

## **Assessing the effectiveness of discrete trial training in enhancing self-help skills among children with special educational needs: An action plan**

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### **ABSTRACT**

This study evaluates the impact of Discrete Trial Training (DTT) on students with Autism, Learning Disabilities, and Down Syndrome at Danao City Central SPED School during the 2024-2025 academic year. Utilizing a structured and repetitive teaching methodology, the research aims to highlight the role of DTT in fostering skill acquisition and independence among children with special needs. The findings demonstrate the efficacy of DTT, affirming its pivotal role in improving daily living skills and fostering independence in diverse educational settings. This research provides crucial insights for developing action plans to optimize educational practices for students with special needs, promoting their integration and independence within inclusive environments. The successful application of DTT not only enhances educational outcomes but also contributes to a more equitable and supportive educational landscape. An action plan is recommended by the researcher which consists with different approaches in regard to DTT that will make the students' progress their skills specifically in self-help skills. Ultimately, this study underscores the potential of DTT in improving the quality of life for students with special needs by supporting their successful social integration.

**Keywords:** Special Education, Discrete Trial Training, self-help skills, quantitative, action plan, Danao City, Cebu

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### **INTRODUCTION**

Human beings are a unique product of creation and evolution. Each one of us has different intellect, talent, skills, strength and weaknesses, capabilities and even imperfection. Others may see those imperfections as a hindrance to live for they have disabilities and special needs to be catered on. As generations go, special education plays a vital role among children with special needs. Special education refers to the arrangement of teaching procedures, adapted equipment and material accessible settings and other interventions designed to address the

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needs of students with learning differences, mental health issues, physical and developmental disabilities and giftedness. An individual with special need, needs help with communication movements, self-care and decision making. For this reason, students with special needs engage into various activities and receive specialized instruction.

Specialized instruction is individually designed based upon individual needs to learn both academic and behavior skills that typically developing children acquire naturally or with minimal instruction. It is more functional in nature based upon individual need for support which includes direct instruction, additional scaffolding and Discrete Trial Training. It is a pace tailored more to the needs of the student with additional teacher wait time for a response after querying a student, more time on a specific skill/behavior to practice and review, multiple opportunities to respond to instruction, additional practice and frequent progress monitoring - at least several times per week and be focused, goal driven and targeted that addresses a deficiency in the students' behavior or educational environment.

Discrete Trial Training (DTT) is an evidence-based teaching strategy often used in Applied Behavior Analysis (ABA) to help individuals, particularly those with autism spectrum disorder, acquire new skills. It involves breaking down skills into small, "discrete" components and teaching each component individually. A typical DTT session consists of a cue, a prompt, if necessary, the individual's response, and a consequence, such as reinforcement or correction. According to Martin, R. in 2021, he suggests that structured and repetitive learning processes, such as those inherent in DTT, can facilitate improved cognitive and behavioral outcomes in students with developmental disorders, including autism, learning disabilities, and Down Syndrome. Martin's theory emphasizes the importance of tailored interventions that focus on individual learning strengths and needs.

A pertinent study that aligns with the discrete trial training (DTT) is the research by Kim, J., & Roberts, D. (2022), this study examines the effectiveness of DTT in improving learning outcomes for children with autism, learning disabilities, and Down Syndrome. The study utilized a controlled experimental design to assess the impact of DTT on skill acquisition, finding substantial improvements in targeted educational domains. The results support the continued use of DTT as a valuable intervention for fostering skill development in diverse educational settings. According to Nelson, B. (2023), employing discrete trial training with students who have special educational needs. This emphasizes that structured, repetitive training sessions, such as those found in DTT, are crucial for cognitive and developmental progression in students with disabilities.

Nelson emphasizes that breaking down tasks into smaller, manageable components enables gradual skill acquisition, promoting significant improvements in both academic and daily living skills. According to a study by Smith et al. (2021), DTT is effective in promoting skill acquisition, particularly in communication, social, and academic domains. The structured nature of DTT allows for consistent and repeatable teaching, which can be tailored to the specific learning needs of the individual. The authors note that "while DTT is highly structured, it is flexible enough to be adapted to suit the unique needs of each learner" (Smith et al., 2021). This adaptability makes it a valuable method in educational and therapeutic settings, helping learners to make significant progress in a controlled and supportive environment.

This research will be more focused on the DTT as a specialized instruction in teaching students with special needs. Discrete Trial Training (DTT) is an instructional strategy rooted in applied behavior analysis, designed to teach skills in a structured and systematic way. Despite its proven effectiveness, particularly for children with autism, many schools—both public and private—have not fully embraced its implementation. It involves breaking down complex skills into smaller, more manageable steps or discrete trials". Each trial consists of a clear beginning and end, and focuses on teaching a single, specific skill. It is a one-to-one instructional approach used to teach skills in a planned, controlled and systematic manner.

The researcher was motivated to conduct this study due to the lack of widespread adoption of DTT in educational settings. They recognized a significant gap between the potential benefits of DTT and its actual utilization in schools. This gap may stem from a range of factors, including limited awareness, insufficient training for educators, or resource constraints.

By investigating this issue, the researcher aims to highlight the advantages of DTT, provide evidence-based recommendations for its integration, and ultimately enhance the educational experiences of students who could greatly benefit from such tailored instructional approaches.

The study by Smith et al. (2021) on Discrete Trial Training (DTT) highlights its significant potential in enhancing self-help skills among students with special educational needs. By breaking down complex tasks into manageable components, DTT provides a structured framework that facilitates the gradual acquisition of self-help skills such as dressing, feeding, and personal hygiene. The adaptability of DTT ensures that each skill can be tailored to meet the individual requirements of learners, promoting independence and confidence. As noted in the study, "DTT's structured yet flexible approach allows for personalized interventions that significantly improve self-help skills in students with diverse learning challenges" (Smith et al., 2021). This adaptability not only aids in skill acquisition but also empowers students by fostering a sense of achievement and self-reliance in their daily activities.

The study highlights the benefits of DTT in improving educational outcomes for students with autism, learning disabilities, and Down Syndrome while also addressing the obstacles faced by educators and parents in implementing these strategies. The research underscores the positive impact of DTT on student engagement and skill acquisition, encouraging broader adoption in schools similar to Danao City Central School SPED Center.

### Statement of the problem

This research assessed the effectiveness of Discrete Trial Training in enhancing the shoe lacing and buttoning skills of learners with special educational needs at Danao City Central SPED School in the Danao City Division for school year 2024-2025 as basis for an action plan.

1. What is the profile of the learners in terms of age, gender, type of disability, and grade level?
2. What is the performance level of the learners in shoe lacing and buttoning skills before the implementation of Discrete Trial Training?
3. What is the performance level of the learners in shoe lacing and buttoning skills after the implementation of Discrete Trial Training?
4. Is there a significant difference between the learners' performance scores in shoe lacing and buttoning skills before and after the implementation of Discrete Trial Training?
5. Based on the findings of the study, what action plan can be proposed to further enhance the shoe lacing and buttoning skills of learners with special educational needs?

### METHODOLOGY

#### Research design

This quantitative research employed a pre-assessment and post-assessment design. Pre-assessment activities had been conducted before students began a lesson, unit, course, or academic program to establish a baseline against which researcher could measure learning

progress over the duration of the instructional period. This baseline also determined the general readiness of the students to perform self-help skills independently without the aid of More Knowledgeable Others. In contrast, post-assessment activities evaluated and determined the effects of Discrete Trial Training in teaching self-help skills to children with special needs at Danao City Central SPED School. To effectively implement this study's design, universal sampling was utilized due to the small population of respondents who were students with special needs.

#### Respondents and locale of the study

The researcher used universal sampling in this study. A study that aligned with the details regarding sampling methods and discrete trial training was the research by Wilson, H., & Evans, S. (2021). This study explored how discrete trial training (DTT) impacted skill acquisition in children with autism, learning disabilities, and Down Syndrome using a stratified sampling method. The researcher adapted this sampling strategy to focus on specific educational environments, ensuring that findings were applicable across various contexts, despite the inherent limitations of the sampling method.

Using purposive sampling, the subjects of this research study were the 20 children with special needs at Danao City Central SPED School. The researcher gathered the profiles of the students to determine their qualification for inclusion in the study based on the following criteria: a) both male and female, b) aged 5-12 years old, c) enrolled in Kinder through Grade 6, and d) diagnosed with a disability such as Autism, Learning Disability, or Down Syndrome. The researcher selected respondents who were unable to perform self-help skills such as shoe lacing and buttoning. Danao City Central SPED School was chosen as the research environment for several compelling reasons. It was recognized for its comprehensive and well-established special education program. The school was equipped with trained professionals who specialized in working with students with diverse learning needs, making it an ideal setting for implementing and assessing educational interventions like Discrete Trial Training (DTT). Their expertise ensured that the DTT sessions were conducted effectively, with a focus on optimizing learning outcomes for students with special needs. Danao City Central SPED School accommodated a diverse student population with a range of special educational needs.

Table 1  
Distribution of Respondents

| Grade Level       | f  | %   |
|-------------------|----|-----|
| Grade 6           | 3  | 15  |
| Grade 5           | 1  | 5   |
| Grade 3           | 3  | 25  |
| Grade 2           | 3  | 15  |
| Grade 1           | 5  | 15  |
| Non-Graded Kinder | 5  | 25  |
| Total             | 20 | 100 |

#### Data analyses procedure

Before the researcher conducted the data gathering, the transmittal letter had been disseminated to request permission for conducting the study outside the school premises. The letter was sent to the Danao City Division Office to seek approval from the Superintendent and to the Danao City Central School SPED School Principal. After receiving permission, the

researcher collected the profiles of the respondents, which included details such as: a) gender, b) age, c) disability, and d) grade level. They carried out the pre-assessment activities, which involved tasks like shoe lacing and buttoning without assistance from a More Knowledgeable Other (MKO). Upon completing one session of pre-assessment, the researcher implemented Discrete Trial Training to help the children learn the tasks, with anecdotal recording done per session to document the progress and behavior of the children. Subsequently, the researcher conducted the post-assessment to evaluate the effectiveness of the Discrete Trial Training. After both the pre-assessment and post-assessment, the researcher interpreted the results using rubrics.

## RESULTS AND DISCUSSION

This chapter presents quantitative analyses and interprets the data collected from the survey questionnaire administered. The study's respondents were students with special educational needs, specifically learners with Autism, Learning Disability and Down Syndrome at Danao City Central SPED School. The presentations included information on the learners' age and gender, disability, grade level, performance level of the learners in the shoe lacing before the DTT, performance level of the learners in buttoning before DTT, performance level of the learners in the shoe lacing after the DTT, performance level of the learners in buttoning after the DTT, test of difference between the scores of the learning in the shoe lacing before and after the DTT, and test of difference between the scores of the learning in buttoning before and after DTT. For the appropriate disclosure of the information needed, the researcher used a table as a scheme for the earlier purpose. In addition, the researcher considered the necessary calculations, analysis, and interpretation of the results.

### Demographic profile of the learners

This section presents the demographic characteristics of the learners who participated in the study. The profile includes variables such as age, gender, disability, and grade level, which are essential in understanding the background of the respondents. These characteristics provide context for interpreting the learners' performance before and after the implementation of Discrete Trial Training. Furthermore, the demographic information helps determine whether learner differences may influence the outcomes of the intervention.

#### Age and Gender of the Learners

Table 2 presents the distribution of the learners according to age and gender. These variables are considered important factors that may influence the acquisition of self-help skills such as shoe lacing and buttoning. Understanding the age and gender composition of the learners provides a clearer picture of the participants involved in the study.

Table 2  
Age and Gender of the Learners

| Age (in years) | Female |    | Male |    | Total |     |
|----------------|--------|----|------|----|-------|-----|
|                | f      | %  | f    | %  | f     | %   |
| above 12       | 4      | 20 | 0    | 0  | 4     | 20  |
| 9-12           | 4      | 20 | 3    | 15 | 7     | 35  |
| 5-8            | 3      | 15 | 6    | 30 | 9     | 45  |
| Total          | 11     | 55 | 9    | 45 | 20    | 100 |

Table 2 reflected the age and gender of the respondents. The survey showed that eleven of the learners were female, or 55.00 percent, while nine were male, or 45.00 percent. Among the female respondents, four learners were above 12 years old (20.00%), four were aged 9–12 (20.00%), and three were aged 5–8 (15.00%). Among the male respondents, there were no learners above 12 years old (0.00%), three were aged 9–12 (15.00%), and six were aged 5–8 (30.00%). Overall, the data indicated that most respondents were female and that the largest age group was 5–8 years, with a total frequency of nine learners or 45.00 percent.

The findings suggested that female learners dominated the sample, particularly within the 5–8-year age range. This indicated that early intervention services, such as skill-based programs, were more commonly accessed or available for younger female learners. The distribution also highlighted the need to consider age and gender differences when planning and implementing educational interventions for learners with special needs.

The results implied that educators and policymakers should prioritize early, targeted interventions for learners aged 5–8, particularly females, to address potential disparities in access and outcomes. Focusing resources on younger learners may maximize the benefits of structured training programs, such as Discrete Trial Training, and support the development of foundational self-help and academic skills among learners with special needs.

Recent studies reinforced the importance of early, structured interventions for learners with special needs. Smith et al. (2021) emphasized that early intervention programs significantly improved skill acquisition in young learners. Johnson and Williams (2023) highlighted that structured, age-appropriate strategies, such as Discrete Trial Training, were effective in enhancing functional and cognitive skills in early childhood. Furthermore, Chen and Thompson (2023) demonstrated that gender and age considerations were crucial in designing interventions to maximize learning outcomes. Collectively, these studies supported the findings that early, focused interventions, particularly for females aged 5–8, contributed to measurable gains in skill development.

### Disability of the learners

Table 3 presented the distribution of the learners according to their diagnosed disability. Identifying the type of disability is essential in understanding the learners' individual needs and capabilities in performing self-help skills. This information provides context for interpreting their performance before and after the implementation of Discrete Trial Training.

Table 3  
Disability of the Learners

| Disability          | f  | %      |
|---------------------|----|--------|
| Autism              | 10 | 50.00  |
| Down Syndrome       | 1  | 5.00   |
| Learning Disability | 9  | 45.00  |
| Total               | 20 | 100.00 |

As shown in the table, fifty learners, or 50.00 percent of the respondents, had Autism; one learner, or 5.00 percent, had Down Syndrome; and nine learners, or 45.00 percent, had Learning Disability. The data reflected the distribution of disabilities among the respondents and highlighted that learners with Autism comprised the largest group in the study. This distribution provided important context for understanding how the implementation of Discrete Trial Training (DTT) could address the specific learning needs of the participants.

The findings suggested that learners with Autism formed the majority of the sample, indicating that interventions such as DTT were particularly relevant for this group. The high percentage of learners with Autism and Learning Disabilities implied that structured, systematic teaching methods were critical to enhancing self-help and functional skills. The distribution also emphasized the need to tailor instructional strategies according to the learners' specific disabilities to achieve effective skill acquisition.

The results implied that DTT could be effectively applied to learners with Autism and Learning Disabilities to improve self-help skills such as shoe-lacing and buttoning. Educators and therapists were encouraged to prioritize structured and repetitive interventions that accommodated the unique learning profiles of these learners. Additionally, the data suggested that individualized or small-group instruction could maximize the benefits of DTT, particularly for learners with Autism, who made up the largest portion of the respondents.

Recent studies supported the effectiveness of DTT for learners with special needs. Smith and Jones (2022) reported significant improvements in self-help skills among students with Autism and Learning Disabilities following DTT interventions. Anderson (2023) emphasized that systematic, step-by-step instruction enhanced skill acquisition in learners with developmental delays. Furthermore, Brown (2021) highlighted that structured, repetitive training facilitated mastery of functional tasks across diverse disability profiles. Collectively, these studies reinforced the findings of the current study, demonstrating that DTT was effective in addressing the learning needs of students with Autism and Learning Disabilities.

#### Grade level of the learners

The grade level of the respondents reflects their educational placement and developmental stage within the SPED program. This information is important in understanding the learners' readiness and varying levels of independence in performing self-help skills such as shoe lacing and buttoning.

Table 4  
Grade Level of the Learners

| Grade Level       | f  | %      |
|-------------------|----|--------|
| Grade 6           | 3  | 15.00  |
| Grade 5           | 1  | 5.00   |
| Grade 3           | 5  | 25.00  |
| Grade 2           | 3  | 15.00  |
| Grade 1           | 3  | 15.00  |
| Non-graded Kinder | 5  | 25.00  |
| Total             | 20 | 100.00 |

The data showed that learners from Grade 3 and Non-graded Kinder have the highest frequency, each with five learners or 25.00 percent. This is followed by Grades 6, 2, and 1, each with three learners or 15.00 percent. The grade level with the lowest frequency is Grade 5, with only one learner or 5.00 percent. The distribution indicates a diverse representation of grade levels among the respondents, reflecting a range of developmental stages and educational placements within the SPED program. This variation is important in understanding how learners of different ages and educational levels respond to interventions like Discrete Trial Training (DTT).

The findings suggest that DTT can be applied effectively across a range of grade levels, from Non-graded Kinder to Grade 6. The relatively even distribution across most grades indicates that learners at various developmental stages can benefit from structured, systematic interventions. The higher representation of Grade 3 and Non-graded Kinder learners may also reflect the school's enrollment pattern or the focus on early intervention for foundational skills. Overall, the grade-level profile provides context for assessing the impact of DTT on skill acquisition and performance.

The diverse grade-level distribution implies that educators can implement DTT with learners at different stages of development, tailoring the intervention to match the learners' age and educational readiness. Early grade learners and non-graded Kinder students, who make up a significant portion of the respondents, may particularly benefit from structured, step-by-step instruction in self-help and cognitive skills. This emphasizes the need for flexible instructional strategies within SPED programs to accommodate learners across multiple grade levels, ensuring that interventions like DTT are inclusive and developmentally appropriate.

Several recent studies support the use of DTT across different grade levels and learner profiles. Chen and Thompson (2023) highlight the effectiveness of DTT in improving academic performance among students from early grades through Grade 6. Smith et al. (2021) found that structured and repetitive interventions enhance skill acquisition for learners with autism and learning disabilities. Additionally, Martinez and Lee (2022) emphasize that interventions like DTT can be adapted for learners with diverse educational backgrounds and developmental stages, reinforcing the relevance of DTT for the varied grade levels observed in this study. These findings align with the current data, which demonstrate the applicability and benefits of DTT across multiple grade levels in SPED settings.

#### Performance level of the learners before DTT

This section presents the performance level of the learners in shoe-lacing skills and buttoning prior to the implementation of Discrete Trial Training. The results reflect the learners' baseline level of performance before the intervention was introduced. Establishing the pre-intervention performance is essential in determining the effectiveness of Discrete Trial Training.

#### Performance level of the learners in shoe lacing before DTT

Table 5 presents the performance level of the learners in shoe-lacing skills prior to the implementation of Discrete Trial Training. The results reflect the learners' baseline abilities in performing the target self-help skill. This baseline data serves as a reference point for comparing learners' performance after the intervention.

| Table 5                                                     |                 |       |        |
|-------------------------------------------------------------|-----------------|-------|--------|
| Performance Level of the Learners in Shoe Lacing Before DTT |                 |       |        |
| Performance Level                                           | Range of Scores | f     | %      |
| Passing                                                     | 23-33           | 0     | 0.00   |
| Developing                                                  | 12-22           | 16    | 80.00  |
| Failing                                                     | 0-11            | 4     | 20.00  |
| Total                                                       |                 | 20    | 100.00 |
| Mean                                                        |                 | 15.65 |        |
| St. Dev.                                                    |                 | 2.91  |        |

As presented in the table, the performance level of learners in shoe-lacing before the implementation of Discrete Trial Training (DTT) was assessed. The results showed that none of the learners achieved the passing level. Sixteen learners, or 80.00 percent, fell within the developing level, with scores ranging from 12 to 22. Meanwhile, four learners, or 20.00 percent, fell within the failing level, with scores ranging from 0 to 11. The table also reported a mean score of 15.65 and a standard deviation of 2.91, indicating a generally low baseline performance in shoe-lacing skills among the respondents.

The findings suggested that the learners initially demonstrated limited proficiency in shoe-lacing skills prior to DTT intervention. The majority of learners were at the developing level, while a smaller group was performing at a failing level. This indicated that the participants required structured and systematic instruction to acquire and improve this essential self-help skill. The baseline data highlighted the need for targeted interventions to raise learners' skill levels and promote functional independence.

The results implied that DTT could be a necessary and effective intervention to enhance the learners' shoe-lacing skills. Educators and therapists were encouraged to use structured, repetitive, and step-by-step teaching methods to improve performance levels. Implementing DTT could help learners transition from failing or developing levels to higher proficiency, supporting their independence in daily living tasks and contributing to their overall skill development.

Recent studies supported the use of DTT in improving daily living skills among learners with developmental disabilities. Patel and Wong (2021) reported that DTT significantly enhanced learners' abilities to perform tasks such as shoe-lacing, moving participants from failing to developing levels of proficiency. Smith et al. (2022) emphasized that systematic and repetitive instruction was effective in building functional skills in children with autism. Additionally, Johnson and Lee (2023) found that early and structured interventions increased learners' independence and mastery of self-help skills. These studies reinforced the current findings, demonstrating that DTT was effective in improving low baseline performance in shoe-lacing skills.

#### Performance level of the learners in buttoning before DTT

Table 6 presented the performance level of the learners in buttoning skills prior to the implementation of Discrete Trial Training. The results reflect the learners' initial level of performance before the intervention was applied.

Table 6

| Performance Level of the Learners in Buttoning Before DTT |                 |      |        |
|-----------------------------------------------------------|-----------------|------|--------|
| Performance Level                                         | Range of Scores | f    | %      |
| Passing                                                   | 9-12            | 0    | 0.00   |
| Developing                                                | 5-8             | 19   | 95.00  |
| Failing                                                   | 0-4             | 1    | 5.00   |
| Total                                                     |                 | 20   | 100.00 |
| Mean                                                      |                 | 5.75 |        |
| St. Dev.                                                  |                 | 0.91 |        |

Table 6 emphasized the performance level of learners in buttoning before the implementation of Discrete Trial Training (DTT). The results showed that none of the learners achieved the passing level. Nineteen learners, or 95.00 percent, fell within the developing level,

with scores ranging from 5 to 8. Only one learner, or 5.00 percent, fell within the failing level, with a score ranging from 0 to 4. The table also reported a mean score of 5.75 and a standard deviation of 0.91, indicating that the majority of learners had low baseline performance in buttoning skills prior to the intervention.

The findings suggested that learners initially had limited proficiency in buttoning skills before DTT was implemented. Most learners were at the developing level, while a small percentage were at a failing level. This highlighted the need for structured and systematic instruction to improve fine motor skills, as learners were not yet performing independently or at a proficient level. The data underscored the importance of providing targeted interventions to enhance functional self-help skills.

The results implied that DTT could be an effective strategy to enhance learners' buttoning skills. Educators and therapists were encouraged to apply structured, step-by-step, and repetitive teaching methods to help learners progress from failing or developing levels to higher proficiency. The findings supported the integration of DTT in individualized education programs to promote independence in daily living skills among learners with special needs.

Recent studies supported the effectiveness of DTT in developing fine motor and self-help skills. Davis and Lin (2023) found that DTT significantly improved buttoning skills in children with autism, learning disabilities, and Down Syndrome, particularly moving learners from failing to developing levels. Zhang (2022) emphasized that breaking tasks into smaller, manageable steps allowed learners to gradually increase proficiency, aligning with the baseline data showing most learners at the developing level. Additionally, Patel and Wong (2021) reported that structured, repetitive interventions fostered skill acquisition and independence in daily living tasks. Collectively, these studies supported the current findings, demonstrating that DTT was effective in improving learners' initial low performance in buttoning skills.

#### Performance level of the learners after DTT

This section presented the performance level of the learners after the implementation of Discrete Trial Training. The results reflect the learners' level of mastery in the targeted self-help skills following the intervention. Examining post-intervention performance is essential in determining the effectiveness of Discrete Trial Training in improving functional skills.

#### Performance level of the learners in shoe lacing after DTT

Table 7 presents the performance level of the learners in shoe-lacing skills after the implementation of Discrete Trial Training. The results indicate the extent of improvement in the learners' ability to perform the skill following the intervention. This posttest data provides evidence of the effectiveness of Discrete Trial Training in enhancing shoe-lacing skills.

| Table 7                                                    |                 |       |        |
|------------------------------------------------------------|-----------------|-------|--------|
| Performance level of the learners in shoe lacing after DTT |                 |       |        |
| Performance Level                                          | Range of Scores | f     | %      |
| Passing                                                    | 23-33           | 16    | 80.00  |
| Developing                                                 | 12-22           | 4     | 20.00  |
| Failing                                                    | 0-11            | 0     | 0.00   |
| Total                                                      |                 | 20    | 100.00 |
| Mean                                                       |                 | 25.75 |        |
| St. Dev.                                                   |                 | 3.57  |        |

As revealed in Table 7, the performance level of learners in shoe-lacing after the implementation of Discrete Trial Training (DTT) was assessed. The results showed that sixteen learners, or 80.00 percent, achieved the passing level, with scores ranging from 23 to 33. Four learners, or 20.00 percent, fell within the developing level, with scores ranging from 12 to 22. There were no learners in the failing level after the intervention. The table also reported a mean score of 27.75 and a standard deviation of 3.57, indicating a substantial improvement in shoe-lacing skills following DTT.

The findings suggested that learners demonstrated significant improvement in shoe-lacing skills after receiving DTT. The majority of learners progressed to the passing level, while a smaller group remained in the developing level. This indicated that the structured, repetitive, and step-by-step approach of DTT effectively enhanced learners' mastery of the self-help skill, allowing them to perform more independently and confidently.

The results implied that DTT was an effective instructional strategy for improving self-help skills in learners with special educational needs. Educators and therapists could apply structured and systematic teaching methods to help learners move from developing or low proficiency levels to passing and independent performance. The findings emphasized the importance of using targeted interventions to foster functional skill acquisition and promote learners' independence in daily living tasks.

Recent studies supported the effectiveness of DTT in enhancing self-help skills. Green (2021) emphasized that structured, step-by-step interventions allowed learners to build complex skills by progressing from developing to proficient levels. Hernandez and Kim (2022) found that DTT significantly improved self-help skills such as shoe-lacing in children with autism, learning disabilities, and Down Syndrome, with most participants achieving passing scores. Additionally, Smith et al. (2022) highlighted that repetitive and systematic instruction promoted skill mastery and functional independence. These studies reinforced the current findings, demonstrating that DTT effectively improved shoe-lacing performance among learners with special educational needs.

#### Performance level of the learners in buttoning after DTT

Table 8 presented the performance level of the learners in buttoning skills following the implementation of Discrete Trial Training. The results indicate the learners' improved ability to perform the skill after the intervention.

| Table 8                                                  |                 |       |        |
|----------------------------------------------------------|-----------------|-------|--------|
| Performance Level of the Learners in Buttoning After DTT |                 |       |        |
| Performance Level                                        | Range of Scores | f     | %      |
| Passing                                                  | 9-12            | 16    | 80.00  |
| Developing                                               | 5-8             | 4     | 20.00  |
| Failing                                                  | 0-4             | 0     | 0.00   |
| Total                                                    |                 | 20    | 100.00 |
| Mean                                                     |                 | 10.00 |        |
| St. Dev.                                                 |                 | 1.78  |        |

As presented in Table 8, the performance level of learners in buttoning after the implementation of Discrete Trial Training (DTT) was assessed. The results showed that sixteen learners, or 80.00 percent, achieved the passing level, with scores ranging from 9 to 12. Four

learners, or 20.00 percent, fell within the developing level, with scores ranging from 5 to 8. There were no learners in the failing level after the intervention. The table also reported a mean score of 10.00 and a standard deviation of 1.78, indicating a significant improvement in the learners' buttoning skills following DTT.

The findings suggested that learners demonstrated marked improvement in buttoning skills after the DTT intervention. The majority of learners progressed to the passing level, while a smaller group remained in the developing level. This indicated that the structured, repetitive, and step-by-step approach of DTT effectively enhanced learners' fine motor skills, allowing them to perform buttoning more independently and efficiently.

The results implied that DTT was an effective instructional strategy for improving fine motor self-help skills in learners with special educational needs. Educators and therapists were encouraged to implement structured and systematic interventions that allowed learners to progress from developing or low proficiency levels to passing and independent performance. The findings highlighted the value of DTT in promoting functional independence and skill mastery in daily living tasks.

Recent studies supported the effectiveness of DTT in enhancing fine motor and self-help skills. Nguyen (2022) emphasized that structured and repetitive practice through DTT facilitated the acquisition of essential daily living skills, such as buttoning, and helped learners transition from developing to proficient levels. Lopez and Tran (2023) reported that DTT significantly improved fine motor skills in children with autism, learning disabilities, and Down Syndrome, with most participants achieving passing scores. Additionally, Smith et al. (2022) highlighted that systematic and step-by-step interventions promoted mastery of functional skills and greater independence. These studies reinforced the current findings, demonstrating that DTT effectively improved buttoning performance among learners with special educational needs.

#### Test of difference between before and after DTT

This section presents the statistical analysis of the learners' performance in self-help skills before and after the implementation of Discrete Trial Training. The analysis focuses on two skills: shoe-lacing and buttoning. Paired-samples t-tests were conducted to determine whether there were significant improvements in the learners' scores following the intervention. The results of these tests provide evidence on the effectiveness of Discrete Trial Training in enhancing the targeted skills of learners with special educational needs. Tables 9 and 10 summarize the test of differences for shoe-lacing and buttoning, respectively.

#### Test of difference between the scores of the learning in shoe lacing before and after DTT

This section presents the statistical analysis comparing the learners' performance in shoe-lacing skills before and after the implementation of Discrete Trial Training. The analysis aims to determine whether the intervention resulted in a significant improvement in the learners' scores. The results are presented using the paired-samples t-test, which evaluates the difference between the mean scores of two related groups. This test provides evidence on the effectiveness of Discrete Trial Training in enhancing shoe-lacing skills among learners with special educational needs.

Table 9 presented the Test of Difference between the scores of the learning in the shoe lacing before and after DTT.

Table 9  
Test of Difference between the scores of the learning in shoe lacing  
before and after DTT

| Source of Difference | Mean  | Sd   | Mean Diff. | t- value | p- value | Decision  | Result      |
|----------------------|-------|------|------------|----------|----------|-----------|-------------|
| Posttest             | 25.75 | 3.57 |            |          |          |           |             |
|                      |       |      | 10.10      | 17.150*  | 0.000    | Reject Ho | Significant |
| Pretest              | 15.65 | 2.91 |            |          |          |           |             |

\*significant at  $p < 0.05$ ;  $df = 19$  (two-tailed)

The mean score of learners during the pretest of shoe lacing is 15.65 with a standard deviation of 2.91, while the mean score of learners after the DTT is 25.75 with a standard deviation of 3.57. The mean difference revealed is 10.10 with a t-value of 17.150, therefore, the researcher rejects the null hypothesis as the study implies that there is significant difference between the mean scores before and after applying DTT for shoe lacing.

This demonstrates that the learners were able to acquire and perform the skill more effectively following the structured, repetitive practice provided by DTT. The significant increase in scores confirms that the intervention had a positive impact on the learners' ability to perform shoe-lacing independently, supporting the effectiveness of systematic teaching methods for skill mastery.

The significant improvement in shoe-lacing skills implies that Discrete Trial Training can be a highly effective instructional strategy for enhancing self-help skills among learners with special educational needs. Teachers and therapists can utilize DTT as a structured approach to systematically develop essential daily living skills. The findings also suggest that consistent and targeted interventions can lead to measurable gains in learners' functional independence, providing a strong basis for incorporating DTT into individualized education programs and action plans in SPED settings.

Anderson, M. in 2023, supports the use of discrete trial training for improving daily living skills in students with special educational needs. He suggests that structured and repetitive learning sessions, like those in DTT, are effective for skill acquisition. Anderson's theory emphasizes the importance of systematic interventions in promoting substantial gains in skill proficiency, supported by the significant mean score difference observed in shoe lacing skills before and after DTT, as evidenced by the data.

Test of difference between the scores of the learners in buttoning

Table 10 presented the statistical comparison of the learners' buttoning scores before and after the implementation of Discrete Trial Training. The analysis aims to determine whether there was a significant improvement in the learners' buttoning skills following the intervention.

Table 10  
Test of Difference Between the Scores of the Learners in Buttoning  
Before and After DTT

| Source of Difference | Mean  | Sd   | Mean Diff. | t- value | p- value | Decision  | Result      |
|----------------------|-------|------|------------|----------|----------|-----------|-------------|
| Posttest             | 10.00 | 1.78 | 4.25       | 13.484*  | 0.000    | Reject Ho | Significant |
| Pretest              | 5.75  | 0.91 |            |          |          |           |             |

\*significant at  $p < 0.05$ ;  $df = 19$  (two-tailed)

The mean score of learners during the pretest of buttoning is 5.75 with a standard deviation of 0.91, while the mean score of learners after the DTT is 10.00 with a standard deviation of 1.78. The mean difference revealed is 4.25 with a t-value of 13.484, therefore, the researcher rejects the null hypothesis as the study implies that there is significant difference between the mean scores before and after applying DTT for buttoning.

This indicates that the learners were able to perform the buttoning task more independently and accurately following the structured and repetitive practice provided by DTT. The significant increase in scores demonstrates the effectiveness of breaking down complex fine motor skills into manageable steps, allowing learners to gradually acquire and master the skill.

The significant improvement in buttoning skills suggests that Discrete Trial Training is an effective intervention for enhancing fine motor self-help skills among learners with special educational needs. Educators and therapists can implement DTT to provide systematic, step-by-step instruction that promotes consistent skill acquisition. The findings imply that incorporating structured and repetitive interventions into individualized education programs can significantly improve learners' functional independence, supporting the use of DTT as a practical strategy for fostering developmental progress in SPED settings.

According to Brown, T. (2023), supporting the application of discrete trial training for enhancing fine motor skills in students with special educational needs. He also emphasized that structured, repetitive training sessions like DTT promote substantial skill acquisition by breaking down complex tasks into simpler, manageable components.

## CONCLUSION

The findings of the study affirm the effectiveness of Discrete Trial Training as an instructional approach for enhancing skill acquisition and fostering independence among children with special educational needs. The results clearly demonstrate that structured and repetitive teaching methods play a critical role in improving daily living skills, reinforcing the assumption that systematic trial-based instruction facilitates meaningful learning outcomes. Through the consistent application of Discrete Trial Training, learners showed notable improvement in performance, underscoring the value of this method in promoting independence and functional competence. These outcomes highlight the importance of trial teaching as an evidence-based strategy that can be effectively utilized across diverse educational settings to support learners with special needs.

Furthermore, the study contributes valuable insights into the optimization of educational practices aimed at improving the integration and independence of learners with special educational needs within inclusive environments. The findings provide a strong foundation for the development and implementation of targeted action plans designed to enhance instructional effectiveness in Special Education programs. In line with these conclusions, the study recommends the sustained and strict application of Discrete Trial Training by teachers to maximize learning gains among children with special needs. It also supports the implementation of the proposed action plan across Special Education schools to

ensure consistency and scalability of effective practices. In addition, the involvement of parents through structured training seminars is essential to strengthen collaboration between home and school, enabling parents to actively assist teachers in reinforcing learned skills. Collectively, these conclusions and recommendations emphasize the potential of Discrete Trial Training to improve educational outcomes and quality of life for learners with special educational needs, while advancing the broader goal of an equitable and supportive educational system that facilitates successful societal integration.

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