

A Quasi Experiment Of The Effect Of Scaffolding And Gender On Self-Help Skills Of Pupils With Intellectual Disability

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Abstract

There may be differences in the development and level of self-help skills of pupils with intellectual disability (ID) that are influenced by some factors. Feeding, dressing, toileting, and self-hygiene skills are essential for independent daily living. In this study, scaffolding and gender effects were examined on the self-help skills of participants. The participants of this study were a group of students with intellectual disability from two special schools in Ibadan, Nigeria, who participated in a quasi-experimental study of pre-test, post-test, and control group study. A total of 17 pupils were purposively selected and randomly assigned to either the scaffolding or control group (N = 17, male = 7, female = 10, mean age range = 11-15 years). Participants in the control group received a placebo, while those in the experimental group underwent 24 scaffolding sessions over eight weeks. A self-developed self-help skills rating scale was used to assess the participants before and after the intervention. According to the analysis of covariance, there was no statistically significant difference between the results of both groups before and after the test. Self-help skills were not significantly affected by participants' gender. Based on the present study's findings, alternative teaching strategies should be adopted by teachers, caregivers, and parents of pupils with intellectual disability to enhance their self-help skills.

Keywords: Intellectual disability, gender, scaffolding, self-help skills.

Introduction

Independent living requires the ability to cater for oneself. The ability to care for oneself without the help of others is known as a self-help

skill and is an essential part of daily life. This ability is crucial to the overall development of a child, as it dictates how much a child can successfully participate in some activities in school. Self-help skills are paramount, as they contribute to an individual's self-worth and dignity. Self-help skills are unique techniques or sets of skills that can be used at home or in the community to address present and future challenges (Reynold & Zupanic, 2011). Individuals acquire independence and responsibility through these skills. In addition to brushing teeth, dressing, laundry, eating and preparing food, money, transportation, time and home management, recreation, personal care, and hygiene skills are also important (Friend, 2008).

Self-help skills are a set of abilities that ensures the independent functionality of a child their environment (Volkmar & Wiesner, 2009). Children depend on adults in their immediate environment for their total care. These adults are saddled with the responsibility of feeding, cleaning and dressing their children. However, as the child develops, he gradually assumes responsibility for his care. As defined by King (2010), self-help skills include assisting children in developing their independence and participating in activities that facilitate this process. Social acceptance and healthy interactions with others are also influenced by self-help skills (Anderson et al., 2007; Scheuermann & Webber, 2002). A child's first ten years of life is crucial for developing self-help skills (Anderson et al., 2007). In addition, King clarified that children acquire skills in the process of growing up, such as observing personal hygiene, dressing themselves, and **independently using the restroom**. Each activity enabled them to live independently in their environment through self-help skills.

Individuals with ID have significantly impaired self-help skills owing to adaptive functioning and cognitive limitations (Chawarska & Volkmar, 2005; Shea & Mesibov, 2005). According to Montessori (1967), the first educational influence on a child should aim to **guide** the child towards independence. In many cases, children with ID can learn self-help skills relatively quickly when taught in a way that focuses on their strengths (not their weaknesses). A small amount of social interaction and concrete thinking are required to learn self-help skills (Anderson et al., 2007). Engaging in predictable routines in everyday life is less challenging for children when they learn and acquire these essential skills early on. Self-help skills can be introduced and practised individually in line with a child's development. Before moving on to another skill, each skill should have been thoroughly acquired and

established. Independent living and proper social integration require various self-help skills (Playconnect, 2022).

Developing self-help skills in the early stages of **transitioning** from dependence to independence is extremely important. Individuals can define it as the skills that enable them to care for their bodily needs without relying on others. Proficiency in self-feeding, toileting, dressing, grooming, and personal hygiene is essential for achieving any degree of normalcy (Westling & Murden, 1978). A child's well-being depends on mastering crucial daily living skills in order to become more independent, socially active, and self-sufficient. Despite taking the time to acquire specific skills, completing challenging tasks and acquiring such skills can increase children self-confidence. A child's ability and independence increase with each new self-help skill acquired (Connectability, 2022). Nevertheless, children with disabilities have difficulty in performing these skills for various reasons. To live as independently as possible, they must acquire these skills.

According to Rudy (2021), Persons with disabilities often need additional assistance to develop their self-help skills. Activities taught to children are essential in everyday life. The consensus is that people with disabilities lack the necessary self-help skills to succeed in school. It may be more difficult for children with special needs to learn some of these skills for various reasons. There are times when developmental delays prevent children from acquiring such skills on time. Development of imitation skills may be difficult for children with special needs. The learning process for some children with special needs may take longer than others or may be different from the learning process for others. Other children may be physically unable to perform specific skills because of physical anomalies. Teaching life skills should be individualized according to the abilities of each child with special needs (Berman, 2022).

Literature Review

Scaffolding instruction and self-help skills of pupils with ID

For decades, scaffolding has been used as an instructional strategy to help students perform better in school. Based on retreating support, Ertmer and Cennamo (1995) concluded that scaffolding effectively enhanced students' self-reliance. Past achievements have been documented, and instructors use the strategy consciously or unconsciously. A scaffold is an instructional tool, strategy, or guide

that supports students in achieving greater comprehension levels than would otherwise be possible without such support (Saye & Brush, 2002). Understanding the significance of scaffolding has become problematic because its meanings have expanded so much (Pea, 2004). Learners' efforts should be constrained when using a learning scaffold, relevant features should be emphasized, and advanced solutions or approaches should be shown.

In an experiment by Chang, Chen, and Sung (2002), participants in the scaffold treatment comprehended and summarized text better than their counterparts in other groups. According to Simons and Klein (2007), scaffolding significantly impacts the achievement levels of students when they are engaged in problem-based learning. Students who were scaffolded optionally or required performed on one of the two segments of the group project significantly better than those who did not scaffold. Using the scaffolding strategy, students in the College of Education scored significantly better than those taught using conventional approaches to peace education (Awodun, 2019). Scaffolding in the classroom has been shown to significantly improve student achievement (Van de Pol et al., 2015). A study by Ibritam, Udofia, and Onweh (2015) examined how scaffolding and demonstrations affect students' ability to lay blocks and concrete in technical colleges. In the results, scaffolding instructional strategies and demonstration methods did not produce significantly different mean achievement scores.

Gender and Self-Help Skills of Pupils with ID

Gender originated from the Latin word "genus", which means "kind". It is seen as a biological distinction between males and females. Traditionally, gender describes the differences between males and females (New World Encyclopedia, 2021). Many believe that psychological gender differences are biologically determined and significant, accounting for their fascination with the idea for centuries (Jäncke, 2018). Women and men have socially constructed characteristics known as gender, while biological characteristics are known as sex (World Health Organization (WHO), 2022). Adigun et al. (2015) suggested that gender encompasses the physical, psychological, and behavioural attributes that differentiate feminine and masculine groups (females and males).

The influence of gender on learners' academic performance has always been controversial because different studies have produced

different conclusions. A significant impact of gender on learners' achievement was found in some studies. There were some reports that gender had no effect. In studies conducted by Mechling (2008), Bozkurt and Gursel (2009), they all reported that gender did not have a significant interaction effect on treatment in their studies. A study by Kimura and Harshman (1983) showed that males performed better on spatial and mathematical tests, whereas females performed better on verbal tests. Studies revealed that men and women have much more in common than previously thought regarding cognitive abilities and emotions (Hyde, 2014; Miller & Halpern, 2014). Motor performance is influenced by gender, particularly in the measurement of throwing velocity and throwing distance, which is more skewed towards men (Jäncke, 2018)

Dabbagh and Khajehpour (2011) found gender differences in variables examined by their study. Specifically, girls demonstrated greater internal control, using time management, motivation, and anxiety management techniques, and scored better in the literature. By looking at the overall performance of students, Mwingi (2014) noted that male students performed significantly better than their female counterparts. Academic achievement among college-going students did not differ significantly by gender (Goni et al., 2015). People are born either female or male, but they become women and men as they grow up. This learned behaviour determines gender identity and gender roles.

The influence of gender on pupils with ID acquisition of self-help skills has not received much attention. Several studies have been conducted over the past few decades, and the majority concluded that gender does influence students' performance; Gilliam (2005), Jackson and Moore (2008), Mayuri and Bhat (2010), Abdi (2010), Diprete and Jennings (2011), Gomes and Peirera (2014). On the other hand, however, some studies, such as Fabunmi (2004), Dania (2014) and Ohanele (2017), concluded that gender is not a determinant of students' performance. This study examines how scaffolding and gender affect the acquisition of self-help skills and their relation to academic performance based on the controversial belief that gender may affect academic performance.

Methodology

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. There is no significant main effect of treatment (scaffolding instruction) on the self-help skills of pupils with ID.
2. There is no significant main effect of gender on the self-help skills of pupils with ID.

The research design of this study adopted a pre-test, post-test, control group, quasi experimental design. The type of research design was used to determine the cause and effect of the intervention (Scaffolding) on the participants.

Experimental Group 1: (E1) $O_1 X_1 O_3$

Control Group 1: (E1) $O_2 O_5$

Where:

O_1 and O_2 are the pre-test scores for the experimental and control groups, respectively.

O_3 and O_4 are the post-test scores for the experimental and control groups, respectively.

X_1 depicts the experimental group's treatment (scaffolding).

Participants

There were seventeen participants with ID in the study. T special schools were chosen as part of a multi-stage sampling method so that the geographical coverage of the Ibadan metropolis, Oyo State, would be reflected. Based on a psychologist's assessment, pupils with ID were selected using purposive sampling. S and C represent the treatment groups to which participants were randomly assigned. Nine pupils with ID were selected in school S (4 males; 5 females; mean age = 12.6), while eight were selected in school C (4 males; 4 females; mean age = 13.1). School S participants received scaffolding, while School C participants received a placebo.

Instrumentation

Slosson Intelligence Test- Revised (2005)

The researcher used the Slosson intelligence test, a brief individual intelligence test designed to evaluate the intelligence quotient of individuals aged four (4) and above. The initial development of the test was done by Richard Lawrence Slosson Jr. (1910-1970). Although this test is foreign, it has been adapted to suit African pupils by Oduolowo (1998) and Oyundoyin (2004). A test-retest method by Adediran (2011) found a content validity of 0.86, which is a high score. The reliability coefficient (KR-20) by age level ranges from 0.88 to 0.97, indicating that the Slosson intelligence test validity and utility are well established. 97 (Jacob et al., 2021). Participants in this study were

administered this test to determine whether they had ID. This test also helps in determining the intelligence quotient (IQ) of participants.

Scaffolding Instructional package on self-help skills

The researcher developed the treatment package, scaffolding instruction on self-help skills. Essentially, the guide was a step-by-step procedure that was to be followed to implement the experimental treatment package (Scaffolding Instruction). For the treatment group, scaffolding instruction consisted of twenty-four 45-minute sessions. Participants in the control group were not given any interventions and did not attend scaffolding instruction sessions.

Self-help skills rating scale: Researcher's version

The self-help skills rating scale was developed by the researcher for the purpose of measuring the level acquisition of self-help skill of pupils with ID. The rating scale includes three sessions, the first session is to obtain the biography information about the participants, the second session is a "yes or no" 10 items, where the participant is expected to give either positive or negative responses. The last session is a multiple choice 20 items, which requires the respondent to give an answer that seems appropriate to them.

Ethical Consideration

Participants' parents were informed of the study's purpose and asked to meet with the researcher on a specific day. As required by research ethics, the researcher met with the participant's parents and explained the consent form to them using the language of the community by the teacher, who also serves as the research assistant. Each parent completed the consent form and signed it once adequate understanding had been achieved. The profiles and responses of participants were kept confidential. Sessions in the study were not recorded, which was a major limitation.

Data analysis

We used Analysis of Covariance (ANCOVA) to analyze the data from this study, with a significance level of 0.05.

Results

Table 1. Summary of ANCOVA showing effect of treatment and gender on self-help skills of pupils with ID

Tests of Between-Subjects Effects

Dependent Variable: post

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	18.424 ^a	5	3.685	.597	.703
Intercept	32.316	1	32.316	5.235	.041
Pre	8.674	1	8.674	1.405	.259
Treatment	3.214	1	3.214	.521	.484
Gender	2.284	2	1.142	.185	.833
Error	74.076	12	6.173		
Total	13377.000	18			
Corrected Total	92.500	17			

a. R Squared = .199 (Adjusted R Squared = -.134)

H₀₁: There is no significant main effect of treatment on self-help skills with ID.

According to Table 1, treatment did not significantly enhance the self-help skills of study participants [F (1,12) = .521; p > 0.05; sum of square = 3.214]. Therefore, the null hypothesis was not accepted. For self-help skills, there were no significant differences between the groups with ID.

H₀₂: There is no significant main effect of gender on self-help skills with ID.

There was no significant difference in self-help skills between male and female pupils with ID [F (2,12) = .185; p > 0.05; the sum of square = 2.284]. The result shows that gender could not account for variance in the self-help skills of pupils with ID. Therefore, the null hypothesis was accepted.

Discussion of findings

Based on the results of the present study, scaffolding had no significant effect on enhancing participants' self-skills. The results are inconsistent with previous findings that cognitive skills are significantly associated with scaffolding. The use of contingent scaffolding strategies has been linked to improved cognitive abilities in infants (Lowe et al., 2014), classroom competence (Stright et al.,

2009), early reading concepts (Bae et al., 2014), as well as decoding and reading comprehension. According to Awodun (2019), students taught using scaffolding exhibit a significantly higher performance in peace education than those taught conventionally. It is important to note that the findings of this study align with those of Ibritam, Udofia, and Onweh (2015), who concluded that scaffolding instructional strategy students did not dramatically differ from instructional demonstration students regarding their achievement scores.

This variation may result from the ineffectiveness of step-by-step instruction based on praxis. This ability involves thinking of and planning new motor actions. Sensory processing, neuromuscular control, and motor control skills must be adequate to achieve functional praxis (Cook, 1991). Cognitive abilities also affect a person's ability to conceptualize, sequence, and perform new motor skills (Tomchek, 2001). Individuals with ID often have problems with praxis. People with ID may also have motor planning issues related to motor skills (Tomchek, 2001). Learning self-help skills using scaffolding instructional strategies may also present a challenge for children with ID due to poor language and socialization skills. The approval of parents, friends, and teachers is reported to motivate typically developing children to learn new self-help skills (Anderson et al., 2007). The treatment in the present study did not significantly affect participants' self-help skills. Because they do not seek social reinforcement, pupils with ID are less motivated to practice and learn these skills.

The second hypothesis stated that there will be no significant main effect of gender on the self-help skills of pupils with ID. The result revealed that there was no significant effect of gender on the self-help skills of pupils with ID, and this result corroborate with the findings of Mechling (2008), Bozkurt and Gursel (2009) who all reported that gender did not have significant interaction effect on treatment in their studies. Goni et al. (2015) found that academic performance did not differ significantly by gender among college students in a study conducted among college-going students.

Gender had no significant main effect on the self-help skills of pupils with ID. Consequently, the null hypothesis cannot be rejected. The present finding is inconsistent with previous submissions (Jacob et al., 2021; Margetts, 2000). This study's findings also contradict those of Mwingi (2014), who found that male students performed better than female students in overall performance. Based on this finding, self-

help skills were not affected by participants' gender after completing the treatment package. For the Nigerian context, the result was unexpected since studies suggest that girls typically possess higher competence, whereas boys are more likely to exhibit behavioural problems (Jacob et al., 2021; Keane & Calkins, 2004).

Conclusions

From the findings of the study, it was discovered that scaffolding instruction did not have any significant effect on the self-help skills of pupils with ID, and other teaching methodology should be adopted to enhance the self-help skills of pupils with ID. The result also revealed that gender did not have an effect on the self-help skills, so gender of the pupils should not be given a wide priority before in teaching self-help skills. The lack of an experimental effect in this study was informative because it contrasts with a growing body of experimental work.

Since scaffolding did not significantly change self-help skills for children with intellectual disabilities, its use should be discouraged. Due to the strategy's ineffectiveness, the self-help skills of children with ID cannot be developed. Participants may need help following instructions and learning independent skills due to their intellectual level. Teachers should consider using other strategies to help children develop self-help skills since scaffolding is not an effective approach. One limitation of the study was the small sample size. The number of future study participants should increase for a more generalizable result. School settings also posed a limitation because of the unpredictability of many factors. In addition, disruptive pupil behaviour (often requiring the removal of school staff to address), and scheduled off-days, other factors may contribute to these problems.

Another limitation of the study is that only one person assessed each participant's self-help skills-related behaviour. A comparison of the observed behaviour's agreement or disagreement could not be made. Since scaffolding did not significantly change self-help skills for children with intellectual disabilities, its use should be discouraged. Due to the strategy's ineffectiveness, the self-help skills of children with ID cannot be developed. Participants may need help following instructions and learning independent skills due to their intellectual level. Teachers should consider using other strategies to help children develop self-help skills since scaffolding is not an effective approach. One limitation of the study was the small sample size.

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Recommendations

The stakeholder community should encourage alternative approaches to developing pupils' self-help skills. The strategies did not enhance the self-help skills of participants. In this manner, learning becomes concrete, auditory, and visual. In addition to working toward improving the acquisition of self-help skills of pupils with ID, parents and caregivers of pupils with intellectual disabilities should make it a point of duty to work towards this improvement since a successful independent life depends on the ability to manage these daily living skills. The proper course needs to be channelled for pupils with intellectual disabilities who have limitations in acquiring self-help skills with the collaboration of parents, teachers, policymakers, regular teachers, and special education teachers. It is vital to help students with ID learn self-help skills.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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