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Effectiveness of an educational and training program in developing self-independence skills in school-aged children with intellectual disabilities

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Abstract

This study aimed to examine the effectiveness of an educational training program in developing self-independence skills among educable children with intellectual disabilities.

A quasi-experimental research design was employed. The sample consisted of six (06) educable children with intellectual disabilities enrolled at the Psycho-Pedagogical Center for Children with Intellectual Disabilities in Sig (commune in Wilaya of Mascara). The participants were selected using purposive sampling. The Self-Care Skills Scale developed by Soumia Kacem and Nadia Boudiaf Ben Zammouch (2017) was administered, in addition to a proposed educational training program designed to enhance self-independence skills among educable children with intellectual disabilities. The findings indicated that the proposed educational training program was effective in improving self-independence skills among the study participants.

Keywords: Educational-training program; self-independence skills; Educable children with intellectual disabilities.

Introduction:

Recent years have witnessed an increasing trend in modern societies toward caring for and rehabilitating special groups, particularly children with intellectual disabilities, as providing support for this group is no longer merely a voluntary act, but has become a rights-based



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and educational commitment aimed at moving from a perspective of passive care based on dependency to a perspective of empowerment based on autonomy and preparing individuals to rely on themselves.

This has led international organizations concerned with human rights to call for the need to pay attention to and care for this group, and to work toward providing support for them by providing the necessary means to help them reach a stage of self-independence and integrate successfully and effectively into society (Saeed, 2002, p. 16).

The main difficulty faced by children with intellectual disabilities, regardless of their different degrees and categories, whether they are educable, trainable, or dependent, lies in the clear deficiency in their adaptive behavior, their lack of self-independence, as well as their dependence on others and their inability to rely on themselves in carrying out daily life activities. From this particular standpoint, training and rehabilitation emerge as an imperative necessity for achieving behavioral and social adjustment among these children and developing their ability to meet their requirements and satisfy their needs, activating appropriate environmental factors and educational means contributes to equipping them with the necessary adaptive and social behavioral skills (Muammariyah, p. 148).

If we focus specifically on children with mild intellectual disabilities who are able to attend school, we find that this requires great care and considerable attention through the development and design of advanced educational methods, means, and strategies that ensure effective intervention in their areas of deficiency and make use of their remaining abilities and potential. This is achieved through the development of standardized educational and training programs that are precisely designed and whose competence and quality are no less than those of the programs provided to their typically developing peers, with the aim of achieving school and social integration.

It is indisputable that these children are in urgent need of specific behavioral and adaptive skills that enhance their abilities, which justifies our current need to develop organized educational and training programs that address their areas of disability and deficiency and help them acquire the highest possible degree of independence in their daily lives. By the same token, we find numerous studies conducted on different skills, with the aim either of measuring the degree of self-reliance among children with intellectual disabilities or developing a program to enhance a particular skill. For instance, the study by Obaidi and Zaarour (2020) examined the effectiveness of a proposed behavioral training program for developing self-care and social skills among children with Down syndrome (moderate intellectual disability). Its results showed that the program was effective in developing hygiene skills, awareness of general appearance, self-care skills, waiting for one's turn, and respect for the classroom (Muammariyah, p. 50).

Furthermore, we find the study by Hayat and Miloud (2022) on self-reliance among children with special needs, which concluded that the level of self-reliance among these children was high. The results also showed that there were no statistically significant differences between the mean scores of self-reliance attributable to the gender variable, while statistically

significant differences were found attributable to the nature of the disability variable, in favor of children with mild intellectual disabilities (Muammariyah, p. 127).

We also find a study by Hadahouda and Al-Machrafi that examined the effect of a proposed recreational program on developing some social skills among children with intellectual disabilities who are "educable." Its results demonstrated the importance of practicing recreational activities as an applied field for acquiring adaptive behavior and developing psychological skills among children with intellectual disabilities, and that the recreational program had a positive effect on improving some social skills, including communication, participation, social etiquette, and dealing with money and purchasing (Muammariyah, p. 30).

In consideration of this, the development of educational and training programs to develop skills among children with intellectual disabilities, particularly those who are able to attend school, becomes a fundamental responsibility of the specialists responsible for caring for this group. Since the success of such programs depends largely on training methods, techniques, and strategies that lead to results that contribute to equipping the child with these skills through continuous training in them.

Considered from this angle, the researcher develops a proposed educational and training program to develop self-reliance skills (personal hygiene skills, eating skills, and dressing skills) among children with intellectual disabilities who are able to attend school. The program includes numerous educational and training activities that may help translate these skills into sustainable educational behavior. Thus, achieving a high-quality and specialized service for this group.

Hence, the following two questions can be raised:

- Is the educational and training program effective in developing self-reliance skills among children with intellectual disabilities who are able to attend school?
- Is there a statistically significant difference between the pre-test and post-test measurements among children with intellectual disabilities who are able to attend school after the application of the program?

Study Hypothesis:

- The educational and training program is effective in developing self-reliance skills among children with intellectual disabilities who are able to attend school.
- There is a statistically significant difference between the pre-test and post-test measurements among children with intellectual disabilities who are able to attend school after the application of the program.

Study Objectives:

- Developing an educational and training program to develop self-reliance skills among children with intellectual disabilities who are able to attend school.

- Verifying the effectiveness of the proposed educational and training program in developing self-reliance skills among children with intellectual disabilities who are able to attend school.
- Determining whether there is a statistically significant difference between the pre-test and post-test measurements among children with intellectual disabilities who are able to attend school after the application of the program.

Study Importance:

- The study provides a training program for developing self-reliance skills among children with intellectual disabilities who are able to attend school, which can be implemented in the field.
- Helping professionals working in the field of special education to deal with children with intellectual disabilities in the category of those who are able to attend school.

Procedural Concepts:

- Educational-training program: It is a program consisting of a set of educational and pedagogical activities aimed at developing self-reliance skills among children with intellectual disabilities in the category of those who are able to attend school. The program consists of twelve (12) sessions, each session having an (operational) objective, a duration ranging between [30–45] minutes, techniques, and materials.
- self-independence skills: They are the basic self-reliance skills, including: personal hygiene skills, eating skills, and dressing skills. They are measured by the total score obtained by the child on the scale used, which ranges between [0–144] points.
- Educable children with intellectual disabilities: They are children attending the Psycho-Pedagogical Center for Children with Intellectual Disabilities in Bisseg, diagnosed as having intellectual disabilities, with IQ scores ranging between (55–75) and ages ranging between [08–10] years.

Study Limits:

Every field study has spatial, temporal, and human limitations that it depends on in its application, and the limitations of our study are as follows:

Spatial Limits:

The study was conducted at the Psycho-Pedagogical Center for Mentally Handicapped Children in Sig, Mascara Province.

Temporal Limits:

The study was conducted during the second and third trimesters of the 2023/2024 academic year.

Human Limits:

The study was conducted on a purposive sample of six (06) children diagnosed as mentally disabled but capable of schooling, registered at the Psycho-Pedagogical Center for Mentally Disabled Children, during the 2023/2024 school year, aged between [08–10] years.

Theoretical Framework:

Intellectual disabilities: The notion of intellectual disability varies according to the perspectives of many researchers, and below we will present some definitions: The World Health Organization (1992) defines intellectual disability as a condition of arrested or incomplete mental development, characterized particularly by impairment in skills that emerge during the developmental stages and affect the overall level of intelligence, i.e., cognitive, linguistic, motor, and social abilities. Further, the disability may occur with or without another psychological or physical disorder and manifests before the age of eighteen (Shoshani Obeidi, 2020, p. 12).

The American Association of Intellectual and Developmental Disabilities (AAIDD) defines intellectual disability as a disability characterized by significant limitations in both intellectual functioning and adaptive behavior, expressed through practical, social, and conceptual adaptive skills, and appearing before the age of eighteen (Al-Omari, 2014, p. 42).

Edgar Doll's definition is considered one of the earliest definitions of intellectual disability. He defined a person with intellectual disability as one who is unable to adapt socially, unable to practice any occupation, unable to manage the affairs of life without others, and below normal individuals in mental ability (intelligence). The disability appears from birth or at an early age and remains present when the individual reaches adulthood (Qasim, 2017, p. 243).

Kreiman Bdeir (2004) defines it as a fundamental impairment in mental functions, this disability is characterized by significant deficits in mental functions and intelligence quotient, and this impairment is related to the activities performed by the individual. It affects two major mental functions, namely: mental communication and personal care, as well as social functioning and health. This definition indicates that mental functions are below the normal level of an average child (Qasim, 2017, p. 242).

Based on the above, we conclude that intellectual disability results from arrested or incomplete mental development, which in turn affects the general level of intelligence compared with typically developing individuals, not exceeding 70 points on an intelligence test. It results in impairment in functional intellectual performance, accompanied by a disturbance in the child's adaptive behavior before the age of eighteen.

Intellectual disabilities Characteristics:

Intellectual and Ideological Characteristics: Roger (2001) states that individuals with intellectual disabilities experience considerable difficulty in acquiring skills and knowledge due to deficits in attention span, short-term memory, long-term memory, and perception, and they experience considerable difficulty in carrying out simple tasks (Madin, 2018, p. 120).

Linguistic Characteristics: Mental development does not progress independently of cognitive abilities, as children with intellectual disabilities suffer from general deficiencies in language development and specific difficulties in using explanatory language. The level of language performance among children with intellectual disabilities is considerably lower than that of their typically developing peers (Ibrahim, 2019, p. 120).

Social and Emotional Characteristics: Hisham Ibrahim (2009) indicates that the emotions of children with intellectual disabilities are usually unstable and disturbed. Besides, they have a low capacity for social adaptation and an inability to establish positive relationships with others, as well as deficiencies in verbal or non-verbal communication skills and an inability to adapt to the environment in which they live (Ahmed, 2006, p. 1073).

Physical, emotional and motional characteristics:

Children with intellectual disabilities go through the same stages as typically developing children in their physical development; nevertheless, they are characterized by slower physical growth, smaller size and weight, reduced brain volume, abnormalities in the size and shape of the skull, and abnormalities affecting the tongue, teeth, and limbs. Resultantly, they experience delayed motor development, the presence of motor problems, and weakness in motor skills compared with their typically developing peers. Considered from angle, Kirk believes that individuals with intellectual disabilities have considerably more visual and auditory impairments than typically developing individuals (Ahmed, 2006, p. 1074).

Mental disability classification:

There are several classifications of intellectual disability, including the psychological classification and the educational classification, which are the two classifications adopted in this study.

1. American Association on Mental Retardation (AAMR) classification (psychological classification):

The American Association on Mental Retardation based its classification on intelligence quotient (IQ), according to which individuals with intellectual disabilities can be divided into four (04) categories based on the results of intelligence tests, such as the Stanford-Binet Test and the Wechsler Test. Grossman (1983) identified these classifications as follows:

- **Mild intellectual disability:** Individuals in this category obtain an IQ score ranging between [55–70] on the intelligence test.
- **Moderate intellectual disability:** Individuals in this category obtain an IQ score ranging between [40–55] on the intelligence test.
- **Severe intellectual disability:** Individuals in this category obtain an IQ score ranging between [25–40] on the intelligence test.
- **Profound intellectual disability:** Individuals in this category obtain a very low IQ score of less than 25 on the intelligence test (Qasim, 2017, p. 243).

Educational classification:

Educational classification is based on learning as a standard criterion, that is, the extent to which a child with an intellectual disability is capable of learning and training, as well as their educational needs and the curricula appropriate for each category. It includes three categories as follows (Muammariyah, p. 154):

- **Educable category:** Their IQ ranges between [55–75] on the intelligence scale. They are able to learn some academic skills such as reading, writing, and arithmetic.

- **Trainable category:** Their IQ ranges between [25–55]. Individuals in this category are unable to learn academic skills, unlike basic skills such as self-care, dressing, and performing simple tasks that require a low level of intelligence.
- **Dependent category:** These are individuals with severe or profound intellectual disabilities. They are unable to learn even basic skills and therefore require continuous supervision and care (Qasim, 2017, pp. 243-244).

Definition of Self-Reliance Skills: Independent behavior is one of the manifestations of social adaptive behavior in the Adaptive Behavior Scale (ABS), which was developed by the American Association on Mental Retardation in 1966 by Henry Leland and others, and was published in its final form in 1974. It consists of self-care skills, including eating, using the toilet, hygiene, and clothing care (Muammariyah, p. 155). Susen Al-Halabi (2005) also notes that self-care skills include dressing, using a knife and spoon, bathing, combing the hair, brushing the teeth, and all other basic needs related to daily life (Malal, 2022, p. 123).

In this study, self-reliance skills consist of the following self-care skills: eating with a spoon, washing hands with soap and water, and brushing teeth with a toothbrush and toothpaste.

Fields of Self-Reliance Skills:

Qasim and Boudiaf Ben Zaamouch (2017) also divide self-care skills into four areas, with each area comprising several skills, as illustrated below:

Table No. (01): Areas of Self-Care

Fields of self-care	Skills of self-care
Cleanliness	- Washing hands, face and teeth - Showering - Nails clipping - Taking care of external appearance
Using the bathroom	- Using toilet paper and pouring water - Taking off clothes and putting it back on
Eating food	- Using tableware - Eating food with no aid - Table manners
General appearance	- Wearing and taking off clothes - Taking off shoes

Educational and Training Programs:

Definition of the Educational and Training Program:

The training program is defined as a set of integrated, successive, and interconnected activities that are provided over a specified period of time and work toward achieving the general objective of the program (Hamarid, 2022, p. 99).

The Theoretical Foundations for Developing the Training Program:

The field of caring for children with intellectual disabilities is one in which behavioral therapy (behavior modification) methods are primarily used to modify the behavior of these children, address their inappropriate behaviors, and help them acquire new behaviors. Among the most commonly used approaches are those based on the theory of operant conditioning (B. F. Skinner), in addition to other approaches based on the theory of classical conditioning (Pavlov) and social learning theory (Bandura). In light of these findings, we will present the most important learning theories in the field of behavior modification for children with intellectual disabilities, as follows:

- **Classical Conditioning Theory:** The value of this theory lies in explaining some forms of simple learning among both typically developing children and children with intellectual disabilities that do not require extensive mental processes. For this type of learning to occur, it is sufficient for specific stimuli to be associated with specific responses, followed by the process of pairing between those stimuli. The applications of this theory include teaching children with intellectual disabilities many forms of behavior, such as daily living skills, reading skills, and numerical skills, as well as learning to inhibit undesirable responses (Al-Saadi, 2005, p. 104).

We can benefit from this theory by applying the principles underlying classical conditioning, using the principle of the conditioned reflex to establish desirable behavioral habits and extinguish undesirable behavioral habits. Extinction occurs when the unconditioned stimulus is no longer paired with the conditioned stimulus, that is, without reinforcement. With repeated application of this process several times, the conditioned response becomes extinguished, meaning that its occurrence decreases until it disappears.

- **Operant Behavioral Theory:** This theory is considered one of the most widely used learning theories in the field of intellectual disability. The theory developed through the work of the American psychologist Skinner, and among the most ambitious efforts to apply this theory in the field of intellectual disability were the works of Bijou (Pijou), who attempted to explain intellectual disability in terms of operant structures (Al-Saadi, 2005, pp. 104-106). Macmillan and Kazdin mention a number of procedures that represent the application of this theory to modifying the behavior of children with intellectual disabilities, as follows:

- Facilitating the teaching of educational tasks to children with intellectual disabilities by identifying appropriate reinforcers for them, whereby the teacher works to identify the appropriate reinforcer for each individual child.
- Facilitating the teaching of educational tasks to children with intellectual disabilities by breaking them down into smaller educational tasks through the use of task analysis, and then reinforcing each component until the child with an intellectual disability is able to learn the educational task as a whole (Al-Saadi, 2005, p. 106).
- Facilitating the teaching of educational tasks to children with intellectual disabilities through the use of verbal or social reinforcement techniques. These include attracting the child's attention to the educational task and making the child feel that they are the focus of attention by calling them by name and using eye contact between the teacher and the child.

- Facilitating the teaching of certain skills to children with intellectual disabilities by using behavioral chaining, which involves linking responses together to form the final behavior. Kazdin and Macmillan mention a number of daily living skills learned through this method, such as dressing skills, academic skills, and purchasing skills (Chouchani Abidi, 2017, p. 77).

- **Social Learning Theory:** This theory focuses on the importance of social interaction in the learning process, as society, through its various institutions, works to reinforce the behavior exhibited by the individual. One of the prominent features of social learning theory is the clear role it assigns to the organization of behavior through cognitive processes such as attention, memory, imagination, and thinking, which have the ability to influence behavior. Bandura indicated that there are major determinants that organize behavior: stimuli, feedback, reinforcement or punishment, and cognitive processes (Shoshani Obeidi, 2020, p. 78).

This theory can be applied in the field of intellectual disability to build the social environment in which care is provided. The special education teacher should provide every opportunity for the child with an intellectual disability to succeed in performing tasks, however simple they may be, in order to provide the child with an experience of success and reinforce it. This encourages the child to engage in other forms of successful behavior later on (Shoshani Obeidi, 2020, p. 78).

Based on the foregoing, we conclude that learning theories are closely related to the field of behavior modification. Both learning and behavior modification have the same objective, namely, bringing about a change in the individual's behavior by establishing desirable forms of behavior, modifying undesirable forms of behavior, and working to reduce their rate of occurrence. Moreover, these two processes maintenance and change should be carried out according to specific foundations, principles, and strategies.

Methodological Procedures of the Study:

Exploratory Study: The exploratory study is conducted as an initial stage preceding the main study and the actual application of the tools used in the study, with the aim of:

- Measuring the level of self-care skills among children with intellectual disabilities who are able to attend school.
- Determining the degree of deficiency among them and consequently working to develop these skills.
- Designing an educational and training program to develop self-reliance skills among children with intellectual disabilities who are able to attend school.

Place and Duration of the Exploratory Study:

The exploratory study was conducted at the Psycho-Pedagogical Center for Children with Intellectual Disabilities in the Municipality of Sig, Mascara Province, from 08/01/2024 to 03/03/2024.

Exploratory Study Sample:

The exploratory study was conducted on a purposive sample of eight (08) children with intellectual disabilities who were able to attend school and were enrolled at the Psycho-Pedagogical Center for Children with Intellectual Disabilities in Sig during the 2023/2024 academic year. Their ages ranged between [08–10] years.

Exploratory Study Instruments:

1. Self-Care Skills Scale for Children with Intellectual Disabilities by Soumia Qasim and Nadia Boudiaf Ben Zaamouch (2017):

Description of the Scale: The scale aims to identify self-care skills among children with intellectual disabilities, it covers the basic dimensions of independence targeted in our study. The scale consists of two sections:

Section One:

Includes the child's personal information and data, namely: first name, surname, gender, age, and degree of intellectual disability.

Section Two:

Includes the questionnaire items, consisting of thirty-six (36) statements distributed across two domains, with each domain comprising a group of statements:

Domain One: Independence functions related to food and clothing, comprising items 01 to 25.

Domain Two: Independence functions related to general safety and hygiene, comprising items 26 to 36.

Scoring the Scale:

The scale is answered using five (05) responses corresponding to five (05) ratings, as follows:

Without any assistance: four (04) points.

Independently but with difficulty: three (03) points.

With verbal prompts: two (02) points.

With direct assistance: one (01) point.

Unable to perform the behavior: zero (0) points (Qasim, 2017, p. 248).

Psychometric Properties of the Scale:

In this study, we relied on the psychometric properties calculated by the researchers Soumia Qasim and Nadia Boudiaf Ben Zaamouch (2017), as follows:

- **Content Validity:** The scale, in its preliminary form, was presented to five (05) reviewers consisting of professors and specialists in psychology and special education. Some items were excluded, others were modified, and some response alternatives were also modified. This indicates that the instrument has content validity (Qasim, 2017, p. 248).

- **Discriminant Validity:** For a sample of 30 children, a comparison was made between the two extreme groups (upper and lower) at a rate of 33%, using the t-test. The calculated t value was (08.34), which is greater than the tabulated t value of (02.87), with (08) degrees of freedom and a significance level of (0.01). on that account, the scale is considered valid (Qasim, 2017, p. 248).

- **Reliability:**

Split-Half Method: The correlation coefficient between the individuals' scores on the two parts (odd and even items) was calculated. The correlation coefficient before correction was (0.91). After correcting the coefficient using the Spearman-Brown formula, it reached (0.95), which is statistically significant at the (0.01) significance level. This indicates that the scale has a high degree of reliability (Qasim, 2017, p. 249).

Educational and Training Program:

The training program is a set of integrated activities provided over a specified period of time, designed to achieve the general objective of the program, namely: developing self-reliance skills among children with intellectual disabilities who are able to attend school, specifically the skills of eating with a spoon, washing hands with soap and water, and brushing teeth with a toothbrush and toothpaste.

Steps for Developing the Educational and Training Program:

The researcher followed a set of steps in developing the training program for this study, as follows:

- Formulating the general objective and operational objectives of the training program.
- Selecting the content of the program and the necessary training procedures.
- Determining the appropriate training methods and techniques.
- Preparing the necessary educational tools and materials by providing real and tangible tools and materials specific to each skill, which attract the child's attention and facilitate the simulation of reality during the training sessions.
- Determining the duration of program implementation.
- Determining the evaluation methods within the program by using observation checklists specific to each skill. Presenting the program in its preliminary form to professors specializing in psychology and special education at the University of Oran and the National Center for the Training of Specialized Staff, Bir Khadem, Saida Branch, for evaluation. Based on the evaluation results, some motor activities were modified and the session duration was extended to (45) minutes.

Objectives of the Educational and Training Program:

General Objective: The current program aims to develop self-reliance skills among children with intellectual disabilities in the educable category, aged between 08 and 10 years, and to reduce their level of dependency.

Specific Objectives:

- To train children with intellectual disabilities in the educable category on how to eat with a spoon correctly and independently.
- To train children with intellectual disabilities in the educable category on how to wash their hands with soap and water correctly and independently.
- To train children with intellectual disabilities in the educable category on how to brush their teeth with a toothbrush and toothpaste correctly and independently.

Determining the Program Content:

The content of the training program was determined and analyzed using the Task Analysis strategy, which involves analyzing each complex main skill and breaking it down into smaller skills that are translated into sequential motor behaviors that are easier to understand and perform.

Techniques Used in the Training Program:

Emphasis was placed on the most effective behavior modification techniques for children with mild intellectual disabilities, namely:

- **Modeling:** The researcher provides a live model demonstrating how to perform the skill in front of the child so that the child can imitate it.
- **Physical and Verbal Prompting (Fading):** Providing physical assistance by holding the child's hand and verbal assistance through spoken instructions during training.
- **Immediate Positive Reinforcement:** Using tangible reinforcers (candy and stickers) and social reinforcers (applause and praise) immediately after the child correctly performs a step in order to establish independent behavior.
- **Shaping and Chaining:** Reinforcing successive small successes toward the target behavior while gradually withdrawing assistance to achieve independence.

Description of the Educational and Training Program: To implement the training program, its content was organized into twelve (12) sessions distributed over six (06) weeks, at a rate of two sessions per week, with each session lasting between (30–45) minutes. In designing the sessions, consideration was given to progressing from the pre-test and preparation stage to intensive training on the three skills, ending with the post-test. Table No. (02) illustrates this.

Table No. (02): Time and procedural distribution of the program's content

Number of Session minutes	Session Objective (Targeted Skills)	Techniques Used	Materials Used	Session Duration
Session One	Administration of the Self-Care Skills Rating Scale (pre-test).	Direct observation and measurement	The scale	45

Session Two	Explaining the program content, preparing the sample members, and introducing its tools and rules.	Explanation and guidance		45 minutes
Sessions (3–4–5)	Training on eating with a spoon correctly and independently.	Task analysis, modeling, prompting, chaining, reinforcement	Educational pictures; video clips; eating utensils (plate, spoon); personal hygiene materials (water, soap, towel, toothbrush, toothpaste)	30 to 45 minutes per session
Sessions (6–7–8)	Training on washing hands with soap and water correctly and independently.			
Sessions (9–10–11)	Training on brushing teeth with a toothbrush and toothpaste correctly and independently.			
Session Twelve	Administration of the Self-Care Skills Rating Scale (post-test).	Direct observation and measurement	The scale	45 minutes

Main Study:

Place and Duration of the Main Study:

The main study was conducted at the Psycho-Pedagogical Center for Children with Intellectual Disabilities in the Municipality of Sig, Mascara Province, from 05/04/2024 to 30/06/2024.

Method of the Main Study:

In light of the study and the objectives to be achieved, we adopted the quasi-experimental method, as it is the most appropriate method for studying the effectiveness of a training program in developing self-reliance skills among children with intellectual disabilities. The experimental method includes several designs, and we selected the one-group design, in which we measured performance before and after the experiment.

Main Study Sample:

The main study was conducted on a purposive sample consisting of six (06) children with intellectual disabilities who were able to attend school and were enrolled at the Psycho-Pedagogical Center for Children with Intellectual Disabilities in Sig during the 2023/2024 academic year. Their ages ranged between [08–10] years.

Table No. (03): Characteristics of the Sample Members

Kids	Age	IQ
H A	10 years	69
G Y	10 years	67
B KH	9 years	60
H A	9 years	58
B S	8 years	64
N K	8 years	60

Main Study Instruments:

We used the instruments that were previously described in the exploratory study, namely:

- The Self-Care Skills Scale for Children with Intellectual Disabilities by Soumia Qasim and Nadia Boudiaf Ben Zaamouch (2017).
- An educational and training program for developing self-reliance skills.

Statistical Methods Used:

To process the data and test the hypotheses of the current study, the Statistical Package for the Social Sciences (SPSS, Version 26) was used. Given the small sample size of the study ($N = 6$), the researcher relied on the following non-parametric statistical methods:

- **Wilcoxon Signed-Rank Test:** To determine the significance of differences between the mean ranks of the sample members' scores in the pre-test and post-test measurements for each of the three skills and for the scale as a whole.
- **Correlation coefficient (r):** To calculate the effect size and determine the practical effectiveness of the educational and training program.

Presentation, Interpretation, and Discussion of the Research Hypothesis Results:

The hypothesis states that there is a statistically significant difference between the pre-test and post-test measurements among children with intellectual disabilities who are able to attend school after the application of the program, in favor of the post-test measurement.

Table No. (04): Results of the Hypothesis

Variable	Ranks	Number (N)	Mean Rank	Sum of Ranks	Z Value	Significance Level	Effect Size	Direction
Self-Care Skills Scale as a Whole	Negative Ranks	0	0.00	0.00	-2.201	0.028	0.635	Statistically significant in favor of the post-test measurement
	Positive Ranks	6	3.50	21.00				
	Ties	0						

It is evident from the table that there are statistically significant differences between the pre-test and post-test measurements for the members of the sample. The calculated Z value was (-2.201), with a statistical significance level of (0.028), which is less than the significance level of (0.05).

The rank table also shows that all ranks were in favor of the post-test measurement, with six (6) positive ranks, a total rank sum of (21.00), and a mean rank of (3.50), while there were no negative ranks or tied cases. This confirms that the scores of the sample members improved after the implementation of the program. Accordingly, we accept the research hypothesis, which states that: there is a statistically significant difference between the pre-test and post-test measurements among children with intellectual disabilities who are able to attend school after the implementation of the program, in favor of the post-test measurement.

To determine the practical effectiveness of the training program, the effect size was calculated using the correlation coefficient (r), which reached (0.635). According to Cohen's statistical criteria, this value indicates a very strong effect size, confirming the effectiveness of the educational and training program in developing self-reliance skills among children with intellectual disabilities who are able to attend school.

These results are consistent with the findings of other studies, including the study by **Obaidi and Daif (2017)**, which found statistically significant differences between the pre-test, post-test, and follow-up measurements on the Self-Care Skills Rating Scale among children with Down syndrome and moderate intellectual disabilities, in favor of the post-test and follow-up measurements. The study by **Abdelkader (2018)** also found statistically significant differences between the mean ranks of the experimental group's scores in the pre-test and post-test measurements, both in the total score and in the dimensions of the self-care scale, in favor of the post-test measurement. Similarly, the study by **Khadija and Safia (2022)**

concluded that the proposed training program was effective in developing self-care skills, specifically dressing and undressing, among children with autism.

The researcher interprets the results of the study by suggesting that the nature of the content of the training program, which was appropriate to the children's abilities and capacities, led to significant positive changes in the development of their self-reliance skills. This improvement can be attributed to the training received by the sample members and its effectiveness in helping the children acquire new behaviors related to self-care skills, namely: eating with a spoon, washing hands with soap and water, and brushing teeth with a toothbrush and toothpaste.

The improvement in the results of the sample members can also be attributed to the systematic use of behavioral techniques, including task analysis, modeling, physical and verbal prompting, shaping and chaining, and immediate reinforcement, which were used in the training program. The variety of techniques, along with their appropriate selection and implementation, contributed to achieving the objectives for which the program was designed. This was particularly effective when combined with educational materials such as illustrative pictures and video clips, which made the training process interactive and enjoyable. This is supported by the study of Abdelhamid (2019), which emphasized the importance of systematically integrating task analysis, prompting, modeling, immediate reinforcement, and chaining techniques in the development of training programs.

The researcher's reliance primarily on the task analysis technique in training the children in self-reliance skills—eating with a spoon, washing hands with soap and water, and brushing teeth with a toothbrush and toothpaste—also contributed to the results. This technique, which involves breaking down a complex skill into sequential behavioral and procedural steps, made it easier for the children to understand and master each skill. In addition, immediate positive reinforcement, both tangible and social, played a central role in establishing the targeted independent behavior and increasing the children's motivation to repeat it in their daily routines.

The results of the study may also be attributed to the specific nature and small size of the sample, which enabled the researcher to provide intensive individual attention to each child. During the sessions, the researcher focused on controlling stimuli, reinforcing positive behaviors, and conducting immediate evaluation and adjustment according to each child's response.

Conclusion

The current study concluded by demonstrating the effectiveness of the educational and training program in developing self-reliance skills among children with intellectual disabilities who are able to attend school. The results obtained showed a statistically significant difference between the pre-test and post-test measurements in favor of the post-test measurement in the three targeted skills: eating with a spoon, washing hands, and brushing teeth with a toothbrush and toothpaste. This finding confirms that simplifying skills through the task analysis strategy, combined with appropriate behavioral techniques, is a suitable

methodological approach for improving self-reliance and, consequently, achieving school and social integration for this group.

Based on the findings of the current study, the researcher presents the following suggestions and recommendations:

- The necessity of early intervention and early care for children with intellectual disabilities who are able to attend school, with the aim of equipping them with self-care skills and developing their independent behavior.
- Adopting training programs based on the task analysis strategy within the official curricula designed for children with intellectual disabilities.
- Conducting further studies on training programs aimed at developing independent behavior across various skills.
- Providing parental guidance in the area of self-reliance.
- The necessity of involving parents in the implementation of training programs.
- Encouraging researchers to study and expand research on methods and approaches for teaching self-reliance skills and developing this field so that it becomes accessible to interested parents and educators.

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