

APPENDIX 12a

Child questionnaire:

PAIRED READING: EVALUATION CHECKLIST (CHILD'S).

Name.....

Now you have finished the project, tell us what it was like. You may like to ask your mum, dad or teacher to help ypu.

	Tick which is true for you	
1. Did you like paired reading?	YES	NO
2. Was paired reading easy to learn, or hard?	EASY	HARD
3. Was it hard to get books, or easy?	HARD	EASY
4. Was it easy to find time to read, or hard?	EASY	HARD
5. Was it easy to find a good place to read, or hard?	EASY	HARD
6. Was the diary a good idea?	NO	YES

After the paired reading project:

1. I like all kinds of reading.	YES	NO
2. I am better at all kinds of reading.	NO	YES
3. I want to go on with paired reading.	YES	NO

Can you tell us what we can do to make paired reading better? Write what you think here:-

(Acknowledgement is due to Keith Topping for the use of this questionnaire.)

APPENDIX 12b

Child tutor questionnaire.

PAIRED READING WHAT DO YOU THINK?

Name of tutor_____ Name of pupil_____

Please tick which is true for you.

A. Is your pupil:-

1. Reading more:	about the same:	reading less.
2. Sticking to the same kind of book:	about the same:	reading different kinds of book.
3. Understanding books more:	about the same:	Understanding books less.

B. Is your pupil:-

4. Less confident in reading:	about the same:	More confident in reading.
5. More willing to read:	about the same:	Less willing to read.
6. Less interested in reading:	about the same:	More interested in reading.
7. Enjoying reading more:	about the same:	Enjoyed reading less.

C. When reading out loud, is your pupil:-

8. Making more mistakes:	about the same:	Making less mistakes.
9. Keeping a steadier flow:	about the same:	Stopping and starting more.
10. Reading in a lifeless/ boring way:	about the same:	Reading with more life and expression.

D. Would you like to:- CHOOSE UP TO THREE.

11. Go on peer tutoring as often as now? YES____

12. Go on peer tutoring, but not so often? YES____

13. Go on tutoring, with a different pupil? YES____

14. Be tutored yourself, by someone better? YES____

15. Tutor reading, but in a different way? YES____

16. Tutor something else, like maths or spelling? YES____

Any other comments:-

Thank you for telling us what you think.

(This questionnaire was adapted by the author from a similar one by Keith Topping.)

APPENDIX 13

Copy of a letter sent to each child after the completion of the paired reading project.

Dear ,

Congratulations on working so hard at your reading. I hope it will help you with your school work.

During the summer term you will be able to come along to the school with all the other children and parents who have practised paired reading. I hope to be able to tell you how well you have done.

Would you please answer the questions on the form I have sent with this letter; tell me exactly what you think about paired reading as long as it's not rude!

Keep on enjoying your reading,

Yours sincerely,

APPENDIX 14

Copy of a letter sent to parents after the completion of the paired reading project acquainting them with the preliminary results.

June 1987.

Dear ,

You will be interested to know that the results of the efforts you put in to hearing your children read last term were very encouraging. The overall improvement during the 8 week period was as follows:

Group	Improvement in reading age		Improvement compared to normal progress
1	8 1/4 months	=	4.4 times normal
2	4 "	=	2.1 " "
3	4 1/2 "	=	2.3 " "
4	4 "	=	2.1 " "

N.B. Group 4 was the control group which did not receive the paired reading tuition but just had the normal reading programme at school.

For.....the improvement was.....months.

Among 1,600 children in West Yorkshire who practised paired reading with their parents up to the summer of 1986 the average increase in their reading age was found to be four times the normal (i.e. four times the increase in their chronological age). You will see that the increase in reading age for the children in Group 1 was slightly above the average.

For Groups 2 and 3 the increase in reading age was twice the normal rate. If your child was in either of these groups, whilst you can be assured that the progress in reading was satisfactory, the Group 1 results show that, compared with Groups 2 and 3, the full paired reading technique was the best method for encouraging young children to make progress in reading.

So far as my research is concerned the progress made by the children in Group 1 was substantially better than a group of nineteen second year children who did not participate in the project. You will however be interested to know that the overall average improvement of this Control group was twice the normal rate which is a tribute to the hard work of the second year teachers who were unaware of which children were in the control group since I had chosen them at random.

If your child's progress was less than the average you will appreciate that any improvement of 2 months or more is very satisfactory though the lower scores may also indicate that paired reading is not suitable for all children. I should emphasise, nevertheless, that all the children in Group 1 made more than 3 months progress at the least. It is certain that those of you who have decided to continue with paired reading will be amply rewarded particularly if you keep to the Group 1 technique - the details are important.

Thank you for all the comments you have made in diaries and questionnaires. I have not had time to look at

them all yet but I will write you at a later date to convey a summary of your valuable comments.

Yours sincerely,

APPENDIX 15

The following instruction sheet was given to the child tutors.

You are a paired reading helper. It is an important job. Please make sure ypou remember these rules.

PAIRED READING: HOW TO PARTNER.

1. Let your partner choose a book.
2. Sit where you can share the book comfortably.
3. Read aloud together but don't go too fast.
4. If needed one of you should point to the words. It's best if your partner does.
5. When you get a signal your partner can read alone.
6. If your partner makes a mistake you can correct the word.
7. Your partner should repeat the word and you carry on reading together until you get another signal.
8. Don't forget to praise your partner.
9. Talk about the story after you have finished.
10. Don't make any fuss about mistakes.
11. If your partner hesitates count up to eight before giving the word.
12. Read for fifteen minutes each day.
13. If you have a difficulty speak to your teacher.
14. Please fill in your diary each day.
15. Don't worry if your partner chooses a too difficult book.

16. Don't worry if your partner wants to keep on reading the same book.

THANK YOU FOR HELPING.

APPENDIX 16

Instruction sheet for pupils being tutored by peer or cross-age tutors.

PAIRED READING - HOW TO DO IT.

Your partner is going to read with you. Please remember these rules.

1. Choose the book you want to read.
2. Sit where you can share the book comfortably.
3. Read aloud together but don't go too fast.
4. Point to the words if you want to, or ask your partner
5. Give your partner a signal if you want to read alone.
6. If you read a word wrongly don't worry. Your partner will correct you.
7. Say the word after your partner and carry on reading together until you want to read alone again.
8. Don't worry about making mistakes.
9. If you are uncertain about a word your partner will count up to eight before giving the word.
10. Read for fifteen minutes a day.
11. If you have difficulty talk to your teacher.
12. If the book you choose is too difficult change it.
13. You may read the book more than once if you want to.

APPENDIX 17

The Dundee Attitude to Reading Test ATR2 Global (Ewing and Johnstone).

Section 1

Please fill in the following:-

Name:.....

Date of birth: which month?.....

which year?.....

Your class: Primary.....

(put the number of your class, for example Primary 5, or Primary 6)

or Secondary.....

(put the number of your year, for example 1 or 3)

4. Are you a boy?..... or a girl..... (Put a tick)

5. Are you a member of a public library outside of school?

Yes..... or No..... (Put a tick)

6. How do you see yourself as a pupil at school? Answer by putting a tick in one of the boxes below, the one that is right for you.

(1)	(2)	(3)	(4)	(5)
One of the least clever pupils:	Not very clever:	Average:	Fairly clever:	One of the cleverest pupils.
(_____)	(_____)	(_____)	(_____)	(_____)

7. How much do you like school? Answer by putting a tick in one of the boxes below, the one that that is right for you.

(1)	(2)	(3)	(4)	(5)
Dislike very much.	Dislike	Neither like nor dislike.	Like	Like very much.
(_____)	(_____)	(_____)	(____)	(_____)

SECTION 2.

There are 18 sentences listed below. Read each sentence carefully, and when you have read it show us how much you agree or disagree with that sentence by putting a tick in the box which is right for you. * (see footnote)

1. I wish we had more television programmes at school instead of books.
2. Most books are too long for me.
3. I like talking to my friends about books I've been reading.
4. I would be disappointed if I got a book or a book token as a present.
5. I can understand things better when they are written down.
6. If I got the chance I would spend a lot of my spare time reading.
7. I am glad I learned to read.
8. Reading is something I only do at school.
9. It is difficult when you have a lot to read for your school work.

10. There are a lot of books that I feel I would like to read.
11. The more pictures a book has, the better it is.
12. I like to get books out of the library (class or school or public).
13. I would like to have more time at school set aside for reading.
14. People who spend a lot of their spare time reading miss a lot of fun.
15. There is too much reading to do in school.
16. Reading is boring unless you want to find out something.
17. Reading books is the best way to learn things.
18. I would like to have a bigger selection of books to read for school work.

*The response boxes have been omitted for reasons of space. They were as follows: "definitely disagree", "probably disagree", "not sure", "probably agree" and "definitely agree".

N.B. Permission to use this test has been obtained from Ewing and Johnstone

APPENDIX 18

Comment by Upstead P teachers on completion of the main study.

"Parents have said that they have seen improvements in fluency and attitude to reading."

"Paired reading in the second year gave the children a far greater element of choice and variety and got them away from the rather inadequate schemes we had previously."

"Progress in fluency and speed was apparent particularly in those with weaker reading ability."

"There was undoubtedly some 'spin-off' in helping comprehension..."

"Several parents mentioned that they had enjoyed paired reading in that it was a shared experience."

"Oliver McKeown has made incredible progress and is really enjoying his reading." (a comment from the remedial teacher).

APPENDIX 19

Upstead P: comments by parents on completion of the main study.

"Getting better all the time."

"She's reading with a lot of expression now

"Pleased to see Helen making her own attempts at the new vocabulary."

"Improved in the tricky words."

"Enjoyed the play on words - smashing, sloshing, etc."

"The project has made me think more clearly about Helen's reading skills. We found the books all most enjoyable and fun to read. I think the selection of books made a big difference to the willingness to read."

"I have also completed this course with my daughter of six and am absolutely delighted with her results."

"... the project has taught me to be more patient with mistakes and to give more praise. Stella is now going to do her Booklover's Badge with the Brownies."

"I am impressed with the scheme and feel it should be used more widely."

"I am going to try paired reading with my other two children."

"Eleanor seems to be growing in confidence and is reading more quickly and connectedly."

"At beginning of project resented giving up 15 minutes playing time but there's now been a definite change and she's asking me to do it."

"Tom has never read with such confidence and expression."

"Benjamin's improving every evening."

"There's a marked improvement in James' reading."

"Being involved in the project seemed to give him more incentive to read."

"Excellent project - should be introduced at an earlier age."

"... the project was relaxing and we could sit together and enjoy the books whereas reading was a struggle before for both myself and Nicola."

"With the amount of confidence and improvement that Tom has made, I feel somewhat cross that this has not been introduced earlier. Tom now tackles the newspaper."

"An interesting project which has certainly boosted Amy's reading and confidence."

"Melanie is a much happier reader now; a lot of the tension about the whole subject seems to have disappeared."

"Noticed that Rebecca is trying to copy me reading with meaning..."

"... increasingly bored with reading together...found it tiresome."

"Hilarious - laughed till it hurt. Jodi's reading very good."

"...I was amazed at the way he was tackling some of the very hard words."

"I have noticed a definite improvement in Darren's reading...he is always eager to continue."

"I have found the improvement in his standard of reading amazing. I feel if we continue the scheme without school backing or your backing or diaries it will soon die a natural death."

"Since the scheme started apparently Richard's school work has improved immensely too."

(A child's comment) "Can I make just one point, most of the books were boys' books."

APPENDIX 20

Browning C: comments by teachers on completion of the main study.

"From the children I have talked to all feel they have improved."

"...the majority of children have improved in their fluency and expressive interpretation especially the weaker readers..."

"I feel that many children's comprehension was helped by explanations given by their tutor."

"I personally feel children reading together to be a great benefit...often more responsive to peer group assistance than teachers' 'criticism'."

"Wesley matured over the project in his comprehension and fluency. I feel this has since been reflected in other work."

APPENDIX 21

Browning C: comments made by peer tutors on completion of the paired reading intervention.

An interesting sequence of comments about one pupil.

"He laughs a lot but tries hard."

"He still laughs a lot."

"He only laughs a little bit now."

"He keeps talking to Jason and flicking bricks."

"He is coming on well but keeps chatting to Jason."

"He has done very well."

"He keeps saying 'so what' after every sentence."

"He is still saying 'so what'."

"He is improving."

"He needs to learn 'lawnmower'."

"He has done very well."

"He is coming on fine."

"He is getting on well with the hard words."

"There is only a few words he needs to learn."

Another sequence:

"I think an easier book might be better."

"She keeps saying words whitch wernt there."

"She reads very quitly but what I heard was good."

"We did very well today."

"She read very well considering Wesley was distrating her."

"Didn't read all of the time - bit of a dodge."

APPENDIX 22

Comments by cross-age tutors after the completion of the paired reading intervention.

"He likes to rush into reading on his own and misses out words and stumbles. He needs to speak up more as well."

"We have now started a book called birds. Robert likes the book becauses he watches birds and actually so do I !!!

"We are reading a poem book, but I cannot read it as a poem because he likes to read it straight off."

"Robert likes us to explain to him some words."

"There was a picture of gorilla dung and Robert went very immature."

"He doesn't like paired reading he says I'm bossy."

"Her voice didn't go into the tones."

"We both enjoy the book which makes it easier."

"Sarah likes to read more on her own now, and she reads more clearly."

"She has improved since week 1."

"When he gets to a bit where you have to put on expression he doesn't."

"Paul secretly put the book back and spent all the time in the middle area."

"This book was too hard for Amanda and long."

"Amanda read at the same tone all the time."

"Amanda was not concentrating so I told her to look at the book and concentrate."

"She was all sort of the same tone so I tried to tell her to put some body into it."

"I must admit Amanda is much better at her reading."

"Kelly-Ann is guessing words which is good her reading is getting better every day."

"She is a good reader we get on very well."

NB. Four fourth year tutors commented that paired reading should have been in the morning because they have missed certain things in class.

APPENDIX 23

Miscellaneous comments: Browning C pupils/tutors.

(Pupil) "I didn't like my tutor. Would have liked paired reading if I'd had a good tutor."

(Tutor) "We wern't friends...I hate my pupil,,,Ithink he should have been with a friend."

(Pupil) "I like to read to somebody better than me."

(Pupil) "You can do it together."

(Tutor) "I sort of like paired reading...my pupil mucked around...If I had a decent pupil I'd go on."

(Pupil) "Now I can read my books at home."

(Pupil) "I can learn more words and really get used to it."

APPENDIX 24a

STRUCTURED PARENT QUESTIONNAIRE ANALYSIS - UPSTEAD P.

A

WHAT DID YOU THINK OF PAIRED READING ?	YES	NO
1. Did you find the project interesting ?	44	0
2. Did you get enough help during the project ?	43	1
3. Was paired reading easy to learn ?	40	4
4. Did your child enjoy the project ?	39	5
5. Was the diary useful ?	37	7

B

	YES	NO
1. Was it hard to find a suitable place to read ?	0	44
2. Were there any problems getting books ?	6	37
3. Was it hard to find time to read regularly ?	19	25

C

HOW HAS PAIRED READING HELPED YOUR CHILD ?	YES	NO
1. In understanding of reading	38	5
2. Confidence in reading	38	4
3. Keeps a steadier flow	35	5
4. In amount of reading done	33	11
5. Interest and enjoyment of reading	33	9
6. Reads in a more lively way	33	7
7. Makes fewer mistakes	32	7
8. Willingness to read	30	13
9. Variety of reading material	27	17

COMMENT.

Item C5 ("Interest and enjoyment of reading"): of the 9 negative responses 8 were from Groups 2 and 3.

Item C6 ("Reads in a more lively way"): all the 7 negative responses were from Groups 2 and 3.

Item C8 ("Willingness to read"): of the 13 negative responses 12 were from Groups 2 and 3

NB Some non-responders to individual questions: otherwise n = 44 (one questionnaire not returned).

APPENDIX 24b

STRUCTURED CHILD QUESTIONNAIRE ANALYSIS - UPSTEAD P.

	EASY	HARD
1. Was it easy to find a place to read, or hard ?	39	4
2. Was paired reading easy to learn, or hard ?	34	9
3. Was it hard to get books, or easy ?	31	12
4. Was it easy to find time to read, or hard ?	24	19
	YES	NO
5. Was the diary a good idea ?	37	6
6. Did you like paired reading ?	36	6
7. I am better at all kinds of reading	35	6

COMMENT: The 9 children who responded "HARD" to Item 2 were spread equally across the three groups.

NB Some non-responders to individual questions

APPENDIX 24c

Paired reading checklist completed during visits to Group 1 children - Upstead P.

	YES	NO
1. Where are the books coming from ? School 11, Home 1 and Both 3.	--	--
2. Is the child choosing them ?	14	1
3. Are there enough different kinds ?	13	2
4. Are they too hard or too easy ? Hard 1, Easy 1, All right 13.	--	--
5. Does the child read in a quiet place ?	14	0
6. Is it comfortable for both to see the book ?	14	0
7. Do both show interest in the book ?	14	0
8. And talk about the pictures and story ?	12	2
9. And with the child doing most of the talking ?	8	2
10. No fussing about mistakes ?	12	1
11. No breaking up of words ?	13	0
12. Child not struggling for more than five seconds ?	13	0
13. Parent correctly repeating failed words ?	14	0
14. Child then repeats correctly ?	14	0
15. Parent praises a lot ?	8	6
16. Praise given with feeling ?	8	6
17. Reading together ? Yes 11, Erratic 1 and some shadowing 1.	--	--
18. Not too slow or fast ? All right 11 and Erratic 2.	--	--
19. Flowing and lively: not jerky or flat ? Flowing and lively 10 and Jerky 3.	--	--
20. Pointing to words - parent or child ? Parent 8,	--	--

child 1 and not at all 4 (simultaneous reading).		
21.Child signals for reading alone ? Yes 11 and prompted 1.	--	--
22.Signal clear and comfortable ?	10	0
23.Signal doesn't break flow of reading ?	10	0
24.Parent goes quiet straight away ?	10	0
25.Parent praises child for going alone ?	10	2
26.Parent goes on praising during reading alone ?	8	4
27.Pointing to words - parent or child ? Parent 6, child 1 and not at all 5 (independent reading).	--	--
28.Parent joins in again at mistake ?	10	1*
29.Reading together resumes till next signal ?	11	0

* = waiting

NB In some cases assessment of responses was inconclusive hence total for some items was <15.

APPENDIX 24d

Analysis of open-ended observations made by the parents, teachers and children based on diaries and comments from visits and telephone conversations - Upstead P.

Positive.

	Group 1	Group 2	Group 3	Total
1. Fluency.	35	9	15	59
2. Enjoyment.	26	10	10	46
3. Improved expression.	20	8	3	31
4. Confidence.	18	13	3	34
5. Value of paired reading.	15	*	*	15
6. Comprehension improved.	4	-	2	6
7. Accuracy improved.	4	-	1	5
8. Good choice of books.	4	-	1	5
9. Relaxing.	3	-	-	3

Negative.

1. Worry about small errors.	4	1	9	14
2. Reading together disliked.	*	7	*	7

* = Innapplicable

NB Data from parents, teachers and children are aggregated: opinions of parents and children are separately and adequately shown at Appendices 24a and 24b.

APPENDIX 24e

Structured cross-age tutor questionnaire analysis:

Browning C

Positive questions.	Section A.	
1. Understanding books more	about the same	less
9	3	0
2. Reading more	about the same	less
8	3	3
3. Keeping a steadier flow	about the same	less
8	3	3
4. Enjoyed reading more	about the same	less
7	4	3
5. More willing to read	about the same	less
6	3	3
Negative questions.		
1. Less confident in reading	about the same	more
1	4	9
2. Less interested in reading	about the same	more
1	4	9
3. Sticking to the same kind of book 3	about the same 3	different 8
4. Making more mistakes	about the same	less
2	4	8
5. Reading in a lifeless way	about the same	lively
7	1	6

Section B.

Would you like to:	Choose up to three
1. Go on peer tutoring as often as now ?	13
2. Go on tutoring but not so often ?	2
3. Go on tutoring with a different pupil ?	9
4. Be tutored youself by someone better ?	9
5. Tutor reading, but in a different way ?	0
6. Tutor something else, like maths or spelling ?	0

NB Some non-responders to individual questions

APPENDIX 24F

Structured peer tutor questionnaire analysis -Browning C.

Positive questions	Section A	
1. Reading more	about the same	less
7	5	2
2. Understanding books more	about the same	less
7	5	2
3. Enjoyed reading more	about the same	less
6	4	4
4. More willing to read	about the same	less
3	6	5
5. Keeping a steadier flow	about the same	less
3	4	7
Negative questions.		
1. Making more mistakes	about the same	less
2	4	8
2. Less interested in reading	about the same	more
3	4	7
3. Less confident in reading	about the same	more
3	6	5
4. Reading in a lifeless way	about the same	lively
9	2	3
5. Sticking to same kind of book	about the same	different books
9	0	3

NB Some non-responders to individual questions

Section B.

Would you like to:	Choose up to three
1. Go on peer tutoring as often as now ?	10
2. Go on tutoring, but not so often ?	0
3. Go on tutoring, but with a different pupil ?	8
4. Be tutored yourself by someone better ?	6
5. Tutor reading, but in a different way ?	0
6. Tutor something else, like maths or spelling ?	0

APPENDIX 24g

Structured pupil questionnaire analysis with peer tutor: Browning C.

	Yes	No
1. I am better at all kinds of reading.	14	0
2. Did you like paired reading ?	9	5
	Easy	Hard
3 Was it easy to find a good place to read, or hard ?	12	0
4. Was it easy to find time to read, or hard ?	12	0
5. Was paired reading easy to learn, or hard ?	12	1
6. Was it hard to get books, or easy ?	2	10

NB Some non-responders to individual questions

APPENDIX 24h

Structured pupil questionnaire analysis with cross-age tutor: Browning C.

	Yes	No
1. Did you like paired reading ?	13	2
2. I am better at all kinds of reading	14	1
	Easy	**Hard**
3. Was it easy to find time to read, or hard ?	15	0
4. Was it easy to find a good place to read, or hard ?	15	0
5. Was paired reading easy to learn, or hard ?	13	2
6. Was it hard to get books, or easy ?	4	11

APPENDIX 24i

Analysis of open-ended observations made by teachers and children based on diaries and comments - peer group: Browning C.

Positive.	Times mentioned
1. Value of paired reading	6
2. Good pairings	6
3. Increased confidence	4
4. Improvement in reading	4
5. Increased friendliness	4
6. Development in maturity	4
7. Improved comprehension	3
8. Improved expression	3
9. Improved fluency	3
Negative.	
1. Problems with choice of books	7
2. Unsuitable pairing	5
3. Personality clashes	3
4. Problems created by "split class"	2

N.B. A useful comment made by two fourth year tutors suggested that tutors should change round at fortnightly intervals.

APPENDIX 24j

Analysis of open-ended observations made by teachers and children based on diaries and comments - cross-age group: Browning C.

Positive.	Times mentioned
1. Improvement in reading	8
2. Suitable pairings	8
3. Improved confidence	4
4. Improved maturity	4
5. Fluency	3
6. Improved expression	3
Negative	
1. Difficult to find suitable book	8
2. Unsuitable pairing	4

APPENDIX 24k

Analysis of same sex/opposite sex pairings in groups 5 and 6: Browning C.

	SAME SEX		OPPOSITE SEX	
GROUP	BOY/BOY	GIRL/GIRL	BOY/GIRL	GIRL/BOY
5	3	6	1	5
6	5	2	3	5

NB Tutor is mentioned first.

APPENDIX 25 (also see Appendices 26 to 29)

A survey of some reading tests in current use

Firstly consideration will be given to some reading tests in current use namely the Schonell, Holborn, Burt and the Standard Reading Test. After demonstrating their inadequacy for research purposes, reading tests which have any claim to be considered for use in the present study are examined at greater length in Appendices 26 to 29: they include the Neale Analysis of Reading Ability, the Hunter-Grundin Literacy Profiles and the Primary Reading Test - both these latter tests show signs of achieving popularity - and the New Macmillan Reading Analysis. The New Macmillan is being reviewed because it has pretensions to replace the Neale.

Some idea of the wealth of choice available is, that according to calculations made by Yarington (1978), up to that date some 900 tests had been published for the purpose of testing reading. The test popularity league is indicated in the table below. It is based on two surveys of infant, junior and middle schools in Northamptonshire by Bullock (1975) and Friend (1981) and a further survey quoted by Goodacre (1986) illustrates the slow decline of the still popular Schonell Graded Word Reading Test (Schonell and Schonell, 1942-1945).

1st Publication:	Test	Bullock:	Friend:	Goodacre
1942	Schonell	73	67	46
1948	Holborn	27	45	-
1938	Burt	34	37	-
1958	Standard Reading Test	-	34	-
1957	Neale	-	21	-
1954	NFER AD	-	13	-

Friend (1981) also reports a survey by Nicholls(1975), in the same year as the Bullock Report appeared, which confirms his data. The survey found that, on Teeside, the majority of schools used the Schonell, Burt or Holborn tests. Friend (1981) found that, in his survey, 96% of the schools used published tests of reading. Since 1981 Steadman and Gipps (1984) have reported the evidence of the Evaluation of Testing in Schools Project funded by The Social Science Research Council at the London Institute of Education between January 1980 and February 1984. This showed that the Schonell Graded Word Reading Test was still the most popular reading test used by teachers. Friend (1981) also found that, of the 57% of schools which also used a diagnostic test, 27% used The Daniels and Diack Standard Word Reading Test (Daniels and Diack, 1958) and 19% The Neale Analysis of Reading Ability.

Gipps and Wood's (1981) 1980 survey aimed to discover the extent to which LEA'S were testing in schools. Eighty-eight per cent of 104 authorities completed questionnaires. Of these, 71% reported regular authority-wide testing. By far the most popular test was The Young

Group Reading Test (Young, 1980) used by just over 23% of authorities; no other test exceeded 6.3% usage. Perhaps surprisingly 35 other tests were used of which six were individual tests and 29 were group tests. It should be noted that the popularity of tests used by LEA'S cannot be compared directly with those used by teachers because the preponderance of tests used by the LEAS are, for practical and economic reasons, group tests.

An analysis of reading tests used in studies of paired reading shows that, out of 38 studies examined, 14 used the Neale Analysis of Reading Ability followed far behind by Young's Group Reading Test; fifteen other tests were also used.

It is interesting to note the reasons which Bullock, DES (1975), and Friend (1981) give for the persistence in the use of word recognition tests in schools. Bullock, whilst expressing grave doubts about the value of such tests, comments that reading is generally taught with a more holistic approach.

The truth about the persistence of word recognition tests probably lies between Bullock's comment and the comment of Friend (1981) who suggests that it is because teachers are only aware of a narrow area of reading skill and teach and test accordingly. He also gives less pejorative reasons: that such tests are readily available, easily duplicated, cheap, readily understood and deal in the immediate feedback of a reading age. They can of course also be administered quickly, but perhaps teachers are not as naive as they are made out to be; whilst lip-service is paid

to testing which is expected of them, more attention is given to informal reading inventories and reliance on experience for which allowance does not appear to be made in the surveys considered. With good reason Gipps and Wood (1981) comment that single word tests can be regarded as artificial. An equally cogent reason for their rejection as research instruments is that the three most popular tests were standardized between forty and fifty years ago and fall far short of the criteria recommended by Bullock (1975) and Kirby (1983) that tests should have been developed in the previous ten years or the slightly longer period of fifteen years suggested by Vincent (1985).

Beard (1987) quotes the Start and Wells (1972) survey of reading standards to illustrate the inaccuracies associated with dated reading tests. The survey clearly indicates the increasing performance between the years 1948 to 1964 on the Watts-Vernon (1947) silent reading test attributed to a reading age of eleven irrespective of any fluctuations since that date. It should be noted that researchers are talking about development of tests and not restandardization.

Vincent also refers to the mistaken meaning and authority vested in the reading age score which is out of all proportion to its statistical origins. More attention will be given to this point later. One hopeful indication that the situation is changing is that Friend's (1981) survey showed that 57% of the schools he surveyed also used diagnostic tests, presumably alongside the single word test.

The literature provides more specific examples of problems with the Schonell and Burt word reading tests and the Holborn sentence reading test. The Schonell was standardized in 1972 though its original development was in the late forties. Its scope is very restricted; there are limited possibilities for diagnosis and no provision for comprehension (see Steadman and Gipps, 1984). They also note that too frequent use enables the children to remember the word sequence and, at the extreme, they report instances of teachers fastening copies of the word list to the wall. Their most damning criticism is of the manner in which the reading age score of word recognition tests is taken as representing the complex skill of reading when it is only the score of a sub-skill.

The Schonell is identical in format to the Burt which Vincent et al (1983) say is subject to similar disadvantages and of which they comment "... to give the Burt is to impose an intrinsically meaningless task upon a child." They comment upon the latest revision of the Burt, undertaken by The Scottish Council for Research in Education in 1974; that this revision could only have been effected because of the sheer popularity of the test, certainly not because of any other virtue!

The Holborn (Watts, 1948) is another example of a reading test which has achieved popularity because of the ease and speed of individual administration and its simplicity. Vincent et al (1983) express surprise that, after withdrawal of the test by the publishers, and in spite of its archaic language and inadequate standardization it

was reissued in 1980 and further reprinted in 1981 and 1982. Whilst it might be regarded as a somewhat superior instrument to Burt and Schonell because it is a sentence reading test as opposed to a word recognition test, Vincent et al (1983) observe that unconnected sentences out of context are no better than words out of context. The unsuitability of any of these tests for research purposes poses the question as to whether tests in the "diagnostic" category are any better.

The Standard Reading Test (Daniels and Diack,1958) and The Neale Analysis of Reading Ability (Neale, 1966) were identified by Friend (1981) as the two most popular diagnostic reading tests used by teachers with Daniels and Diack having the edge. Of tests used by local authorities it will be recalled that the Young Group Reading Test was shown by Gipps and Wood (1981) to be the most popular diagnostic test. Gipps et al (1983), Spooncer (1983) and Levy and Goldstein (1985) make very favourable references to these tests. Whilst the London Reading Test (Biscoe et al, 1980) also receives commendation from different sources it will not be considered here because it is intended for the junior/secondary transfer age group.

The Standard Reading Test (Daniels and Diack, 1958) is called popular but ageing by Friend (1980) and, although Pumfrey (1985a) comments that teachers have found the battery of tests of great help, they are both agreed that the lack of details about standardization, reliability and validity make the results difficult to interpret and would certainly disqualify the test for use in a research study

unless it required criterion referenced data alone. The Young Group Reading Test (Young, 1980) is a popular test with LEAS for many of the usual reasons: that it is straightforward, quick and cheap and, moreover, it was restandardized between 1974 and 1979. Two crucial objections preclude its use for research purposes; there have been problems over its standardization in that 50% of the children over ten years scored at the ceiling and it also attempts to cover a wide age range with a relatively small number of items (cf Gipps and Wood, 1981 and Vincent et al, 1983).

APPENDIX 26

A critique of the Neale Analysis of Reading Ability.

The Neale Analysis of Reading Ability has some claim to be seriously considered for this study. Pumfrey (1985b) comments that it is an instrument used widely in many studies in which individual testing of reading is deemed to be important and thus comparative studies are readily effected. Topping (1985b), who has been responsible for supervising a number of the more rigorous studies of paired reading, makes a very significant comment about the Neale: "It covers a fairly wide age range, and on the surface seems the most relevant test to the paired reading process." In the following discussion some weight will be attached to these conclusions. Another reason for the popularity of the Neale may be, as Vincent (1985) remarks, that it is customarily used by educational psychologists who would normally use individual tests, among which the Neale is the most popular. Quicke (1982) reports the result of a questionnaire completed by 293 educational psychologists representing a third of those practising in 1981. Fifty-two per cent used the Neale regularly and 84% were regular and occasional users.

To quote the manual (Neale, 1966), it is designed to assess a child's "... difficulties, weaknesses, types of errors, persistence and attitudes..." Patterns of errors can be identified and the supplementary tests enable the teacher to explore other skills which are important in the reading

process. The test is intended for the age range seven to thirteen and comes in three parallel forms A, B and C. As a general comment Pumfrey (1985) concludes that the test material is well organised and instructions are clear though he does urge care in recording the six error categories if results are to be reliable and valid. Topping's (1985b) conclusion that the Neale is time-consuming can be misleading since any comparable test providing the range of data described is likely to be so, and clearly in this case large numbers of teachers and researchers have deemed the time spent to be worthwhile.

Since the Neale has been used over many years it would be superfluous to provide an in-depth critique but what is offered will aim to identify the doubts and inconsistencies which Topping (1985b) has found in using it for paired reading studies. Vincent et al (1983) note that standardization is too dated to justify its continued use as a normative measure. For example, Neale (1966) states that the test was constructed according to word lists published in 1944 and 1949 three of which were American and on the achievements of the children participating in the standardization. Pumfrey (1985b) adds that the sample size tested was relatively small and was localized in the MIdlands. Apart from the implications for the accuracy of the norms both he and Topping (1985b) point out that the sample involved children in the seven to eleven age range and warn against the common practice of extrapolating the norms beyond eleven plus - an age bracket not however the concern of this present study. The dated and inadequate

standardization clearly has implications for the "integrity" of the reliability and validity coefficients where these are available.

For reliability Topping (1985b) observes that the cross-reliability of the parallel forms is open to grave doubt. He notes that, of the children involved in the original standardization the majority completed Form A and thus the evidence for the comparability of Forms B and C is based on very small numbers. In a review published shortly after the appearance of the Neale, Brimer (1965), it is pointed out that the sample of 2000 was spread over seven year groups; of these 200 per group were alloted to Form A and 50 each to Forms B and C ; no account is given of the distribution of variables such as age, sex or size of school. This lack of comparability leaves investigators with the unsatisfactory choice of allocating forms at random at pre-test and at random from the remaining two at post-test or using A as the best "standardization" form at both pre and post-test.

Topping (1985b) usefully if enigmatically adds that "There is some evidence that the Neale does not suffer from practice effects nearly as badly as word recognition tests, at least over periods of fifteen weeks, but whether this applies to periods as short as six weeks, and with the non-normal samples at which paired reading projects are often aimed is another question."

In his analysis of the Neale Pumfrey (1985b) quotes parallel form reliability as "high" at 0.96 with a similar coefficient for reading accuracy; for comprehension

he states that the lowest reported reliability coefficient was 0.92. The lack of a reliability coefficient for rate of reading score leads to his comment that paucity of information makes statistical interpretation of a profile impossible. He also complains about the lack of validity data which he says is reported for each age level at 0.95. It is not surprising to find that, where the interpretation of the Neale is concerned, Pumfrey observes that, whilst reading ages for accuracy, rate and comprehension are provided, the manual is not clear as to where and how the data were obtained.

Topping's (1985b) comment on the comprehension questions is disturbing. He argues that they are so few in number that the response to one question potentially effects a substantial shift in score and is of the opinion that, in some cases, the gains in comprehension scores by comparison with accuracy scores have been so large as to be barely credible.

In summary, additional criticisms and conclusions are made. Pumfrey (1985b) describes the manual as being very brief and it is only too apparent that he is correct in stating that the technical aspects of construction, validation and interpretation are only superficially dealt with. He also questions the validity of simultaneously testing rate, accuracy and comprehension when the three aspects are interdependent in oral reading. He concludes that the Neale's many weaknesses cannot fully meet the professional requirements of users which Neale herself rightly identified and aspired to meet.

Both Topping (1985b) and Vincent et al (1983) criticize the language of the Neale which Vincent and his colleagues describe "as in dire need of modernization." Both authors refer to "the milkman's horse" and "wandering in the fog" as examples. Perhaps of more concern is the tortuous wording of the final passages: "in reproof, the subterranean cauldron suddenly exploded violently." However, whilst Vincent et al (1983) urge that a successor on similar lines to the Neale is urgently needed, they stress that it has nevertheless been of time-proven value to the teacher, though with the experience of the Schonell in mind this is not necessarily a recommendation.

Finally Topping (1985b) claims, without providing any data, that correlation between pre-post gains and teacher/parent naturalistic observations of reading improvement has not often been good, although he does add that this could be said of many reading tests. Quite how teacher/parent naturalistic observations were measured and correlated with the reading age scores we are not told but if true they only serve to emphasise the need for more accurate measurement. For the purpose of use in paired reading studies Topping concludes that the Neale is the best of a bad bunch of individual tests.

Since writing the preceding comments on the Neale, Neale et al (1987) give a background account to the restandardization of the test in 1984. They cite its wide usage in epidemiological studies (Rutter et al, 1982), surveys of reading (Bullock, 1975), differential diagnosis of reading performance (Yule, 1973 and Yule et al, 1982),

experimental studies concerning different treatment methods (Downing, 1965; Riding and Pugh, 1977 and Bradley and Bryant, 1981) and studies of reading disability (Hornsby and Miles, 1980) etc. as evidence of its popularity.

Neale et al (1987) also place the " rise and fall" of the Neale in an historical perspective when they adduce its advantages over the graded word and isolated sentence reading tests current in the 1950's. They claim that the Neale anticipated the psycholinguistic approach in understanding the reading process, placed reading behaviour as a language skill within the context of child development theory and moved from a piecemeal approach to language difficulties to a more comprehensive view.

Neale et al (1987) acknowledge the need for restandardization regarded by many as long overdue and for the application of the increasing knowledge of the technical and psychometric properties of tests demanding a need for greater methodological rigor. That the restandardization of the Neale will shortly be published (1989) is welcome but it also vindicates criticism of the use of the original test for contemporary research.

APPENDIX 27

A critique of the Hunter-Grundin Literacy Profiles.

The Hunter-Grundin Literacy Profiles (Hunter-Grundin and Hunter-Grundin, 1980) are described by Vincent et al (1983) as deserving serious consideration to provide a basis for language monitoring in schools. The test covers comprehension, spelling, free writing and spoken language in detail and also measures children's attitude to reading. Widlake and McLeod (1984), whilst pointing out that it is essentially a group test, regard it as a valid and useful addition to the instruments available, constituting an advance on most other tests through the broad view of language development which it incorporates. Widlake and McLeod used the Hunter-Grundin in a research project surveying the language skills in eight primary schools in Coventry. They adduce its recent standardization, national norms and "novel" approach to language measurement as their reasons for adopting it. Its initial reception however has been very mixed. Vincent et al (1983) are of the opinion that adequate accounts of standardization procedures are given and that the supporting information on socio-economic variations in the norms is useful. However Beech (1985) observes that there is no demographic data provided to support these claims. If however the poor performance of children in the lowest socio-economic categories has much to do with the failure of the teaching profession to enlist parental co-operation in their children's education,

particularly in reading, such information can be seen as chasing a lame duck. Pumfrey (1985a) and Vincent et al (1983) both point out that the Hunter-Grundin requires a considerable investment in time and effort and that it is expensive though "time and effort" would not be the crucial factors for determining its use in this study.

Gipps' (1985) review in Levy and Goldstein (1985) is very critical. He states that nowhere is any information given about item preparation, that standardization information is limited and patchy, the attitude scale is so grossly uninformative as to be useless and that information on reliability and validity is so scanty as to make the whole test questionable. After commenting that the lay-out of the test is poor he concedes that it would be a useful test if it were improved. Kennedy (1985) is also of the opinion that, in general, the disadvantages outweigh the advantages. In the absence of more supportive evidence from user-reviewers the use of the test for this present research would clearly be unwise and thus an extended analysis of its development would be somewhat redundant.

APPENDIX 28

A critique of the Primary Reading Test.

The Primary Reading Test (France, 1981) appears to have been well received and Vincent et al (1983), in one of the few published reviews, comment on the high standard of its statistical development. The items consist of selecting a word from among five to match a picture, and sentence completion. The same items are used for both word recognition and comprehension though the instructions are appropriately varied. If however a measure of both skills is required parallel forms need to be administered and, since these are limited to two, the test cannot usefully be used as a measure of progress for both word recognition and comprehension, By comparison with the Edinburgh Reading Tests, what might conveniently be termed the "operational definition" of comprehension, is quite different and restrictive in its scope. The Primary Reading Test measures comprehension using the devices referred to above. The Edinburgh requires the correct identification of words, naming the elements of a picture in response to questions, response to questions about brief prose passages and the sequencing of questions and answers in a dialogue. Significantly it uses the selection of a word to match a picture solely as a word recognition test and sentence completion is a separate category of syntax. For the purpose of this study the wider definition of comprehension implied is much to be preferred.

APPENDIX 29

A critique of the New Macmillan Reading Analysis (NMRA).

The NMRA (Vincent and de la Mare, 1985) together with the manual of the same date was standardized between May and July 1984. At present (1987) there is no thorough published critique of the NMRA hence this present critique is somewhat lengthy and tentative. It has been heralded as the successor to the Neale. There are three equivalent forms of which form A is slightly easier than forms B and C and should therefore be used as the initial test for younger and delayed readers. Conversion tables give equivalent scores for the different forms. It is an individual test of reading ability and comprehension to provide diagnosis and assessment of reading progress in the junior years. Since the predominant concern of the present study will involve the NMRA's ability to assess reading progress its diagnostic role will not be discussed here. The authors remark that it is intended to provide a superior alternative to graded word recognition and oral sentence reading tests for routine progress testing, which they would probably agree was not a daunting task in itself. It is suitable for children of average reading ability in the seven to nine plus age range and for older delayed readers reading at the age of the average seven year old or above. This would preclude its use for delayed seven and eight year old readers and will need to be considered when the target group is discussed. The authors have developed a system of scoring which is unique

for reading tests: age equivalent and Rasch scale scores which will be referred to below.

The qualitative features of the test material such as the design of the test booklet, ease of usage, attractiveness and durability appear to be satisfactory. Perhaps "disasters" are over-represented in the text of the test, but this is purely a matter of opinion. The authors claim that they have provided a variety of style and types of fictional and non-fictional material. However, the initial reading passage for form A portraying a startled child opening a box which turns out to be a "big black cat" can hardly have a calming effect on a nervous subject. Whilst generally speaking the test is easily administered there must be some doubt about the clarity of the directions. After the completion of each passage, the comprehension passages are put to the child. Before reading the passage the instructions require the examiner to inform the child that he will be asked some questions at the end of each passage and will be allowed to "look at the test quickly". Further instructions to the child before questioning are "look at passage briefly". The instructions to the examiner say that the child should be allowed ten seconds to answer but that he should be prevented from extended reading or a word-by-word search. On the basis of limited usage of the test by the author these instructions are confusing and they render interrater reliability problematical. The instructions should be clear-cut; either, as in the case of the Neale, reference to the text to respond to comprehension questions should be forbidden, or

open-ended reference allowed within the ten second time limit. A brief experience of the NMRA would suggest that the Neale method is preferable; children appeared to respond readily with the correct answer or were clearly baffled.

Under the heading of "probing" another aspect of the instructions would appear to contribute to poor interrater reliability. If the examiner suspects that a reader is quoting parts of the text in answer to the questions without understanding, "limited" probing is recommended with the proviso that "Such probing should be kept to a minimum as supplementary questioning can, of itself, signal the answer without the need to refer to the text." In the writer's experience supplementary questioning can also confuse the subject by conveying the message that the first answer is wrong; but the need to resort to such measures may indicate that the construction of the test is faulty. The advice given by the authors that test/retest should be carried out by the same administrators may betray a similar concern especially in the light of further comments which they make when they discuss the test development. Subject to the difficulties just discussed the scoring procedures do not appear to present any real difficulty.

Two types of information are provided by the NMRA: normative information in terms of age equivalent scoring which can be compared with the average levels of test performance provided in the handbook and qualitative information which is not the concern of this study. Age equivalents are expressed in terms of age range, the

chronological age range for which the reader's performance on the test is typical and which provides a 95% certainty that a reader's obtained score "... corresponds with a predicted chronological age within the range indicated." The authors claim that the age band, which allows for the SEM, avoids a spuriously precise label, though the "precise" precision of the monthly increments over the score range might call this statement into question.

As an experimental alternative scale scores are also provided. The authors suggest, among other reasons, that this may be desirable if there are constraints on time, if the user is primarily concerned with measuring progress or differences or if there is a potential comparability with other Rasch-scaled tests. Rasch-scale scores are based on the theoretical assumption of uniform properties of abilities i.e. ability to read words in context or comprehension which, it is claimed can be measured in the same way as physical properties. The scale is regarded as an absolute measure of the ability being tested, each point on the scale representing an equal increment of ability. The scale is arbitrarily centred on a value of fifty as an average related to the total group of children used for standardization and for the full range of ability covered.

The main application of a scale score is comparative; difference between readers and in progress and across scale comparisons between, say, comprehension and words in context. The differences are comparable throughout the range. At present, unfortunately, few British educational tests employ Rasch-based scales which

potentially have much to offer the researcher. In commenting upon the scoring procedures, Whiteley (1986), making a preliminary evaluation of the NMRA from a practitioner's viewpoint, remarks that many practising teachers will find the age equivalent scores irritating, particularly for comprehension where the range can be as wide as 21 months. Indeed Topping (1986b) suggests that the uniformity of the scale scores may be attractive in relation to the rather erratic nature of the age equivalent procedures, which presumably was the aim of the exercise in the first place.

The piloting of the test was effected by the authors and a "... working party of teachers, consultants, researchers and authors with a particular interest in the teaching of reading." after a cycle of field trials and revisions with children regarded as "roughly average" by their teachers and other children receiving remedial teaching. After some redrafting, which entailed a raising of the ceiling of test difficulty and refinement of the comprehension questions to avoid ambiguity, standardization proceeded. To effect a heightening of the ceiling the authors state that, for the most difficult passages, this resulted in "admittedly contrived prose". They argue that the need to differentiate between the performance of nine, ten and eleven year old children makes such contrivances unavoidable. Whilst it is clear from the passages of prose in question that the epithets are somewhat contrived it is questionable whether this is necessarily "unavoidable".

Whiteley (1986) makes reference, not only to the unreliable ceiling, but to the "variously high floor" in the

context that the authors state that none of the children used in the standardization sample made more than five errors on the first level passages. Whiteley found however that seven out of 38 children tested by her made five or more errors and thus their reading age could only be denoted as less than the range 6:11 to 8.00 years. Perhaps this is not surprising as the test was validated using an "average sample". The piloting process did not fully resolve the suitability of the comprehension questions; indeed it was decided to make the final selection of questions after the standardization stage. Subsequent problems with the validation sample call into question the reliability of the final selection and perhaps the instruction to administrators to ask supplementary questions if a child's response is not clear may reflect this. However it is also possible that the design of the comprehension questions was too ambitious. It is stated that they were constructed to elicit explicit factual understanding, an ability to make inferences and to formulate relevant predictions and hypotheses about what has been read. Of further concern is the use of the term "roughly average" when referring to children used as a sample for the initial field trials. As will be noted below such unsatisfactorily vague terminology would seem out of place in the development of such an instrument.

There are a number of unsatisfactory aspects associated with the standardization sample. The sample was drawn from 71 primary schools in two London boroughs. It was hoped to obtain 600 children over the age range 7:05 to

12:07 i.e. ten children for each month over the five year range. The Primary Reading Test (France, 1981) was administered within the selected schools and those children with standard age scores of 99, 100 or 101 were eligible for the sample. They were regarded as a criterion group of average readers for the chronological age group. It was intended that the age norms for the test would be established by administering it to the groups of ten children in ascending chronological age by months across the current junior age range. The authors state that cost and time factors precluded national sampling but they argue that the standardization should be deemed to be adequate since the aim of the test was the "... assessment of backwardness and monitoring of progress related to reference groups of average children."

Much of the foregoing procedure should be called into question. For various reasons the standardization sample proved to be much less than was proposed: for form A the sample size was 411 or 6.7 children per month; for form B, 434 children or 7.1 children per month and for form C, 404 children or 6.4 children per month. Even without any statistical analysis of the optimum sample size needed for reliability it is apparent that the sample is inadequate particularly if it is borne in mind that the numbers of children per month increment in age is only an average figure. With the financial resources of the publishers available to them it is surprising that national sampling was not possible, a sentiment which is shared by Topping (1986b). After stating (as above) that they nevertheless

deemed the standardization adequate for its purpose the authors subsequently comment that it would be "... difficult to ensure that the content of the tests would be equally familiar to children of all social, geographical and cultural backgrounds represented in the UK." and urge the administrators to verify the appropriateness of the test content for particular readers. Surely, as far as possible, test development should take care of sub-groups; in fact, for example, there are no separate norms for girls which for a recently developed test is surprising.

As the authors comment by way of explanation, the adoption of the Primary Reading Test as the basis for selecting "average" children calls for further comment and indeed it does. The advantages are said to be that it is a group test and is therefore suitable for large scale use by LEA's and indeed was already in use within the two LEA's who agreed to participate in the standardization of the NMRA. In addition the Primary Reading Test has been recently developed and provides norms in the age range for which the NMRA was intended. Apart from the fact that it is described as more thoroughly standardized than most other currently available tests the other reasons appear to be rather naive particularly when they go on to query whether The Primary Reading Test measures the same aspects of reading as the NMRA. It "... consists of discrete sentence completion tasks involving a knowledge of word and sentence meanings."

The authors resolution of this problem is in very questionable and tentative language and certainly not designed to inspire confidence in a test intended to

supersede the Neale. For example they conclude "It would be reasonable to asume that most children who scored average for their age on The Primary Reading Test would perform in the general area for the average on the NMRA." They also say "it would be highly unlikely" that a reader who was average on The Primary Reading Test would be dramatically above or below average in the abilities tested by the NMRA since "... researchers often found substantial agreement between seemingly different reading tests." This may well be, but no evidence is adduced for the statement and important issues do depend upon it. The authors add "... it should also be appreciated that the average NMRA performance attained by this group might not coincide with the "true" average which would have been established by random sampling." or it should be added by adequate provision for sub-group sampling. In fairness what appears to this writer as naivete is assessed by Topping (1986b) as honesty: "The authors must be commended for their honesty in including references to some of the many "warts" in the manual.

The reliability of the NMRA was evaluated by both internal consistency (KR20) and inter-form correlation methods. The authors conclude that inter-form correlation for both accuracy and comprehension are somewhat lower than has been reported for other "similar individual oral reading tests" - for accuracy between 0.91 and 0.94 and for comprehension between 0.76 and 0.83 - though they do regard the accuracy scores as satisfactory. In Topping's view, whilst the inter-form correlations for reading accuracy are acceptable those for comprehension are not. He adds that it

was the doubtful reliability of the comprehension scale of the Neale test which led professionals to look forward to the availability of the NMRA. Once again the authors' ensuing argument appears to be somewhat naive when they say "Nevertheless these values may be a more realistic indication of the reliability of the test, as it will be used, (writer's emphasis), than are figures given for other tests," They also state that the variation in the reliability of their fieldworkers is a reasonable indication of the kind of differences in reliability which are likely to be exhibited by future test administrators. This spurious attempt to justify inadequate standardization must be of concern. Since the SEM is derived from these correlations it is surprising that attempts were not made to ensure greater inter-rater reliability to avoid the large variation "window" in the age equivalent scores of up to 21 months; particularly that of the ten fieldworkers whose correlations were less than 0.8 of whom two were as low as 0.55 and 0.20.

Of internal consistency (KR20) correlations the authors say that, particularly for comprehension, the reliabilities are lower than are usually found with objective tests of reading. It should be noted that no internal consistency correlations are supplied for the main test, but only for the scale score sets based on words in context and comprehension. For words in context the coefficients range from 0.77 to 0.87 with a mean of 0.82; for comprehension the range is from 0.58 to 0.77 with a mean of 0.71. Topping's (1986b) comment on the internal consistency coefficients is that, for accuracy of reading of

words in context, the KR20 correlations are lower than those reported in the manuals of similar tests, but the comprehension coefficients are particularly "worrying". The authors repeat the attribution of these differences to the manner in which fieldworkers administered the test particularly, in their words. "... it is conceivable that variations or idiosyncracies of judgement in assessing particular questions could generally diminish overall inter-question agreement." or some inherent difficulty in the question. Why were steps not taken to identify these inconsistencies and, if confirmed, adapt methods to eliminate them?

As to scorer reliability generally no figures are given but the authors note that the results indicated the presence of both "... intra-administrator and inter-administrator inconsistency which may be unavoidable." Why? The authors continue to indulge the fallacious assumption that inadequate validation is justified on the grounds that it reflects the way in which "real life users" administer the test. On these grounds they dismiss the need for further group and individual training of their administrators because the results of the test would be "artificially optimistic". If by this means test instructions could have been improved or comprehension questions further refined surely both developers and "real life users" (what an odd contrast?) would benefit.

Scant attention is paid to validity. Face validity is assumed because the format is similar to that used in a number of existing tests. Accepting the dubious value of

face validity, the assumption still seems to be somewhat questionable. Of predictive and concurrent validity it is stated that a formal empirical programme was not possible.

There is a suggestion of some uncertainty as to the original date that The Primary Reading Test was administered presumably because some scores were obtained from "existing school or LEA records". If this is indeed responsible for less than adequate reliability quotients why was this not investigated?

Finally low correlations between accuracy and age, comprehension with age and accuracy with comprehension are attributed to the suggestion that the linear model on which such correlations are based is fallacious because the reading ability of average children "... could progress in a curve of progressively declining steepness rather than a straight line." This curvilinear relationship is attributed to the fact that teachers tend to place less emphasis on hearing children read as they get older: ... progress in oral fluency tails off as its prominence in language work increases."

In summary the manual is a most surprising document. As has been noted on a number of occasions the authors themselves make valid criticisms of the test development but then apparently complacently conclude that nothing should be done about them because administrators would be even more fallible and subjective. It is a matter for speculation whether the term "real life users" betrays a fundamental attitude of dissatisfaction with the utility of reading tests generally and an implication that development is an

artificial exercise conducted in cloud-cuckoo land. What is certain is that a definitive critique is likely to be more trenchant in its language than this preliminary critique. Topping is in agreement with this overall assessment when he states "that it is difficult to come to any other conclusion ... that the structure and standardization includes grave deficiencies which must be taken into account by potential users." After years of waiting it is disappointing that Neale afficionados will still have to wait for a "worthy" successor. In a recent private communication to the author Topping has evaluated the NMRA being used in paired reading studies. He terms the results "alarmingly erratic" which confirms the misgivings expressed in the preceding analysis.

APPENDIX 30

DETAILS OF THE CLASSICAL PAIRED READING TECHNIQUE AND OF THE SIMULTANEOUS AND INDEPENDENT MODES

It will be noted that the simultaneous and independent modes are essential elements of the classical paired reading technique. A full discussion of the technique's sequence is contained in Chapter 6.4.iii which also deals with most of the problems which are likely to arise within the prescribed procedures. Further information can be obtained by studying the parents' paired reading handbook at Appendix 8 and the instruction sheet given to the child tutors at Appendix 15. The wording provided below assumes that the tutor is an adult hence the wording of Appendix 15 is modified for a child tutor.

Classical paired reading

1. Allow the child to choose the book.

2. Choose a comfortable, quiet place close together.

3. Parent and child read all words together.

4. Attempt to do paired reading for up to fifteen minutes a day for six days a week.

5. The parent should point to the words if necessary though it is better if the child does so.

6. A pre-arranged non-verbal signal tells the parent to be quiet so that the child can read independently.

7. When the child fails to read or struggles for more than a few seconds paired reading resumes.

8. Discuss story when a natural break occurs.

9. Praise your child appropriately.

Simultaneous reading

1. Allow your child to choose the book.

2. Choose a comfortable, quiet place close together.

3. Tutor and pupil read all words together.

4. Attempt to read together for up to 15 minutes a day for six days a week.

5. The tutor should point to the words if necessary.

6. If your child fails to read a word model it again and require your child to repeat it.

7. Discuss the story when a natural break occurs.

8. Praise your child appropriately.

Independent reading

1. Allow your child to choose the book.

2. Choose a comfortable, quiet place close together.

3. Listen to your pupil reading.

4. Attempt to read together for up to 15 minutes a day for six days a week.

5. When your pupil fails to read a word or struggles for more than a few seconds read the word correctly and require your pupil to repeat it.

6. The tutor should point to the words if necessary.

7. Discuss the story when a natural break occurs.

8. Praise your child appropriately.

APPENDIX 31

SUMMARY OF STATISTICAL TABLES IN CHAPTER 8

KEY: ERT = Edinburgh Reading Test

MFFT = Matching Familiar Figure Test

DART = Dundee Attitude to Reading Test (ATR2

TABLE(S)	DESCRIPTION
6A to 6G	ERT RQ basic statistics.
7	ERT RQ raw data basic statistics.
8	Comparison between ERT RQ scores for Upstead P and Browning C for Times 1, 2 and 3.
9,10 +11	't' tests: ERT RQ increases between the three administrations (Times 1, 2 and 3).
12 and 13	Comparison between base reading data for Upstead P, prior to study, with first ERT data (Time 1).
14	MFFT basic statistics.
15 to 18	DART basic statistics.
19 to 23	One-way ANOVA and 't' tests: comparing ERT RQ and comprehension progress between experimental groups.
24A to 28	't' tests: comparing ERT RQ and comprehension progress between experimental groups and control.
29 to 32	't' tests comparing ERT RQ and comprehension progress between reflective and impulsive children.
33	't' test comparing ERT RQ for library/non -library members.

34 and 35	One-way ANOVA and 't' test for DART attitude to reading categories.
36	Correlation between DART quotient and the ERT RQ for Times 1, 2 and 3.
37 to 41	One-way ANOVA and 't' tests of ERT RQ for DART attitude to school (Tables 37 and 38), DART estimate of own ability (Tables 39 and 40) and for children with an initial negative or moderate attitude to reading (Table 41).
42	Progress times normal gains in ERT RQ over duration of study for all groups.
43 to 49	't' tests and chi-square tests for ERT RQ subgroups (equal to or <90 and >90 measured at Time 1): subsequent progress (a) in ERT RQ (Table 43); (b) MFFT (Table 44); (c) in DART attitude to reading (Table 45); (d) in DART attitude to school (Tables 46 to 48) and (e) in DART estimate of own ability (Table 49).
50 to 52	't' tests comparing ERT RQ and DART attitude to reading for boys and girls.
55	't' test data: ERT RQ progress comparing library members with non-library members.
56 to 58	Comparisons between DART validation data and DART data obtained from the present study.
59 to 63	Qualitative data.