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Computer Science at Kent

Promotion and Dissemination of Good Practice: Discipline Networks

Sally Fincher

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Introduction

This paper discovers the models adopted by the initial 24 Discipline Networks (DNs) and places them within a preliminary taxonomy.

Discipline Networks were created by a UK Department for Employment initiative with Higher Education and I present a very brief introduction to the background of this in the first two sections([1](#)): The Discipline Networks Initiative: Background and the Discipline Networks Initiative: Aims and Objectives. In the middle section, The Discipline Networks Initiative: Six Models, I examine common features of the networks along two defined scales and show how these fall into one of six identified models. Finally, I present some conclusions.

Most of the material presented here was gathered in a series of interviews conducted between March and May 1995 with 22 of the 24 named network organisers([2](#)) , and some additional interviews with University administrators and members of the then Department for Employment. No individual attribution has been made to any of the interview material: where I have drawn on other material this is referenced in the usual way. I have tried throughout to preserve the voices of the individual speakers and not to pervert their points of view by paraphrase. Where ellipses are presented in material, these replace "Ums", "Ahs" and other repetitive speech habits. Where it has been necessary to introduce additional material for the sake of anonymity or for clarity, this has been placed within square brackets. All the ideas presented here are mine and are not necessarily shared by those interviewed.

Since this research was conducted, the UK Department for Employment has become the Department for Education and Employment. To save confusion, and as the initiative was conceived under the aegis of the old body, I have used the term Department for Employment throughout.

The Discipline Networks Initiative: Background

The Discipline Networks (DNs) initiative was launched by the Department of Employment in 1994. It followed historically from other initiatives launched by the Department and most significantly from Enterprise in Higher Education (EHE). EHE contracts represented a long-term relationship with specific HE institutions (typical funding was of a million pounds over five years) and were concerned with the whole spectrum of an institution's activities, with the concrete aim of ensuring graduates entered the workplace with suitable transferable and work-related skills.

The Discipline Networks Initiative: Aims and Objectives

The Department for Employment's aim for the DN initiative was to Acarry the debate and experience around the Department's agenda to a wider body of specialists⁽³⁾ and it quite explicitly built on previous initiatives:

[the DN initiative] complemented EHE, in getting not just .. I mean if someone in say computer science ... had some new innovation in teaching and learning it would probably only have gone across the university but this way it can go across the discipline, that's what it's about really. Horizontal rather than vertical.

Unlike EHE, however, the DN initiative was conceived on a quite different scale. Each project was funded (in the first instance, as it transpired) for a single year and for a total sum of £15,000. Prospective DNs were required to submit a proposal for funds against certain criteria, but specifying individually and uniquely (within the presumably singular requirements of their own discipline) by what methods these criteria were to be achieved. These proposals, if successful was then turned into contracts between the DNs and the Department for Employment, specifying explicit timetabled outcomes.

Contracts and contractual obligations are not unique to this initiative, though, and the single most distinctive feature of DNs is their discipline basis. This was perceived as an improvement over EHE, whose centralised nature meant that academics could (and, in some cases, did) consider themselves as being led by the managers and administrators of their institution, and not their peers. This

point was explicitly made by a quarter of the interviewees, and so significant was this perception that the generation of the idea of DNs was claimed by (or credited to) four different, but named, individuals(4) .

Recently, however, we have recognised that we were neglecting the place of the Discipline in the culture of higher education. Many staff think of themselves first as Physicists, Archaeologists or Engineers first, and employees of a particular institution second (or third?). Their sense of professional identity, and the messages they listen to about what matters in their work, comes more from their peers and seniors in the discipline than from Vice Chancellors and Deans(5).

I've been trying to tell people at the Department for Employment for a long time that the discipline, the EHE idea was bound not to work as well as it would work if only they had some discipline network

years ago, when EHE was just beginning - no Universities selected yet - I argued that at least some of the money be used for disciplines and that a warp-and-woof approach would be best. I suggested that professional associations be approached, as their views would carry weight.

Within this framework of historical example, chronological, contractual and financial constraints, 24 Discipline Networks are currently operating. The rest of this paper will attempt to distinguish and categorise their activity, based on an analysis of qualitative material(6).

The impetus to discover criteria for qualitative analysis of this sort came from many sources. Whatever criteria the Department for Employment used to select the twenty four networks, it is axiomatic that they were consistently applied across all the bids. From this it follows that all DNs could be expected to be more similar than dissimilar, but this was clearly not so: twenty four networks had been set up and were operating in isolation; DNs organisers felt that they were all engaged in congruent activity; the quantitative outputs (newsletters, surveys etc.) had a great similarity, which belied the fundamental differences between the operations of the individual networks. Additionally, there seemed to be a common, tacit, assumption (from the Department for Employment down) that "everyone knows what a network is". In the DNs context, the common aim - to promote and disseminate good practice in the teaching and learning of a discipline - was prescribed, and specific means by which this end was to be achieved were contractually agreed in advance. However, in practice, what a network is or does - the inherent mind-model all are expected to share and utilise - does not seem to have had a common currency or consensus. From this research, it has been possible to identify two scales on which this kind of activity can be graded (the

noun/verb distinction and the concept of constituency) and six models of behaviour which DNs typically follow and which can be placed on those scales.

The "Network" Continuum

Most DNs can be placed along a line drawn between their definition of network as a verb or as a noun. At the extreme verb end are those DNs which devote almost all of their resources to individuals, enabling them to do things. Here, a network exists only when it is being practised. At the extreme noun end it is more likely that resources will be targeted at the creating of things, events or materials. Here a network is created as the by-product of its use. The models of network activity can be placed along this line. I have called the models: Opportunist, Charismatic, Accretor, Builder, Radial and Problem-solver. Table one shows the proportions of DNs in each category. For the purposes of this paper, each DN was arbitrarily assigned a single-letter tag, by which means a single example DN can be followed through the tables, if desired.

Table 1: Discipline Networks shown by model and each model shown as a percentage of the whole. This is a crude division of networks by their most prominent characteristic only. Subtleties such as a Opportunist network run by a Charismatic on the basis of a previous enterprise (Accretor model) are not shown. Such a network would simply appear in the Opportunist row.

Opportunists	I, U, W	12.50%
Charismatics	J	4.00%
Radials	D, E	8.50%
Problem-Solvers	G, P	8.50%
Accretors	H, K, Q, R	16.50%
Builders	A, B, C, F, L, M, N, O, S, T, V, X	50.00%

Network as a verb

When networking is interpreted as a verb I use it to indicate the possibly engineered, possibly serendipitous exchanges which occur largely as the result of other opportunities amongst the necessary jog and bustle of common interests and activities. At this end of the spectrum there are two clusters of

DNs which seem to follow one of two models, the Opportunists and the Charismatics.

- Model one: Opportunists

The Opportunist DNs are characterised by their focus on creating opportunities for individuals to undertake work which is primarily for their own individual development. These networks may operate on a small or large scale, and may appear, in terms of their outputs to be very similar to all others, but can be characterised and distinguished by their view that networks engage people in activities for their own benefit in the teaching and learning arena.

It's all really about sharing. And it's the practitioners ... It's not the theoretical people. It's not the educationalists - although we have educationalists on it - and quite a few of the executive are educationalists - but it's the people who are actually at the coalface doing it. So they therefore are the ones with the ideas. They want to experiment, they want to try ideas out.

.. the theme is during the year people - small groups of really active interested people - get together, talk about very focused examples of teaching and ways of improving learning

[we created] this opportunity because lecturers had been monkeys doing their thing behind a closed door and not telling others and you're conscious that wheels were being invented and, and reinvented on a regular basis - and so that was sad really ... we felt this could be an opportunity to get together with these others and ... run something called a swap shop, which was just ... to get lecturers to tell all about their teaching and learning.

If there is a weakness in this model, it is that the penetration of ideas might be quite small as it relies on the enthusiasm of the participants to create more opportunities. There is a risk that these opportunities could or would be grasped by the same few each time.

- Model two: Charismatics

The Charismatic networks display a quite different nature. Here the activity of the DNs is formed around the personal vision, energy and contacts of the organiser. Of course, not just anyone can become a Charismatic. These leaders are characterised not only by their subject expertise (which gains them academic credibility and the respect of their

peers) and length of time within the subject (which gives them a large number of contacts) but also by having remarkable enthusiasm for the process and practice of teaching and learning.

Because the organiser is essential to the function of any DN, when a Charismatic is in that position, those networks appear to operate in a very productive manner and, in terms of output, out-perform almost all other kinds. However, their strength is also their fatal flaw. The model can be emulated but is not transferable, either to another subject area or possibly within the subject. Without an engine, the car might grind to a halt - of course it might continue under its own momentum - but would some other method of propulsion, perhaps a lot of people pushing from behind.

Interestingly, it is quite clear that effort was expended to try and preclude this very successful type of network originating:

the whole idea of a Steering Board on the discipline network is that it can't just be one person's idea that is pushed to everybody. The Steering Group or Board will almost vet the ideas and then only when it's been through that process does it go out to the rest of the discipline, who of course can accept or reject it as they want. The Steering Board had to be made up of people who are in that discipline because obviously they (the people who are going to become involved) have to have the respect of other practisers of the network.

For whatever reason the "safeguard" of the Steering Group was instituted, it is almost automatically circumvented by the Charismatic model as such a leader can create a steering group out of the nexus out of their personal and professional contacts.

Network as a noun

At the noun end of the spectrum, DNs see their product as a semi-stable entity of relationships and exchanges amongst fixed end points. A network here is a thing with an identity separate from any given member or selection of members. Such a model needs only connections (between organisers and members, or people and events for example) and protocols (perhaps outlining the duties of a member, the responsibilities of being on a committee etc.) to make it work.

I took the most obvious clue to whether a DN considers its activity to be noun-based from claims that individuals could be members, whether there was something to which people could belong. You cannot, in any sensible way,

belong to an activity so if you belong to a network there must be something stable and coherent to which you belong. As with the extreme verb end, here there are also two clear models which DNs seem to adopt, the Accretors and the Builders.

- Model three: Accretors

Accretors, perhaps, have had the easiest task in fulfilling the obligations of their contracts. They are characterised by having the results of one or more previous initiative to add to, accreting experience and membership from that.

Most commonly that previous activity was both funded by the EHE initiative and run by the (now) DN organiser:

And there was a long gap - of about 9 months between the old network and the new network. And that was, that worried me a bit because I thought we might have lost everything ... but in fact when we set things out, people were delighted. They came back in.

We're heavily into the innovative uses of technology in teaching and I saw this as an opportunity of broadening our remit to take in other innovative uses, well innovative approaches to teaching and learning, but obviously this one focusing on personal qualities ... so we have an established network of people involved in, or lecturers involved in, innovative approaches to teaching and this is just a logical extension of that activity.

But sometimes the DNs has simply taken over a previous effort, with a change of personnel in the leading role.

[there was] a sort of a spiritual ball, a spiritual base yes. Our Network in fact recruited heavily on [the previous] Network to kick-start ourselves. When we actually invited people to become part of our Network we started with the invitations in an arena where we knew that people would say "Yes" so we, simply, I suppose, bolted [the previous] Network onto our Network to start with.

Accretor-type networks seem to be achieving a great deal in a very short time, more than many other models. However (like the Charismatic-type with which they share some common features) they have foundations of previous enterprises on which to build; this model can be emulated, but again, it cannot be automatically transferred as its existence depends on

circumstance. Whether the currently-operating DNs could be forming the basis for a later stage of accretor-type networks is an interesting speculation. It does not seem likely that the simple existence of a network is a guarantee that others will want to use it. It is, perhaps, significant, that this research uncovered only successful examples of the accretor-type; if there were unsuccessful previous attempts they would have had to have been deliberately discarded or to have been unsuccessful to the extent that no one was aware of their existence.

- Model four: Builders

Builders appear to have the same vision as the Accretors, but are starting from "square one". Here there has been no previous activity (or none visible to the DN organisers) to use as a foundation. However, the impulse to provide a structure of information and materials, to define a separately identifiable area of activity which means "joining the network" can be used in the same noun-based sense as with the Accretor-type networks.

And we hope by that workshop, and the results of that workshop, to start an ongoing commentary in our newsletter so that it will be disseminated to the entire country as far as [our discipline] is concerned And then we will start an ongoing editorial, in essence to exchange news, views, information. Because you know, we didn't realise at first that there are some areas within our subject area ... they never get out of their rooms, let alone speak to other Colleges so it's most important

In the meantime we're doing some research into employer's expectations and their perceptions of graduates to see ... how they perceive the product coming out of Universities and ... [how] ... their expectations and perceptions of levels of knowledge and skills and course content to see if we're actually delivering, you know, the right kind of person for the jobs that are currently available. That sort of research. And that's in progress at the moment.

The builder-model was by far the most commonly adopted amongst the initial DNs.

Two Subsidiary Models

No single definition can neatly encompass all the variety of thinking which has gone into these projects, though. Although the noun/verb distinction serves well as a first cut, it would be simplistic to expect the ideas and efforts of twenty four academically-inspired initiatives to toe a straight line.

Consequently, I have identified a subsidiary group of models which, whether they pursue their activities in a verb-manner or a noun-manner, perceive the model of their activity in a singularly different way. This group defines network as a function.

This definition of DNs activity is that they fulfill a function in which they themselves do not figure as end-parties. That is to say, they are not working for their own benefit, but as a catalyst or broker for others. For example, a network of this type might target its membership at educators but be functionally seeking a change in students, using its members as catalysts for this change. Again, two models emerge: the Radials and the Problem-Solvers.

- Model five: Radials

The Radials tend to be typified by being led by parties outside the Higher Education system, or at least outside the mainstream activity of teaching. More than any other model, this kind of DN views a "network" as having a centre to which everything refers

What I saw was that ... there is a network there now because we accredit all these courses ... but it's radial ... you know it's like spokes coming out ... say if we're the centre hub it's spokes coming out. There is very little cross discussion between those people who run these programmes in [this discipline] between the individual Universities. For me one of the benefits was the opportunity to actually get that group of people together and to meet and discuss and debate.

This model of a DN can only work where the originating body feels that it has something to offer which all the other parties lack. Of course, it also helps if all the other parties feel that they need that which is offered. This might be with the DN operating as a broker or filter, perhaps between employers and HE. Another way in which this type of DN can operate is if the initiator has some power to enforce their agenda (for example the professional accreditation of courses).

- Model six: Problem-solvers

The Problem-solvers have used the DNs initiative to focus on a single aspect of their discipline, perhaps much more in the "traditional" EHE mould. These tend to see themselves as student-centred rather than staff-centred and with a more limited scope and lifetime. In a few instances the DN has signalled this very strongly by incorporating the problem to be addressed within its name: a DN "for empowerment" or "self-development". Interestingly, during the course of this research, one DN

moved from the noun-end of the network continuum to the adoption of this model by changing its focus and activities only slightly, but most significantly by re-naming itself a network which espoused "Skills for Life", signalling both to themselves and to the world that the initiators' model of their network had changed.

Table 2: This shows the networks by model divided along the verb-noun continuum (where VV=maximum verb-orientation and NN=maximum noun orientation).

	VV	V	-	N	NN
Builder			A,S	B,C	F, L, M, N, O, T, V, X
Accretor		K,Q	H,R		
Radial		E	D		
Charismatic			J		
Opportunist	I		U,W		
Problem-solver	G	P			

Further considerations

The verb/noun distinction is not necessarily a polarity; these six models are not necessarily exclusive. Nevertheless this does seem to be a useful and transferable definition which can characterise the qualities which underlie activities superficially dissimilar in terms of method of operation. Equally it can serve to distinguish two networks whose quantitatively measurable outputs (newsletters, conferences, surveys etc.) may be almost identical.

Neither is this distinction applicable only to the DNs initiative. An interesting example can be seen in the activity of the CTI Centre for Computing(7). Each year they run a large and successful conference. In an attempt to maintain the interest and contact between delegates over the rest of the year, after the 1994 conference they instituted a number of e-mail Special Interest Groups to support the strong involvement and enthusiasm developed over the course of the event. In this, they were trying to turn a physically located, service-oriented, noun-based activity into an on-going verb-based "network".

These "e-SIG" groups have, to date, not proved to be at all popular. Superficially, this would seem to be disappointing and inexplicable. However, if this noun/verb distinction is applied, an explanation for their failure can be discerned: participants joined them with expectations set by another model of

activity; the old expectations (that they were at an isolated event to do something specific) were not transferable and the new expectations (that they were to take part in an on-going activity which had to fit in with their normal professional lives) were not made explicit.

The Dissemination Definition

How a DN has approached the question of Dissemination (and espoused the model which underlies that approach) can be seen, to some extent, in relation to their model of networking. Those DNs which are at the verb-end of the continuum would be more likely to see discussion and participation as dissemination events; those at the noun-end, the creation of a resource as their primary method of dissemination. However, there are two other fundamental considerations, two other ways in which to view dissemination, which affect how a DN operates.

- **Function**

The first is what purpose, what function, the DN considers itself to be serving within the context of its own discipline. There are two frequently-occurring models, the ginger-group(8) and the comprehensive. A ginger group is one which sees its function as "gingering-up" the teaching practice of a discipline both within HE and with respect to industrial partners in the process. The consequence of this is that a ginger group will see dissemination as a more ephemeral process; it will be sufficient for its purpose to engender awareness and raise issues. A comprehensive view of its purpose will cause a DN to place the activities of research about the state of teaching within the discipline, the collection of information, the production of publications and other similarly concrete objectives as fulfilling its dissemination requirement.

- **Constituency**

The other dissemination consideration is how a DN defines its constituency. The DNs initiative would seem to have been created with the assumption that subject practitioners are expected to have (at least) a common interest to communicate and that DNs simply facilitate that. Underlying this is the assumption that the commonality of subject knowledge and subject practice has already formed a "network" of interest. This is superficially obvious but underlyingly odd assumption, that a network is an extrapolation from a community of interest. A midwife travelling about and delivering individual women in their homes does not create a network of pregnant women. Likewise, opening a channel for discussion does not make a network of a discipline(9).

Nevertheless, the idea that "networking" is a common academic activity, and one in which academics are skilled, is not unusual:

I don't see networks as being anything terribly original, I mean we have actually been doing this for as long as anybody can remember at a research level, we don't call it networks ... and the only thing that I can see that stops you from doing it in teaching is some kind of lack of focus and some kind of feeling of isolation which people actually need to get over. The principle of meeting to talk about teaching is much the same as the principle of talking - meeting to talk - about research.

This is an understandable, common-sense and seductive model. However in this context, it is dangerous because it neither implies nor involves commitment to the dissemination process. Initiation is not expected, there is no expectation of any continuing contact and no requirement to follow up: if the creation of a network is the aim, this kind of interaction (for the purposes of dissemination) must be superseded by a more organised and defined process. Alongside assumptions of this sort, of the existence and size of a constituency, are assumptions on the make up of that consistency. It is a human peculiarity to see oneself as interacting with ones peers and so the DNs, too, tend to be constituted to serve that portion of the community which the initiators perceive to be closest to them. This, of course, includes many of those practitioners that the activity was designed to serve. However, it automatically excludes others. An example of this at the most basic level is when asked about the penetration of a specific DN, a Head of Department replied "Well. It's not for the Professors".

If a network defines its constituency (or its constituency is perceived) rigidly within a section of practitioners, or even the discipline itself when defined as an academic pursuit, then even though most DNs strive for increased contact outside of the HE environment it may be very difficult to achieve above the level of a small number of self-selected "interested employers" and professional bodies.

On the other hand, a DN may not be based on a common set of assumptions. That is to say, a DN without a precedent (Accretor or Problem Solver type) and/or without an individual leader (Charismatic type) has no assumed (or, in extreme cases, even expected) constituency. In these cases its activity becomes, in addition to its specified aims, innovative and therefore, in addition, faces all the specific and peculiar set of problems which any innovative activity entails([10](#)).

Consequently, how a DN sees its activity can be seen to rely on underlying

assumptions about its dissemination function and dissemination constituency. Figure one and table three, below, displays the DNs with regard to this constituency and dissemination distinction. Figure one is a scatter graph plotting DNs against both the verb/noun and the constituency axes.

Table 3: The constituency distinction. This shows the networks by model divided with regard to their internal definitions of their constituency and dissemination remit.

Key :

- GG "Ginger Group" extreme. Those networks which primarily regard themselves as being issue-based.
- G Those networks which display a mixture of issue-based and other activity (eg surveys)
- n/a This distinction is not applicable to the problem-solver model
- C Those networks which limit their constituency in some way (most usually geographically)
- CC Those networks which consider themselves to be comprehensive for their entire discipline

	GG	G	-	C	CC
Builder	C	S		L, N, V	A, B, F, M, O, T, X
Accretor				K, Q	H, R
Radial				D, E	
Charismatic					J
Opportunist	I	U		W	
Problem-solver			G, P		

It is interesting to note that there is a rough correlation between noun-based activity (as shown in table two) and a comprehensive constituency (as shown in table three) across all the DNs models. This correlation is much stronger for the Builder model than any other, with 10 (out of 12) appearing at the noun-end and at the comprehensive-end of the respective graphs, and 5 of these networks (F, M, O, T and X) appearing in the most extreme category in each case. This would seem to indicate that if a DN adopts the Builder model (from necessity or from choice) then subsequent choices for its mode of

operation are constrained.

Also interesting is the grouping of all the other networks away from the quadrant most heavily occupied by the Builder-type model. Although difficult to extrapolate from this data, built as it is exclusively on a single initiative, this may be a product of development over time. That is to say that when an activity is new, and forming an identity, it tends to a noun-based, comprehensive-constituency model; when it becomes established it moves away from this.

Conclusions

Although this paper describes and defines models in a specified context, it would seem to be an example of a trend, and academics are increasingly engaging in this kind of activity in a teaching and learning arena([11](#)). Discipline Networks themselves are just one example of this. As a specific example of a general case, then, it is hoped that the scales and models developed here might provide a framework for other activities; a qualitative and transferable way of thinking about the promotion and dissemination of teaching and learning for practising academics which does not depend on measuring the amount of material an initiative produces as a measure of its success.

Sally Fincher, January 1996

Endnotes

1. For a fuller consideration of the conditions which led up to the EHE initiative, and, to a lesser extent, the DNs initiative itself, see *Achieving Quality Learning in Higher Education*, Peggy Nightingale and Mike O'Neil, Kogan Page, 1994.
2. My grateful thanks to: Nick Bailey, Mike Bennett, Mike Brown and Doug Goodsir, Ellie Chambers, Ashley Clarke and Mike Carney, Helen Corbett, Sue Doubell, Peter Franklin, John Garratt, Arnold Goldman, Roy Gregory, Simon Heath, Janet Henney, Dennis Hobson, Jill House, Ian Hughes, Mike Kitson, William Locke, Hugh Matthews, Pat McChesney, Peter McCrorie, Gaye Ortiz, Alan Pike, Richard Wilson, Gill Young and Di Marks-Maren for their time, co-operation, patience and hospitality.
3. David Stuart, Introductory Remarks at the first Discipline Networks Workshop, Sheffield, 12 July 1995.
4. There is also an interesting contextual use of the term (although not in its

DNs incarnation) in *Achieving Quality Learning in Higher Education*
Peggy Nightingale and Mike O'Neil, Kogan Page, 1994, pp 39-40

5. David Stuart, op cit
6. The Evaluation Reports of the DNs initiative compare networks on qualitative ground. For a contrasting approach, see the Evaluation Reports produced by Stephen McNair, the Evaluation Consultant for the Department of Employment for the DNs initiative.
7. The CTI (Computers in Teaching) initiative is funded by the Higher Education Funding Council for England, the Scottish Higher Education Funding Council, the Higher Education Funding Council for Wales and the Department of Education for Northern Ireland. 23 specialist centres each service the needs of a specific subject area.
[Note added December 2000. The CTI centres came to the end of their funding period and were replaced by 24 [LTSN](#) (Learning and Teaching Support Network) centres. The LTSN centre for Information and Computer Sciences incorporates the old Computing CTI centre]
8. I am indebted to Nick Bailey for coining this phrase in relation to Discipline Networks.
9. Although it is interesting to note that Phil Agre has used the term "community" in precisely this sense in the recent edition of *The Network Observer* Volume 2, Number 7 "Let's define a 'community' to be a set of people who occupy analogous locations in social or institutional structures. This is not the ordinary use of the term 'community', and it will take a moment to explicate it fully. First some examples. The people who are in charge of the parking lots on American university campuses are a community. The Republicans who ran for elected offices in the 1994 elections were also a community ..." *The Network Observer* can be found [here](#).
10. For an example of the problems of an innovative approach to learning, see *Innovating at the OU: Resource-Based Collaborative Learning Online*, Gary Alexander and Robin Mason, Centre for Information and Technology Report, No. 195, March 1994.
11. See the forthcoming publication of the American Association for Higher Education, *Making Teaching Community Property*.

URL for this paper: <http://www.cs.ukc.ac.uk/people/staff/saf/saf/seda-papers/sally.html>
