A comparative analysis of error correction procedures for skill acquisition in autistic students

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Abstract

Purpose – *The purpose of this study is to compare the effectiveness of two error correction methods – Model Prompt Switch Repeat (MPSR) and Error Statement, Modelling and Active student Response (ESMASR) – for teaching new skills to autistic students. This study evaluates which method results in faster and more effective skill mastery, measured by the number of trials needed to reach the mastery criterion, and assesses long-term retention of learned skills.*

Design/methodology/approach – *Using a multiple-treatment reversal design within an Applied Behaviour Analysis framework, this study involved four participants aged 13–15 years. The participants were taught using both MPSR and ESMASR methods, with data collected on how quickly they mastered new skills. Maintenance data were gathered at one and four weeks after teaching to assess skills retention.*

Findings – *This study found that the MPSR method led to faster and more sustained skill acquisition than ESMASR for most participants. MPSR demonstrated better long-term retention in several cases. These results emphasise the effectiveness of structured error correction procedures in improving learning outcomes for autistic students.*

Research limitations/implications – *Because of the small sample size and focus on a specific educational setting, the findings of this study may not apply broadly. Future research should test these methods across a wider variety of learners and settings to ensure broader applicability and validation of the results.*

Practical implications – *This study's findings offer practical strategies for educators working with autistic students, showing that structured error correction procedures like MPSR can be integrated into daily teaching to improve skill acquisition and retention. These strategies can also inform educator training and instructional planning.*

Social implications – *This study contributes to a more inclusive education system by offering evidence-based methods that help autistic students succeed. By identifying effective teaching techniques, this research supports efforts to ensure equal educational opportunities for neurodivergent learners.*

Originality/value – *This study fills a gap in research by comparing two specific error correction methods in an ABA setting, providing fresh insights into which strategies most effectively promote skill acquisition and long-term learning in autistic students. This study also offers practical guidance for educators seeking evidence-based methods to improve student outcomes.*

Keywords *Autism, Skill acquisition, Error correction, Special education, Learning disabilities*

Paper type *Research paper*

Introduction

Social communication differences, narrowed interests and repetitive behaviours are often seen in autistic individuals. Though learning disability is associated with reduced intellectual ability and possible difficulties with everyday living skills, the presence of additional diagnoses does increase the complexity of presentation (American Psychiatric Association,

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2013). Autistic individuals with learning disabilities may present with differences in sensory processing, attention and behaviour regulation. These factors can function as barriers to learning and impact the individual's ability to succeed in the classroom (McDougal *et al.*, 2020). One such difficulty includes a reduced ability to process errors and subsequently self-correct behaviour (Sokhadze *et al.*, 2010). As a result, autistic individuals with learning disabilities do not learn from errors in the same, predictable way that neurotypical students might do and, therefore, may need additional support to make errors processable.

Applied Behaviour Analysis (ABA) is grounded in the principles of behaviour science and is used to support autistic learners with learning disabilities. ABA targets socially relevant behaviour and is individualised to suit the learner's needs (Cooper *et al.*, 2020). It uses reinforcement and systematic teaching procedures to promote learning (Yu *et al.*, 2020). ABA techniques commonly used to support autistic individuals with learning disabilities are Discrete Trial Teaching (DTT) and error correction. Error correction is the collective term for providing corrective feedback following incorrect responses. Error correction helps learners acquire skills faster and with less frustration by putting them in contact with reinforcement at a higher rate (Leaf *et al.*, 2014). During DTT, skills are broken down into manageable steps and taught with high repetition rates (Townley-Cochran *et al.*, 2017). DTT is a valuable tool for teaching because of its ease of application and diversity. It can be applied across multiple domains and successfully teaches communication, social behaviour, play skills and academics (Leaf *et al.*, 2019).

The Model Prompt Switch Repeat (MPSR) procedure is a historical example of error correction, commonly used when teaching the Picture Exchange Communication System (Frost and Bondy, 2002). The MPSR procedure has been modified to teach other skills, such as DTT, and includes an error statement (saying "no"), modelling (modelling the correct answer), active student response (student repeating correct answer), switch (presenting targets that the individual has already mastered) and repeat (independent opportunity for the student to demonstrate the correct answer). However, current research has emphasised that more intrusive error correction procedures like the MPSR may not lead to better outcomes (McGhan and Lerman, 2013).

This study investigated nineteen articles to identify the error correction components with the most support and promising findings. Of those 19 articles, 13 were identified for further review (Rodgers and Iwata, 1991; Drevno *et al.*, 1994; Smith *et al.*, 2006; Turan *et al.*, 2011; Leaf *et al.*, 2013; McGhan and Lerman, 2013; Leaf *et al.*, 2014; Kodak *et al.*, 2016; Plaisance *et al.*, 2016; Townley-Cochran *et al.*, 2017; Cariveau *et al.*, 2018; Leaf *et al.*, 2020; Yuan and Zhu, 2020). The six excluded articles studied populations that differed from our sample population or examined dependent variables that did not align with our current research question. The 13 articles were grouped in the second review by their examined error correction components and findings. It was determined that the error correction procedure components with the most substantial evidence contained active student response, modelling and an error statement.

Previous research demonstrated that including active student response was more effective than modelling alone (Barbetta *et al.*, 1993; Drevno *et al.*, 1994). Barbetta *et al.* (1993) found that the active student response condition increased correct responses, better maintenance and improved generalisation when teaching sight words to six children with developmental disabilities. Drevno *et al.* (1994) replicated these findings by teaching science terms to five elementary students. The authors proposed that active student response is not intended to be a complete error correction method but instead should be paired with other empirically established components of error correction (Drevno *et al.*, 1994).

In the review article by Cariveau *et al.* (2018), modelling and active student response were the most efficient procedures for eight and five participants, respectively, across three studies. Kodak *et al.* (2016) accounted for four of those modelling participants. Their results showed that modelling was the most efficient procedure for four of their five participants. However, the authors noted that those four participants tended to echo the instructor's demonstration during the modelling condition. They suggested that this unprompted echoing behaviour, like the active student response, may provide insight into potential behavioural mechanisms responsible for acquisition (Kodak *et al.*, 2016).

The use of an error statement was investigated both independently and alongside other components. Pairing an error statement with the withholding of reinforcement creates an aversive contingency with a mildly aversive function (Smith *et al.*, 2006). However, using an error statement alone has received inconsistent results (Rodgers and Iwata, 1991; Smith *et al.*, 2006; McGhan and Lerman, 2013). Townley-Cochran *et al.* (2017) found that modelling paired with an error statement was as effective as modelling alone. However, the authors noted that the modelling with error statement condition led to a narrower range of trials to mastery and total teaching time (Townley-Cochran *et al.*, 2017).

The present study compares the effects of an established error correction procedure, the MPSR procedure (EC1), with an error correction procedure containing an Error Statement, Modelling and Active student Response (EC2).

Method

Participants and setting

Participants were four autistic children with significant learning disabilities who were enrolled in a Special Education school in the UK that used the ABA framework in its curriculum and teaching delivery. They were also early learners as characterised by the literature (Sundberg and Partington, 1998; Greenspan and Wieder, 1998), that is, at the beginning stages of their educational journey and learning foundational skills such as basic communication, social interactions and early academic concepts, requiring a high level of support and instruction in basic skills. Participants were between 13 and 15 years old and received supervision from one of the authors. Participants were assessed to have language skills from between 0 and 30 months (between Levels 1 and 2) on the Verbal Behaviour Milestone Assessment and Placement Program (Sundberg, 2008).

All sessions took place in the participants' typical classroom at the school they attended. The class consisted of eight children who received one-to-one adult support from an ABA Tutor, accessing individualised teaching and short group instruction periods. The classroom contained tables, chairs, data collection materials and educational materials (e.g. flashcards, displays, toys, books and token board systems).

Eligibility criteria

Inclusion criteria were that the learners share a similar learning profile with similar learning disabilities, can participate in brief desk-based teaching sessions, have established scanning skills and could respond to procedures that involved following directions to identify or point out specific items. Exclusion criteria were any behaviours of concern that would be a barrier to implementing the study procedures and the absence of the skills mentioned above.

Dependent variables

We measured how often students gave the correct or incorrect responses during their teaching sessions. A *correct response* was defined as touching or handing over the flashcard corresponding to the item the participant was asked to identify within three seconds of the verbal instruction. An *incorrect response* was defined as touching or handing over a flashcard that did not correspond to the item the participant was asked to identify, touching more than one flashcard or not responding within 3 s of the instruction.

Trial-by-trial data were collected on correct and incorrect responses by the researcher running the session using paper and pen across all sessions. A plus was recorded for a correct response, and a minus was recorded for an incorrect response.

Experimental design

This study used a multiple-treatment reversal design. Following baseline, participants were randomly allocated to start with Condition 1 (ABCA) or Condition 2 (ACBA) using a random number generator (https://calculatorsoup.com). The conditions were counterbalanced so that each condition lasted six weeks for all participants. Two participants experienced Condition 1, followed by Condition 2, while the other two experienced Condition 2, followed by Condition 1.

Materials

Laminated flashcards depicting everyday three-dimensional household objects were used as teaching materials to introduce target items, maintaining consistency with the students' usual learning tools. These household items were chosen for their practicality and relevance, as they would be integrated into future lessons on personal hygiene and cooking. The 20 target items were selected for their functionality, and the participants had no prior DTT exposure to them. The items included: towel, toaster, soap, sieve, bag, whisk, mirror, dental floss, rolling pin, sunscreen, deodorant, razor, shampoo, brush, can opener, toothpaste, cupboard, comb, spoon, shaving cream, kettle, nail clippers, laundry basket, spatula, blender, saucepan, microwave, sink, fridge, tissues, scales, bowl and tap. Each item had three different exemplars. Custom-designed data sheets were developed for baseline and DTT instruction, focusing exclusively on these study targets, separate from the participants' other curriculum goals. Daily Excel graphs tracked mastery criteria, documenting progress or any lack thereof. In addition, datasheets for Interobserver Agreement (IOA) and treatment fidelity were created to ensure accurate and reliable data collection.

Procedure

Initial baseline data were collected across all the items. During baseline, each participant was tested three times per item without receiving feedback on their responses. Items that participants identified incorrectly in at least two of three trials were selected as targets for the intervention phase. This ensured that only those items for which participants demonstrated no prior knowledge were included for teaching. The baseline phase revealed that participants were familiar with some items, while the items they did not recognise during this phase became the specific targets for subsequent instruction.

A one-to-one DTT session was conducted daily, five days per week, for each participant, with ten trials delivered per session. One new target was taught at a time until meeting the mastery criterion, which was set at 90% correct trials across two consecutive sessions and was interspersed with the participants' previously mastered targets (targets mastered outside of the study), with 50% of trials consisting of mastered targets.

When the students entered the room, they were greeted and directed to their designated learning area, where the teaching materials were already set up. The session began with the presentation of target items, in a group of three to six options, based on how many the participant was used to choosing from.

Correct responses to target items were immediately reinforced during the session with praise and token delivery. Tokens were continuously awarded for mastering new targets, while students received tokens after every one or two correct responses for skills they had already learned (on average, every two correct answers). Each student had a token board that displayed their earned tokens, typically ranging from five to ten tokens. Once they filled their token board, they could trade the tokens for a reward of their choice. These rewards could include activities like spending time on the playground, using the swing, singing with an adult, reading their favourite books or playing with balls, balloons or sensory toys.

Error correction followed any incorrect responses and could be delivered up to three consecutive times per session. The targets were considered met if participants achieved 90% accuracy across two consecutive sessions or 90% and above on the very first session it was introduced.

Two error correction procedures were used in the study to address incorrect responses. EC1 (Model Prompt Switch Repeat) involved modelling the correct response and offering the student a chance to correct their answer after presenting another task. EC2 (Error Statement, Modelling and Active student Response) emphasised immediate modelling followed by student repetition of the correct response before retrying. Reinforcement in the form of social praise was provided both for prompted responses (if the student successfully followed the prompt) and for correct independent responses. If error correction was repeated multiple times before a correct response, then each repetition was counted as a separate trial in the data, allowing us to measure how many corrections were needed before mastery was achieved. For a detailed description of both procedures, refer to Table 1.

While both procedures aimed to correct errors and reinforce learning, EC1 involved a more complex, multi-step process, including distractor trials. In contrast, the second procedure was more straightforward, focusing on immediate prompting and independent trials.

The targets taught during the study were checked for maintenance one and four weeks after mastery. No feedback was given for correct or incorrect responses during the maintenance trials.

Inter-observer agreement and procedural fidelity

The professionals who collected IOA and fidelity data were highly qualified (Board Certified Behaviour Analysts) and clinically experienced in ABA for over five years. Trial-by-Trial IOA data was collected for 16% of the total sessions, where an observer and the experimenter running the session collected data on the dependent variable during instructional trials. A plus was scored for each trial where the data were in agreement between the two experimenters, and a minus was scored for each trial where the data were not in agreement. Exact IOA was calculated by comparing the responses each observer recorded for each trial. The number of trials where both observers recorded the same response was divided by the total number of trials for the session and then converted to a percentage. The mean IOA was 99% (97%–100%) across the sessions.

Procedural fidelity was collected for 11% of intervention sessions overall, where the observer collected data on the experimenter's adherence to the instructional procedures across ten individual components. The components were:

Table 1 Overview of error correction procedures

Procedure	*Description*
EC1 (Model Prompt Switch Repeat)	In this procedure, when a student makes an error, the teacher says "no" or "try again," models the correct answer, asks the student to repeat it, presents a different task to mix up the routine, then gives the student another opportunity to answer the original question correctly
EC2 (Error Statement Modelling and Active student Response)	In this procedure, when a student makes an error, the teacher immediately models the correct answer and has the student repeat it. After this, the student is allowed to attempt the answer again independently

Source : Authors' own work

1. gains the attention of the participant;
2. gives clear instruction;
3. presents correct array size;
4. uses correct instructional materials;
5. provides reinforcement following correct responses;
6. provides the appropriate error correction following errors;
7. delivers error correction accurately;
8. the session takes place within the planned time slot;
9. data were recorded; and
10. ten trials were delivered in the session.

Each of these components was either scored with a plus when the procedure was adhered to or a minus when the procedure was not adhered to. Percentage adherence per session was calculated by dividing correct components by total components, then converted to a percentage. Mean procedural fidelity across the sessions was 98% (96%–100%). No fidelity data were collected for baseline and maintenance conditions.

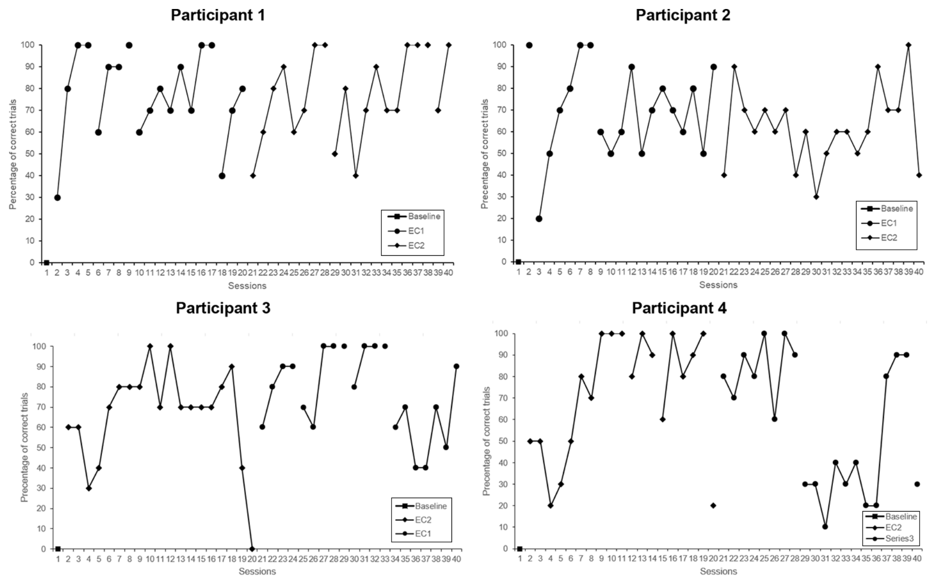
Results

All participants began with a baseline score of 0% for correct responses across various items. The baseline data in the graphs (Figure 1) only include the items that participants could not initially identify, as these were the targets for subsequent teaching and maintenance phases. The line graphs illustrate the percentage of correct trials across sessions for each participant, highlighting the improvement in correct responses during the EC1 and EC2 conditions. Each point on the graph represents the accuracy per session, and the consistent upward trend reflects the effectiveness of the intervention.

In the EC1 condition, Participant 1 successfully identified the scales, whisk, spatula and blender, achieving correct responses for four out of the targeted items. Under the EC2 condition, Participant 1 correctly identified the sieve, dental floss and rolling pin, meeting the criteria for three items. Overall, Participant 1 met the criteria for successfully identifying seven items across both conditions, demonstrating effective learning under both methods, with EC1 appearing to be slightly more effective. Participant 2 successfully identified the sink and bowl under the EC1 condition. However, in the EC2 condition, Participant 2 did not meet criteria for any items. Thus, Participant 2 met the criteria for two items overall, indicating a more effective outcome with the EC1 condition. Participant 3 met the criteria for five items (razor, kettle, rolling pin, shaving foam and can opener) under the EC1 condition. No items were identified under the EC2 condition. Therefore, Participant 3 met the criteria for five items in total, showing that the EC1 condition was more effective for that participant. In the EC1 condition, Participant 4 successfully identified the rolling pin and laundry basket. Under the EC2 condition, Participant 4 correctly identified the toaster, spoon and nail clippers, meeting the criteria for three items. Overall, Participant 4 met the criteria for five items, showing effective learning under both conditions with EC2 showing slightly greater efficacy. It is important to note that while Session 10 should have met the criteria for Participant 4, it overran. This indicates that the participant's performance was consistent, but the session was extended beyond the usual limit, potentially affecting the measurement of target achievement.

Across both conditions, the EC1 condition led to a higher number of items (13 items) meeting the criteria for successful identification compared to the EC2 condition (6 items) (Figure 2).

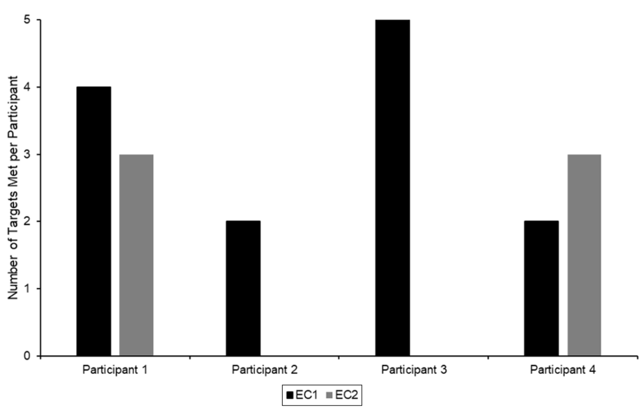
Figure 1 Percentage of correct trials across sessions for each participant in EC1 and EC2 Conditions



Notes: The line graphs illustrate the percentage of correct trials across sessions for each participant. They highlight the improvement in correct responses during the EC1 and EC2 conditions. Each point on the graph represents the accuracy per session, and the consistent upward trend reflects the effectiveness of the intervention. Notably, targets were considered met if participants achieved 90% accuracy across two consecutive sessions or 90% and above in the first session of introduction. The data show the progression and learning curve of each participant under both conditions

Source: Authors' own work

Figure 2 Number of targets met across EC1 and EC2 conditions and participants



Notes: The bar graph summarises the total number of targets met by each participant under the EC1 and EC2 conditions. It provides a visual comparison of the effectiveness of each condition in helping participants meet their learning targets. The black bar shows the EC1 condition, and the grey graph shows the EC2 condition

Source: Authors' own work

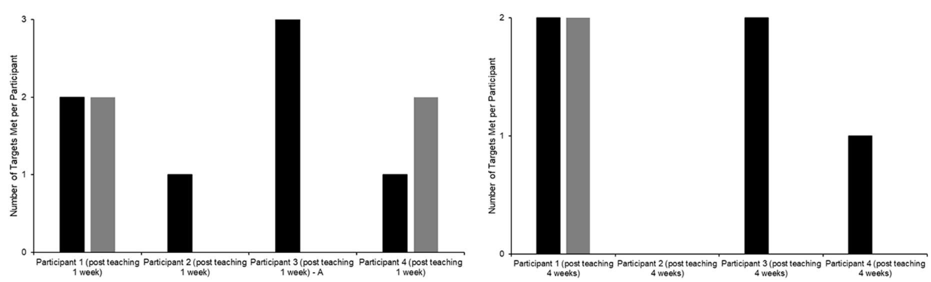
The effectiveness of maintaining correct identification of items post-teaching was assessed at two intervals: one week and four weeks after the criteria were initially met. The results are detailed for each participant and the respective conditions (Figure 3).

After teaching one week: For Participant 1, correct identification was maintained for two items under the EC1 (scales and spatula) and two under the EC2 condition (sieve and dental floss). Participant 2 maintained correct identification for one item (bowl) under the EC1 condition, while no items were applicable for the EC2 condition. Participant 3 maintained correct identification for three items (razor, shaving cream and kettle) under the EC1 condition, with no items applicable for the EC2 condition. Participant 4 maintained correct identification for one item (laundry basket) under the EC1 condition and two items (spoon and nail clippers) under the EC2 condition.

After teaching four weeks: At the four-week post-teaching assessment, Participant 1 continued to maintain correct identification for the same two items under the EC1 condition (scales and spatula) and two items under the EC2 condition (sieve and dental floss). Participant 2 did not maintain any items, as no items met mastery criteria under the EC2 condition, and similarly, no items were maintained under the EC1 condition. Participant 3 maintained correct identification for two items (shaving cream and kettle) under the EC1 condition, with no items applicable for the EC2 condition. Participant 4 maintained correct identification for one item (rolling pin) under the EC1 condition and did not maintain any items under the EC2 condition.

For Participant 1, both the EC1 and EC2 conditions were equally effective in maintaining correct identification, suggesting that Participant 1 was able to retain the learned items effectively using both methods. Participant 2 only maintained one item under the EC1 condition at the one-week assessment and did not maintain any items at the four-week assessment. For Participant 3, the data shows better retention under the EC1 condition. Initially, three items were maintained at the one-week assessment, which was slightly reduced to two items by the four-week mark. Participant 4 exhibited a unique pattern. Initially, one item was maintained under the EC1 condition and two under the EC2 condition at the one-week assessment. However, by the four-week assessment, only one item was maintained under the EC1 condition, with no items maintained under the EC2 condition.

Figure 3 Number of targets maintained across EC1 and EC2 conditions and participants one and four weeks after teaching



Notes: The bar graphs summarise the total number of targets maintained by each participant under the EC1 and EC2 conditions following one and four weeks after teaching. The black bars show the number of targets maintained under the EC1 condition during one- and four-week maintenance assessments. The grey bars show the number of targets maintained under the EC2 condition during the first- and four-week maintenance assessments
Source: Authors' own work

This indicates that while there was better initial retention under EC2, the longer-term retention favoured the EC1 condition.

Discussion

The objective of this study was to evaluate whether a more naturalistic error correction approach could be as effective as a structured one. Our study not only demonstrated that the EC1 condition, which is more structured and less naturalistic, led to better mastery of skills compared to the EC2 condition but also provided significant insights into the effectiveness of different error correction procedures. The EC1 condition resulted in a higher number of mastered targets, fewer errors and reduced teaching time per target. These results are particularly significant for individuals with difficulties in information retention, shedding new light on effective teaching strategies for this population.

When evaluating the overall effectiveness in maintaining learned items, the EC1 condition appears to demonstrate more consistent long-term retention across the participants, especially when considering the four-week post-teaching assessments. Although Participant 1 showed equal maintenance in both conditions, Participant 4 displayed better retention under EC1. For Participants 3 and 4, comparability was not applicable, as there were no acquired items to be tested for retention under the EC2 condition. The EC1 condition may be more effective for maintaining learning outcomes over an extended period. This suggests that while both conditions can be effective in the short term, EC1 may offer more durable learning benefits. However, individual variability is evident, and further investigation into the specific factors contributing to maintenance effectiveness under each condition is warranted with a larger pool of participants. Additionally, it may be beneficial to assess which error correction procedure is most effective for each student and personalise the approach accordingly.

It is also important to consider the potential influence of natural exposure to targets outside of teaching sessions on maintenance outcomes. For example, items such as bowls and spoons are likely to be encountered frequently in everyday activities, potentially providing additional incidental reinforcement. In contrast, less commonly encountered items, such as razors or dental floss, may lack similar opportunities for reinforcement in natural contexts. This variability in exposure could contribute to differences in retention across targets and highlights the importance of contextual factors when interpreting maintenance results.

The findings from this study hold several practical implications for educators working with autistic students. The success of the EC1 condition highlights the value of structured error correction procedures in promoting skill acquisition and retention, suggesting that educators may benefit from incorporating similar methods into their classroom routines, which is crucial when working with students who may need additional support to succeed. These findings not only provide empirical support for using structured error correction procedures to enhance skill acquisition and maintenance for autistic students but also align with and reinforce previous literature.

Our study echoes the work by Kodak *et al.* (2016) and Plaisance *et al.* (2016), highlighting the importance of structured error correction in promoting effective learning outcomes. Townley-Cochran *et al.* (2017) emphasised the efficacy of structured error correction procedures for children with autism, and our findings support this by showing the superior performance of the EC1 approach. Although more intrusive procedures like MPSR (EC1) have been criticised for increasing aversiveness (McGhan and Lerman, 2013), they can still be valuable in certain contexts. EC1's structured, step-by-step approach provides predictability, which can be particularly beneficial for autistic students who need clear guidance. The use of distractor trials helps reinforce learning through spaced repetition, improving retention (Cariveau *et al.*, 2018). Despite being time-consuming, EC1's structured nature may lead to long-term efficiency by consolidating multiple learning targets.

Leaf *et al.* (2019) emphasised the need for structured training for behaviour change agents and parents to implement DTT. Our study supports this by demonstrating the success of EC1 in our intervention. McDougal *et al.* (2020) provided insights into barriers and facilitators of learning in this population, and our study contributes to this understanding by showing that EC1 can significantly enhance learning outcomes, addressing some of these barriers. Leaf *et al.* (2020) compared error correction to errorless learning and found that structured approaches lead to better learning outcomes, reinforcing our findings. Yu *et al.* (2020) conducted a meta-analysis on the efficacy of ABA-based interventions for autistic participants, and our study adds to this body of evidence by demonstrating the effectiveness of EC1 in enhancing skill acquisition and maintenance. Finally, Yuan and Zhu (2020) evaluated prompting procedures in error correction, and our study complements their work by comparing two specific error correction procedures, further informing best practices in prompting and error correction, with our findings suggesting that structured prompting, as used in EC1, is more effective.

Although this study focused on comparing structured error correction procedures, it is important to acknowledge the wider body of research that emphasises the importance of minimising the aversiveness of corrective feedback. For instance, frameworks such as the Learn Unit (Greer and McDonough, 1999) offer valuable insights into how error correction can be aligned with natural reinforcement strategies.

Limitations and future directions

While this study's findings are robust, several limitations should be acknowledged. Firstly, participants had prior exposure to the EC1 condition, as they had been attending the school for four years where this standard error correction procedure was used. This familiarity may have influenced the results, biasing them in favour of EC1. Future studies should include participants without prior exposure to the error correction procedures being evaluated to obtain a more unbiased comparison.

Additionally, this study primarily focused on early learners, which may limit the generalizability of the findings to diverse cohorts. To address this, future research should encompass a broader range of learners, including intermediate (Partington and Sundberg, 1998; Cooper *et al.*, 2020), to ascertain the point at which a structured error correction approach can effectively fade into a more naturalistic one for learners who acquired some foundational skills and are working on expanding their knowledge and abilities, focusing on more complex communication, academic skills and social interactions, but still requiring significant support. This would provide a more comprehensive understanding of the efficacy of different error correction strategies across varying levels of learner proficiency. Furthermore, identifying hygiene items is a foundational step toward functional use. To ensure these skills are transferable beyond the teaching environment, future studies should explore how these error correction methods function in more naturalistic settings. Generalisation of skills, such as identifying and using functional items, into real-life contexts like personal hygiene and cooking tasks, would help assess whether the structured methods can be integrated effectively into daily routines. This would also provide a more accurate representation of how error correction procedures support meaningful, practical learning outcomes for autistic students.

This study's collection of maintenance probes was limited to short-term instances, which could impact the assessment of long-term retention. Future studies should incorporate long-term follow-up assessments to evaluate the durability of the skills acquired under different error correction procedures. These assessments may help further determine the effectiveness of these procedures in promoting sustained learning and retention over time.

While this study focused on point response targets, future research could explore a broader range of skill acquisition targets, including various topographies of responses, to assess the generalizability of error correction procedures across different types of learning tasks.

Understanding how different experiences and past learning shape motivation is essential. This includes considering how certain conditions and internal thoughts impact a child's willingness to engage in learning activities. This approach provides a deeper insight into what drives a child's motivation and engagement, encouraging further research and discussion in the field.

In summary, our study underscores the effectiveness of the EC1 error correction procedure in enhancing skill acquisition and maintenance for autistic students. It supports the growing body of literature that emphasises the importance of structured error correction strategies in educational settings for autistic learners. However, it is important to acknowledge that while structured methods are effective, there is also a need to explore how these procedures can be adapted to more naturalistic settings. Future research should focus on finding the right balance between structured and naturalistic teaching approaches, allowing for flexibility in real-world environments such as group activities or community-based instruction. This could involve testing how structured procedures like EC1 can be modified to fit the fluid dynamics of a typical classroom while maintaining their effectiveness in promoting skill acquisition. Understanding this balance would help educators integrate these strategies more seamlessly into their teaching and making them applicable across various learning contexts.

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