

A comparison of a gestural prompt and a teacher model on the acquisition of daily living skills

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Abstract

Purpose – The purpose of this study is to compare two prompting strategies, gestural prompt and teacher model, to identify which was more efficient in teaching a daily living skills task of folding clothes to two autistic adolescent males with a diagnosis of a severe learning disability. The study was an adapted replication of a study by Sabielny and Cannella-Marone (2014) where physical prompting only was compared with physical combined with vocal prompting on the acquisition of folding clothes.

Design/methodology/approach – An alternating treatment design, with the two prompting strategies counterbalanced across tasks, was used.

Findings – Results showed that the gestural prompt and teacher model were both successful in teaching participants to fold clothes, however, the teacher model supported a faster acquisition rate. It is recommended that the teacher model is the prompting strategy used for these participants for the teaching of future new skills. This study demonstrates the importance of determining the most efficient prompting strategy to teach new skills based on individual's needs.

Originality/value – This research can be easily replicated and used to adapt teaching strategies to encourage further independence. It is important to determine the most efficient prompting strategy for an individual to ensure that more learning can take place in the future.

Keywords Prompting, Daily living skills, Gestural prompt, Prompt dependency, Teacher model

Paper type Research paper

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Independence

It is important for individuals with severe and complex learning disabilities to learn daily living skills to increase their independence, and therefore, their quality of life. Quality of life refers to an individual's perception of their position in life in relation to their life goals and expectations, life standards and concerns. Levels of independence, social relationships, personal health, beliefs and a person's psychological state should all be considered when considering a person's quality of life (Chiang and Wineman, 2014).

O'Leary and Dubey (1979) discussed how acting independently is typically expected by Western culture; therefore, acquiring independent life skills early on allows a person more potential to thrive in domestic and vocational settings. Shipley-Benamou *et al.* (2002) emphasised the vital need for further teaching strategies to support autistic children and young adults to increase their levels of independence and strategies that are specifically designed for autistic individuals. Taylor *et al.* (2014) discussed the case of a 26 year old male who was reliant on his parents for all of his self-care and daily living skill related needs and how this limited his opportunities to participate in community-based living, work and

Conflict of interest: The authors declare no conflict of interest.

leisure activities. This resulted in the young man being isolated from peers and engaging in unproductive activities. This emphasises the need for increasing independence in young people and adults to increase quality of life.

Prompting

Prompts are defined as “instructions, gestures, demonstrations, touches or other things that we arrange or do to increase the likelihood that children will make correct responses” (McClannahan and Krantz, 1999, p. 37), and have many forms, such as verbal prompts, modelling, gestural prompts, physical prompts, manual prompts, textual prompts, picture prompts and stimulus shaping. Koegel *et al.* (1982) stated that a prompt should, firstly, work for the purpose it has been selected for and, therefore, produce a correct response; if it does not evoke the desired response, it should be replaced. Secondly, prompts must be faded as soon as possible so the individual responds to the natural cues.

Many autistic children are taught specific skills using least-to-most prompting, also known as prompting hierarchy (Horner and Keilitz, 1975). Jones and Zarcone (2014) describe how in least-to-most prompting a learner would first receive a verbal prompt, followed by more intrusive prompts, such as, a model prompt then a more intrusive physical prompt, if they do not respond accurately. When implementing different prompts issues can arise in regards to prompt dependency, defined as an individual responding to prompts instead of responding to the cues that are expected to evoke the target behaviour (Cameron *et al.*, 1992). Prompt fading is important as, if carried out successfully, it can reduce the risk of a person forming dependency on prompts. Jahr (1997) suggested that “the fading of prompts is probably one of the more critical elements in the therapeutic process and lack of such techniques may have very unfortunate effects on the client”.

There are also ethical considerations in regards to the type of prompting used for individuals. For example, Cooper *et al.* (2019) discussed how physical guidance can be effective, but it is more intrusive than verbal prompts and modelling. The use of physical prompting requires direct contact between people and can make a precise assessment of the person's progress challenging. By using physical prompts, it can leave little opportunity for the person to emit a behaviour without having direct assistance from another person. There are also ethical considerations in regards to consent and assent, as some people may resist physical touch from others. With this in mind, it is important to consider which types of prompts are appropriate for individuals.

Tactics to teach daily living skills

There are several teaching strategies that can be used to teach daily living skills, some of which incorporate different types of prompting. These include observational learning (Rothstein and Gautreaux, 2007), video modelling (Dogan, 2023) and video prompting (Thomas *et al.*, 2020). Pierce and Schreibman (1994) used pictorial self-management to teach daily living skills to three autistic male participants, all with a severe learning disability. The results indicated that autistic young people could complete daily living tasks using pictures in the absence of a family or staff member. The participants all followed novel picture sequences on completion of the study, indicating that the picture prompts were effective in supporting the young people to complete the tasks.

Cronin and Cuvo (1979) evaluated the effectiveness of a task analysis and a graduated sequence of prompts on the more complex daily living skill of mending clothing, for five participants diagnosed with learning difficulties. The use of these resulted in all participants being able to successfully take part in and complete the mending tasks.

Dogan (2023) tested the effects of video modelling presented on a tablet PC to teach the daily living skills of preparing instant soup, setting the dinner table and placing dirty dishes

in the dishwasher, with one autistic teenager. A multiple probe design across these skills was used, with results showing that the participant acquired the targeted skills through use of the video models. The participant also maintained and generalised these skills, this was further validated by the opinions of the parents and brother of the participant.

[Sabienly and Cannella-Malone \(2014\)](#) conducted a study into the effects of physical only and physical plus vocal prompting strategies on the acquisition of folding clothes tasks, to determine which prompting strategy was most effective. Two participants with severe learning disabilities took part, and an alternating treatments design across the different prompting strategies was used. The prompting strategies were counterbalanced across folding a shirt and folding a pair of pants. The study found that both strategies were equally effective for one participant, however, for the second participant the physical only prompting was more effective.

The purpose of the current study was to replicate the study by [Sabienly and Cannella-Malone \(2014\)](#) to determine which prompting strategies are most effective in the acquisition of folding clothes tasks for autistic individuals, with an aim to increase independence and to reduce support from others to complete these tasks. In the current study we compared two different types of prompts, gestural prompt and teacher model, as these are considered less intrusive than physical prompting ([Cooper et al., 2019](#)), and they were considered more appropriate for the participants in this study.

Method

Participants

Two autistic adolescent males, Max and Leo, took part in this study. They were aged between 17 and 18 years old and were both in a sixth form class within their school. Participants were White Eastern European and White British, with one having an additional diagnosis of epilepsy. Both participants had a diagnosis of a severe learning disability. Max was able to follow simple vocal instructions and request vocally in full sentences. Leo was able to make requests using Picture Exchange Communication System using Proloquo2Go® and was able to follow simple picture schedules. Both pupils followed an individualised curriculum, focussing on communication and daily living skills as part of their sixth form curriculum. As part of this curriculum, it was identified that they did not have the skills to fold clothes, and therefore, were selected to be included in the study. A further inclusion criterion for this study was that both participants had generalised imitation repertoires, defined by both participants being able to imitate or copy novel responses with point-to-point correspondence ([Greer and Speckman, 2009](#)).

Setting and materials

The study took place at an independent special school that uses the Comprehensive Application of Behaviour Analysis to Schooling (CABAS®; [Greer, 2002](#); [Selinske et al., 1991](#)) as its system for teaching. Both participants were in a sixth form class containing one other pupil with two teachers, a lead teacher and a supervisor. The baseline and intervention sessions were carried out in the sixth form classroom, the sixth form common room and daily living skills room. The baseline and intervention sessions were carried out by all staff in the sixth form class.

Materials for the baseline and intervention sessions included a shirt, a pair of trousers and a task analysis. Clothing was appropriate sizing for the participants. Two sets of clothing items were provided for both the teacher and participant during the modelling phases, so they had their own set of clothing to demonstrate the skill.

Definition of behaviour and data collection

The target behaviour was to fold items of clothing according to a task analysis. A task analysis was developed for both items of clothing based on the teacher completing the tasks prior to developing the task analysis. The folding shirt task analysis included:

- place shirt laid out;
- fold one side to the middle;
- fold the other side to the middle;
- fold the bottom to the top; and
- move hands away to indicate finished.

The folding trousers task analysis included

- place trousers laid out;
- fold one leg to the other leg;
- fold the bottom to the top;
- fold the bottom to the top again; and
- move hands away to indicate finished.

The independent variable was a gestural prompt and teacher model. For the purpose of the study, a gestural prompt was defined as the teacher pointing to the materials to guide the participant to the correct part of the clothing and to carry out the correct folding action. A teacher model was defined as the teacher carrying out the action according to the task analysis for the participant to copy.

Data were collected as trials throughout the study. Data were reported as percentage of steps completed on the two task analyses. Mastery criterion was set at 100% accuracy across the entire task analysis once.

Intervention

Informed consent was obtained from each of the participants' parental guardians and the adolescent participants provided assent. Assent was determined on an individualised basis by a staff team who knew the participants well, this was monitored throughout the study to ensure they could withdraw their assent at any time. During baseline sessions, the item of clothing was presented to the participant and a vocal antecedent was delivered, "Fold the shirt/trousers." No reinforcement or corrections were delivered during baseline sessions but vocal encouragement and redirections to the task were delivered throughout for both participants.

During intervention sessions, a vocal antecedent of "Fold the shirt/trousers" was delivered. For the purpose of the study, the shirt condition was prompted with a gestural prompt only and the trousers were prompted with a teacher model only. If the participant responded correctly, it was scored as correct on the task analysis. If the pupil did not respond within 5 seconds, or responded incorrectly, a further prompt was delivered and scored as an incorrect response. Folding t-shirt and folding trousers were chosen as targets due to their similarity in the number of steps required. Each step was scored on the task analysis. Intervention sessions were carried out three times a day, four times a week for each participant.

The order of the intervention sessions was pre-determined before the onset of the intervention and put into a schedule format for teachers to follow, this was to ensure randomisation.

Design

The study used an alternating treatment design, with the two prompting strategies (teacher model and gestural prompt), counterbalanced across tasks.

Interobserver agreement

Interobserver agreement was carried out for 90% of all baseline sessions, scoring 100% agreement and for 20% of all intervention sessions, with 100% agreement. Interobserver agreement was carried out by two teachers independently scoring the data during observations. Interobserver agreement was calculated by dividing the number of the exact agreement sessions by the total number of sessions and multiplying by 100.

Results

Figure 1 shows the percentage of steps completed in the folding clothes tasks during baseline and intervention for Max. Results showed that during baseline, Max scored 20% for all three sessions for the teacher model condition and a mean average of 27%, ranging from 20% to 40% for the gestural prompt condition. During intervention the teacher model condition ranged from 0 to 100%, with a mean of 60%, and for the gestural prompt condition data ranged from 60% to 100%, with a mean average of 68%.

Figure 2 shows the percentage of steps completed in the folding clothes tasks during baseline and intervention for Leo. Results showed that during baseline, Leo scored an average of 47%, ranging from 40% to 60% for sessions for the teacher model condition and 20% for all three sessions for the gestural prompt condition. During intervention, the teacher model condition ranged from 40 to 100%, with a mean of 72% and for the gestural prompt condition data ranged from 60% to 100%, with a mean average of 70%.

Figure 1 Graph to show percentage of steps completed in the folding clothes tasks during baseline and intervention for Max

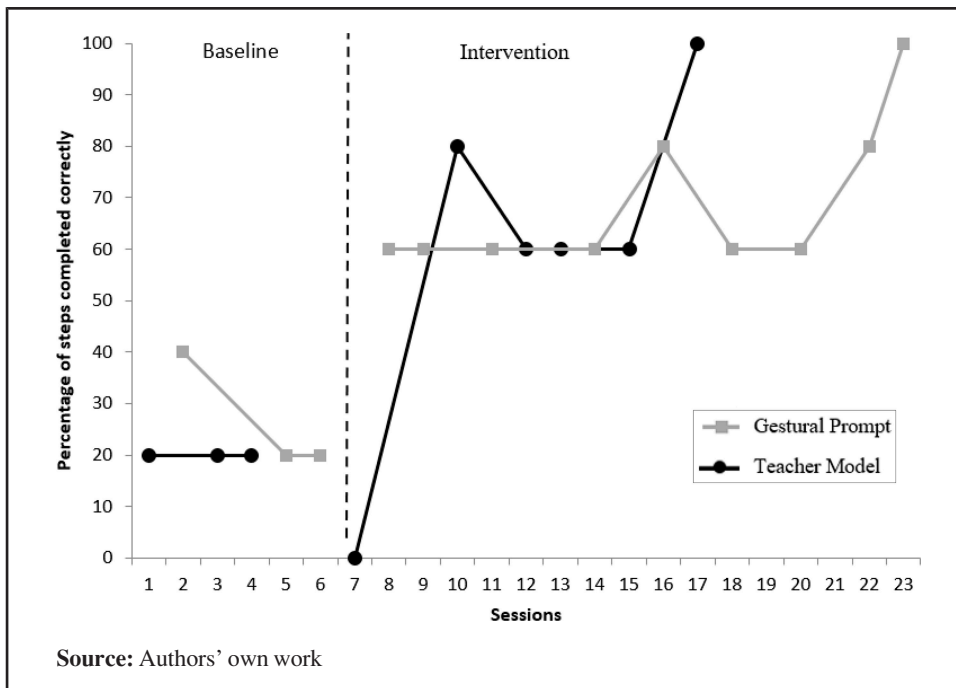


Figure 2 Graph to show percentage of steps completed in the folding clothes tasks during baseline and intervention for Leo

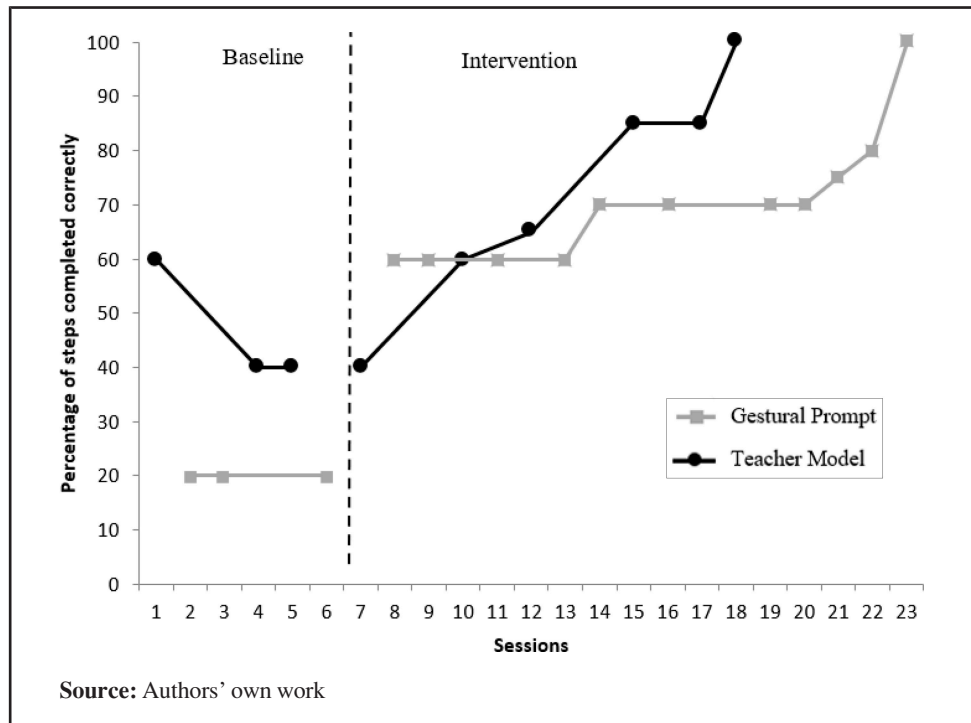
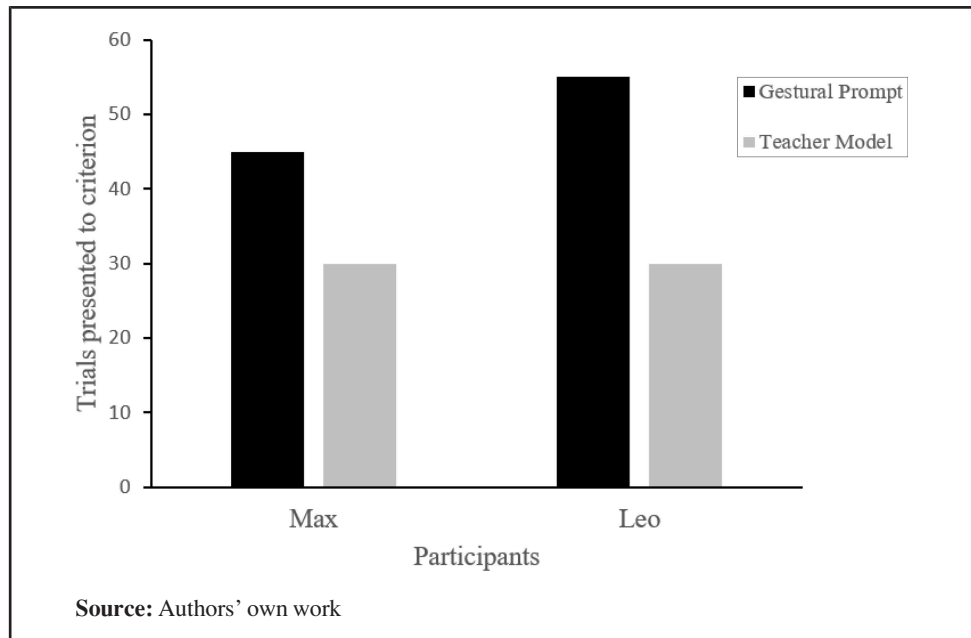


Figure 3 showed the number of trials presented for the participants to achieve mastery criterion during both teacher model and gestural prompting conditions. Max needed 9 sessions (45 trials presented) to achieve mastery of the task during the gestural prompt condition and 6 sessions (30 trials presented) during the teacher model

Figure 3 Graph to show trials presented to achieve mastery for Max and Leo



condition. Leo needed 11 sessions (55 trials presented) for the gestural prompt conditions and 6 sessions (30 trials presented) for the teacher model condition to achieve mastery of the task.

Discussion

Results showed that although both prompting conditions were successful in teaching the participants to fold clothing, the teacher model prompting was more efficient than the gestural prompt condition. It is interesting to consider whether the efficiency of the teacher model was due to the participants both having generalised imitation in repertoire. During a study by [Sabienly and Cannella-Malone \(2014\)](#) they found that both prompting strategies (physical only and physical plus vocal prompting) were equally effective for one participant, however, for the second participant the physical only prompting was more effective. The current study was an adapted replication (due to different prompting strategies being used) and results indicated that both prompting strategies were successful, however, the teacher model prompting was more efficient than the gestural prompt condition.

[Cooper et al. \(2019\)](#) suggested that a teacher model is a less intrusive prompt, than prompts such as physical prompting, for teaching new skills to those with severe and complex learning disabilities. It is suggested that less intrusive prompting be more easily faded, and allows for further independence and less support presence. The findings show that it could also be a more efficient way to teach daily living skills, which is therefore promising. Implications of this research could lead to practitioners considering which prompt level to initiate teaching with, rather than potentially starting with the most intrusive prompt, such as physical guidance.

Limitations

Future research could increase the number of participants to further validate findings, as one of the limitations of both the original and current study was the small number of participants. Participants could also be more varied across different disabilities, as well as neuro-typical children, to see if this has any impact on data. Another limitation is that the tasks set may not have been equivalent in difficulty (although attempts were made to make them the same level of difficulty). All of the tasks involved folding clothes and had the same number of steps in the process.

Due to the nature of the task analysis being for a similar task and the same number of steps, some of the learning from one task analysis could have carried over to the other, which may have had an impact on the data collected. Therefore, for future studies this could be overcome by selecting tasks of equivalent difficulty but tasks that have a different topography. However, this also has limitations as the tasks would need to be selected carefully to avoid differences in regards to level of difficulty.

A further limitation of the current study is that generalisation and maintenance probes were not conducted after the completion of our study. It would be interesting to review which prompting strategies lead to increased maintenance and generalisation, such as, folding other styles and categories of clothing and other laundry tasks, and whether these skills maintained over a period of time.

A further limitation was that the study was completed in a school environment, and although attempts were made to replicate a home setting i.e. the daily living skills room being set up similar to a home environment, this may have affected generalisation. At the end of the study, parents were given information to carry out these tasks in their home setting using the strategies used in this study.

Future research

Future research could analyse all of the prompting strategies from the original [Sabienly and Cannella-Malone \(2014\)](#) study and the current study to evaluate the most effective prompting strategy. This may provide further support for the theory that less intrusive prompts can also be the most efficient. It would also be interesting to determine whether results would be similar for participants without generalised imitation repertoires, or whether an alternative prompting method would be more successful.

Future research could also review different prompting strategies to determine whether they lead to prompt dependency. Too much dependency on prompts could, in the long term, cause difficulties for participants living independently. Prompt dependency could also lead to barriers to generalising and maintaining skills.

The overall aim of this study was to investigate the efficiency of different types of prompts with a focus on increasing independence. As adolescents transition to adult services, with lower staffing ratios and reduced funding, it is crucial to prepare them to be as independent as possible without the need for high levels of staff support. It would also be interesting to conduct future research on the use of video modelling, where individuals can take the lead in their teaching strategies with less staff support. There are many ethical considerations with the use of physical prompting and so further research to support the efficiency of less intrusive prompting strategies would be encouraging. Prompt fading strategies were not detailed in this study, although conducted at a later date for these participants, it would be beneficial to include this in future research to emphasise the importance of prompt fading and to study whether they could be faded successfully.

Future research could also look at participant preference of prompts used and effectiveness of the prompts in teaching new skills that the individuals have chosen as their preferred method. A social validity measure would ensure that tasks were meaningful to the participants themselves, for example, getting them to reflect on the tasks learned and the strategies they used.

Ethics statement

Ethics approval is in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Informed consent

The study was approved by the School's Ethics Committee. Participants' assent was also obtained.

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