RESEARCH ARTICLE

Developing some language skills (reading and writing) through the multisensory strategy of VACT for people with mild Mental Retardation: A field study at the Psychological Pedagogical Center of "Schol Atallah"

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Abstract

The study aimed to reveal the effectiveness of the use of the multi-sensory strategy (VAKT) in the development of some language skills, specifically reading and writing skills, in children with mild mental retardation, the study sample consisted of (9) cases between the ages of (10-15) years and their mental ages between (7-11)) year, at the Psychological Pedagogical Center " Choul Atallah" in the city of Laghouat. The study relied on the quasi-experimental method, and the language skills scale (reading and writing) for people with mild mental retardation was used, prepared by Mr. A. (2010), in addition to the orthophonic budget, interview and observation, and the application of the multi-sensory training program prepared by Bousaba (2020).

After the implementation of the program, the differences between the pre- and post-measurements in language skills were calculated. The results resulted in the following:

-There are statistically significant differences in the average scores between the pre- and post-measurement in favor of the post-measurement in language skills in general, which indicates the effectiveness of the program in improving children's performance.

-The results showed that there were statistically significant differences between the average scores of children in the cardiac and dimensional measurements in reading skill, in favor of the telemetry, which means that the program improved the level of children's performance in reading.

On the other hand, there were no statistically significant differences between the average scores of children in the pre - and post-measurements in writing skill. This means that the program did not significantly improve this skill.

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Introduction:

The problem of mental retardation in children is one of the important educational and psychological issues, and it is one of the topics that has received great attention from special education scholars, psychologists, sociologists, and mental health since ancient times.

It is known that children belonging to this category have limited mental abilities that do not allow them to take full advantage of educational activities like their peers from normal children, and they are always in need of special care that helps them invest and develop the available abilities as much as possible. Therefore, it has become necessary to think about building educational programs and innovating new educational methods and techniques through training and appropriate educational accompaniment.

Mental retardation is a multifaceted and multidimensional problem, which calls for integrated intervention and cooperation between the various actors in the field of special education, especially when it comes to the cauldron of childhood, where the importance of early intervention is doubled.

It is worth mentioning that a child suffering from mental retardation – especially of the simple type – is a child capable of learning and training, so it is necessary to focus on developing various skills, especially language skills, due to their importance in communication and social interaction, provided that this is done in the early years of childhood, with the participation of all concerned parties, starting from the family, through the specialized centers, and up to the community as a whole.

Children with mild mental retardation may have some acquired skills, but they need to be developed and developed through training and education, by developing appropriate educational training programs that rely on modern strategies that help them overcome their difficulties, especially at the level of language.

In this context, our study came to highlight the effectiveness of the multi-sensory strategy (**VAKT**) in developing some language skills in children with mild intellectual disabilities who face difficulties in this aspect.

1. The Problem :

Intellectual disability (mental retardation) is one of the important issues in the social and medical fields, due to its direct impact on the individual's ability to acquire cognitive, social, educational, and language skills.

There is a group of mentally retarded people whose performance and level are lower than their normal peers, and this difference is obvious, which leads to delays in performing vital functions, and the mentally retarded child has a low IQ, and appears from birth to adulthood and is accompanied by a delay in maturity, failure in education, or difficulty in social adjustment, and all of this has a reason, and Trade Gold defined mental retardation as a state of incomplete mental development to the point that makes the individual unable to adapt with his environment, and ordinary people so that he needs additional services than they need. **(Sakadi, 2015, p. 8)**

Al-Khatib defines disability as characterized by a marked decline in both mental performance and adaptive behavior, represented by conceptual, social, adaptive and educational skills, which appear before the individual reaches the age of eighteen, and includes conceptual skills in language, reading and writing. **(Ta'allah, 2018, p. 177)**

Language is an essential means of communication between individuals and society, as it represents the main tool by which human beings express their thoughts and feelings, and contributes to building relationships and exchanging knowledge, which makes it a basis for human communication.

Through language development, the child can acquire concepts, ideas, and habits in the social environment so that they are able to communicate with their verbal and non-verbal types, and communication depends on the speech and nervous system so that they enable them to communicate ideas to other people, and language communication in any language is done through four basic skills: listening, speaking, reading, and writing, as each skill represents importance in itself and importance for other skills, and skills that occur through the process of language and written communication These mental processes involved in these skills are a common denominator

among them, in addition to the fact that language is their field of practice, so their teaching must be viewed in an integrated and interdependent manner. (Al-Tamimi, B.T., p. 276)

Therefore, language education for mentally disabled children is very important that requires a combination of general maturity factors and physiological and mental development that enables language understanding in addition to the ability to operate the speech organs, which requires knowing all the appropriate strategies to prepare language situations that enable the child to learn the language and understand the meaning of various linguistic semantics. (Ashour, 2019, p. 519)

Language skills are one of the most affected aspects of children with intellectual disabilities, due to their importance in communication, learning, and social adjustment. Previous studies, such as those of Sakadi and Louisa (2015), Facon et al. (1998), Awatef (2026), and Al-Sayed (2010) have shown that the language abilities of this group are often limited, especially in verbal expression, sentence formation, and storytelling. This has led many researchers to design training programs aimed at developing and improving these skills.

Ashoor's study (2019) showed the effectiveness of computer use in improving language skills and social behavior in intellectually disabled children integrated into schools, while the study of Sulaimani et al. (2018) revealed the effectiveness of an attention-enhancing program in developing language skills in intellectually disabled children. Awatef's study (2016) also indicated The level of language skills in this group can be high if the supportive environment is available, and the study of Sakadi (2015) confirmed the importance of special educational training in improving the reading, listening, and matching skills of mentally retarded children.

Programs based on activating all the learner's senses are one of the most effective modern methods in developing educational skills, known as the "multi-sensory strategy". This strategy includes several methods, including the Fernald's method, which focuses on learning words through stories without focusing on phonetics, the Gilligenham method, which focuses on proper pronunciation and phonics using different senses, and the VAKT method, which employs sight, hearing, touch, and movement in the learning process, which enhances the learners' language and cognitive acquisition.

With regard to this strategy, it has proven to be effective in improving the language and reading performance of other groups with learning disabilities, as in the studies of Bousaba (2020), Al-Juhani (2017), and Al-Hadbani et al. (2016), which raises the question of the possibility of employing this strategy with children with intellectual disabilities to develop their language skills.

Hence, there is a need to study the effectiveness of the multi-sensory strategy, specifically in the development of language skills in mentally retarded children, and accordingly, we pose the following main question:

- Are there any statistically significant differences between the average scores of individuals in the pre- and post-measurement of language skills attributed to the application of the multi-sensory strategy?"

This question is divided into the following partial questions:

- Are there any statistically significant differences between the average scores of individuals in the pre- and post-reading measurement attributed to the application of the multi-sensory strategy?
- Are there any statistically significant differences between the average scores of individuals in the pre- and post-measurement of writing attributable to the application of the multi-sensory strategy?

2. Hypotheses:

- There are statistically significant differences between the average scores of individuals in the pre- and post-measurement of language skills attributed to the application of the multisensory strategy.
- Are there any statistically significant differences between the average scores of individuals in the pre- and post-measurement of reading attributable to the application of the multi-sensory strategy?
- There are statistically significant differences between the average scores of individuals in the pre- and post-measurement of writing attributed to the application of the multi-sensory strategy.

3. Importance of the study:

The importance of the present study is evident in its treatment of the subject of language skills in children with mild mental retardation, as it is the main means of communication, learning, social interaction and adaptation to the environment. Given that many studies have shown a clear weakness in language skills in this group, the search for ways to develop them is crucial.

This study seeks to employ the multi-sensory strategy, which has proven to be effective in different educational groups. Hence, the application of this strategy to the category of children with mild intellectual disabilities may

contribute to providing more effective methods that can be used in private institutions. It can also benefit the specialist in language and communication diseases, whether in his work or research.

4. Objectives of the study:

The aim of this study is to:

- Knowing the level of some language skills (reading and writing) in children with mild mental retardation.
- Reveal the role of multisensory **strategies (VAKT)** in the development of language skills in children with mild mental retardation.
- Providing children with mild mental retardation with some language skills (reading and writing).

5. Study Terms:

- **Language skills:** These are the four basic skills: listening, speaking, reading, and writing. **(Imran B.T., p. 313)**
- **Multi-sensory strategy:** It is a method that stimulates the senses to teach students problem-solving skills, benefit from non-verbal thinking skills, and understand relationships between them. **(Al-Nafaie, p. 16, 2019)**
- **Mental retardation:** In 1973, the **British Association of Mental Retardation issued a** definition that it is a state of stunted, delayed or incomplete mental development that occurs early due to genetic, pathological or environmental factors to a lack of intelligence and a lack of an individual's level of performance in the areas of maturity or education and compatibility. **(Al-Ma'idi, 2008, p. 20)**

6. Procedural Definitions:

Language Skills: Procedurally defined as the score obtained by a child with mild intellectual disability in the Language Skills Scale prepared by **Al-Sayed et al. (2010),** which includes the dimensions of reading and writing, which is represented in the child's ability to recognize and read letters, read illustrated and abstract words and sentences, write letters, missing and semicolon words, and form sentences, and performance is considered good if the child reaches 88% or more on the scale.

Training Program Based on Multi-Sensory Strategy:

It is procedurally defined as an educational program prepared by the researcher **Bousaba (2020),** and it relies on the activation of the four senses (sight, hearing, touch, and movement) to train children in reading and writing skills.

In this study, it was applied to children with mild intellectual disabilities through multiple sensory activities, using sensory means, cards, pictures, and magic sand, at the rate of two sessions a day for a week.

Procedurally defined as a training program prepared by the researcher **Bousaba (2020),** which relies on activating the senses to train children in reading and writing skills and using tangible means (e.g., fruits), pictures, magic sand... Etc.

People with mild mental retardation:

They are procedurally defined as the children who are cared for at the Pedagogy Psychological Center in the city of Laghouat, whose chronological ages range from 10 to 15 years and their mental ages are from 08 to 10, where their IQ ranges between 55-70 degrees.

Field aspect of the study:

1. **Study Methodology: The** quasi-experimental approach **was adopted** in this study, as it is the most appropriate for its nature, which aims to know the level of language skills in children with mild intellectual disabilities, and to measure the effectiveness **of a training program based on the Multi-Sensory Strategy (VAKT)** in improving these skills.

2. Temporal and spatial framework:

- **Time frame:** The study will be implemented from April 11, 2021 to June 01, 2021.
- **Spatial Framework:** The study was conducted at the level of the Psycho-Pedagogical Center for the Mentally Handicapped (01) **(Shoal Atallah)** in the city of Laghouat, which includes 11 sections dedicated to mentally

disabled children classified according to mental age and tribal achievements, the ages of children in the center range from 3 to 18 years, and the total number of children benefiting from the center's services is about 100.

3. **Study sample:** The study sample consisted of (9) cases of male children between the ages of 10 and 15 years while the mental age was between 7 and 10 years.

The sample was selected in a deliberate manner, and they were selected according to the following conditions:

- Appropriate mental age.
- The degree of intellectual disability is minor.
- Their ability to learn and train.
- Sufficient information about each case is provided through the Center's files.

4. **Study Tool**

Interview: Semi-guided interview conducted with the specialist

orthophony at the Psycho-Pedagogical Center "Shul Atallah", with the aim of identifying the members of the research sample and collecting accurate information about the cases

- The interview helped to identify the degree of intellectual disability of each child, understand the nature of their intellectual developmental disorder, in addition to knowing the possible causes of this disorder, and how it affects their educational achievements and abilities.

Orthophonic Budget :

The orthophonic budget for each case was used, which is a diagnostic tool through which the orthophonic specialist collects comprehensive information for the purpose of evaluation and treatment, **and included the following:**

- Personal data about the condition.
- Illness and family history.
- Data on disability.
- Developmental history of the condition (sensory-motor, linguistic, cognitive)
- Behavioral and adaptive aspects.

Note:

Direct observation was adopted with children with mild intellectual disabilities, with the aim of identifying the level of academic skills in children, collecting a large number of data about children's behavior and response, identifying aspects that require intervention and monitoring repeated mistakes during performance, which helped to adjust the training content and direct it towards their actual needs.

Language Skills Scale for Children with Mild Mental Disabilities:

Referring to the literature and previous studies in the field of measuring language skills in children with mental disabilities, it was found that there is a dearth of scales to standardize these skills in an integrated way, especially for special groups, and after extensive research, the Language Skills Scale for Children with Mental Disabilities **prepared by** Al-Sayed et al**.(2010) was adopted**.

This scale may be of 3 main dimensions:

- **The first dimension:** listening and conversation skills (13 paragraphs).
- **The second dimension:** the skill of reading 10 paragraphs.
- **The third dimension:** the skill of writing 7 paragraphs.

Since the study aims to develop the skills of reading and writing, the second and third dimensions have been adopted, and the two dimensions include a set of activities to evaluate performance in each skill:

In reading: A child's performance is considered good if he answers nine out of ten paragraphs and the success rate is (90%), and the paragraphs are as follows:

- Alphabet recognition (score is given if 24 out of 28 letters are recognized).
- Reading the alphabet (the score is given if it is read on 24 letters out of 28).
- Identify the missing letter in the word.
- Determine the shape of the letter in the word.
- Read picture words.
- Matching words and images.
- Specify the shape of the character in the image.

- Read abstract words.
- Read illustrated sentences.
- Read abstract sentences.

As for writing: the child's performance is considered good if he answers six of the seven paragraphs, and the success rate is considered (86%). **The paragraphs are as follows:**

- Word Analysis
- Writing the missing letter in the word
- Writing the missing words in the sentence
- Writing punctuated words
- Combining letters to form words
- Writing Dotted Sentences
- Synthesize words to form sentences
- **Scale Application Instructions:**
- Apply the scale individually.
- The scale is applied orally and in written form.
- The child is given three attempts and based on the third response some grade.
- We empty the child's responses on the designated form.
- It is important not to write the grade in front of the child so that it does not affect his performance.
- The scale is stopped if the child gives three wrong answers.

Performance on the scale: In the reading skill, the child is given a score if he answers the paragraph correctly, except for the first paragraph, he is given a score if he recognizes 24 letters out of 28 letters (85%) and practices the letters he did not know.

- In writing, the child is given a grade if he answers the paragraph correctly.

The child's performance is considered good on the scale if the score obtained is (88%), which is (9+6=15, 15×100÷17=88%), and the child is excluded from the sample members.

If the performance is lower (88%), the child needs to be trained at the level where he received lower grades (Al-Sayed et al., 2010, p. 841).

5. Multi-Sensory Training Program:

A training program based on the multi-sensory strategy (Visual, Auditory, Kinesthetic, Tactile) has been adopted, which aims to improve the reading and writing skills of children with mild intellectual disabilities, by activating the senses during learning.

This program was obtained from the researcher Bousaba Aisha in 2020, as part of her doctoral thesis entitled: The Effectiveness of the Multi-Sensory Strategy in Improving the Reading Skills of Dyslexic Students.

Among the objectives of the program are:

- Improve my character recognition and reading skills.
- Improve the child's ability to associate sound with letters.
- Improve the child's ability to write, understand, and relate words to sentences.
- Improve the distinction between letters that are similar in sound and shape.

The structure of the program included three training sessions for each character implemented using the multi-sensory strategy as follows:

1. **Letter recognition:** Using several special means of tangibles, where a tangible element associated with the target letter is used (e.g., an orange for the letter "B"). Then we ask the child what the element is and ask him to touch it, smell it, taste it, and hear its name, so that the child recognizes the color, smell, taste, and texture of the orange, then the word is written on the board and read in a clear voice, extracting the target letter from the word with the repetition of pronunciation, vision, and touch.
2. **Training to recognize the three movements of the letter (opening, damma, and fraction)**: Using several methods, the letter is presented with its three movements. It uses voice and physical gestures to help the child distinguish between the movements.
3. **Tense recognition training (Alef, F, Z):** Using several methods, the letter is presented with its three vowels. It uses voice and physical gestures to help the child distinguish between movements.

1. **The means used in the program:** As for the means used in the program, they were varied to stimulate all the senses, including: a blackboard, magic sand, letter cards, and picture cards, in addition to the use of real things such as seasonal fruits (apricots, oranges, peaches, apples), a cage, a stand, a plane, and emoji stickers.. These methods were simple, easy to use, varied, enjoyable, exciting, and inexpensive, and they are suitable for the ages of this category. Each took 45 minutes and focused on similar letters (S.U., F.Q., Y.Z., I, Z).

A set of activities that rely on the knowledge of fruits or objects through touch, smell and taste were also applied, in addition to activities aimed at the character recognition test such as linking letters and words, recognizing words by analyzing them into sounds, linking words and images, forming words from a set of letters and reading them.

Application Procedures:

- We conducted a survey study to identify the circumstances in which our study will be conducted, and to collect as much information as possible about children with mild mental retardation, and their files were reviewed, and the group consisted of 9 cases, and the children were observed during play, in the restaurant, and during classes with the educators, and the focus was on observing their reading and writing and in order to know the deficiencies in the level of reading and writing skills.
- We applied the pre-measurement using the Language Skills Scale.
- Through the results of the pre-measurement, cases whose results were good on the scale were excluded.
- We applied the program to the target cases and focused on similar letters in which we noticed a problem through the application.

After the end of the program, we performed the telemetry and then compared the results of the pre- and post-measurement and analyzed the results of the study.

6. Statistical Methods Used:

Wilcoxon Test: (W) Labrametric, which is an alternative to the T-test, measures the differences between the average scores of individuals in the language skills test.

2- Percentages: If he obtains a score of (88%), the child is excluded from the sample members, and if he obtains less than (88%), the child needs to be trained at the level in which he obtained lower grades.

3. Repetitions.

7. Presentation of the results of the study:

7.1 Presentation of the results of the pre-measurement of cases:

Table No. (01): Shows the scores of individuals in the language skill scale (reading, writing) for the pre-measurement.

Percentage	Degree in Writing	Degree in Reading	Cases
82%	7	7	Yusuf
76%	7	6	Fathi
82%	6	8	Seif Eddin
94%	7	9	Mohamed
64%	4	7	Saad
58%	5	5	Abd El Nasser
%100	7	10	Miloud
76%	7	6	Al-Taher
%88	7	8	Abd El , Samad

Comment :

The table presents the results of monitoring children's scores on the Language Skills Scale (the two dimensions: reading and writing). Based on the total score (88%) as a criterion for exclusion, it was found that the following cases exceeded the specified threshold and were excluded from undergoing the training program: Abdel Samad 88%, Miloud 100%, and Mohammed 94%.

In the rest of the cases, they showed obvious difficulties in reading and/or writing skills, which necessitated their inclusion in the treatment program. The following is a detailed analysis of their performance:

Yousef (82%): He showed more difficulties in reading than in writing, especially in abstract sentences.

Fathy (76%): Clear confusion between similar letters (S, SH, Y, Z) and difficulty in reading abstract sentences, in writing his concentration was good in tracking words and punctuated sentences. He suffers from pronunciation disorders and distraction, and is often absent.

Saifuddin (82%): He could not read abstract words, and he did not show the ability to write to group words to form sentences.

Saad (64%): The child could not recognize similar letters (i, z, z, y) and failed to read abstract words and sentences, but in terms of writing, his handwriting was very small and overlapping, and he was not able to group words to form a sentence.

Abdel Nasser (58%): recorded the lowest percentage among children, did not succeed in most activities, and was observed to be unfocused, distracted and lethargic, writes words in a reverse way, and does not differentiate between similar letters (F, Q, S, U, I, Z).

Al-Taher (76%) succeeded in knowing all the alphabets, but he did not recognize the missing letter in the word, and he failed to read the words and abstract sentences, while in writing, the results were positive and he got the full mark.

1. Presentation of hypothesis processing results:

Presentation of the results of the general hypothesis:

The general hypothesis states: There are statistically significant differences between the average scores of individuals in the pre- and post-measurement of language skills attributed to the application of the multi-sensory strategy.

Before presenting the results of the hypothesis treatment statistically, we will present a summary of the results of the pre- and post-measurement, for the total score on the reading and writing skills.

Table (02) shows the scores of individuals in the language skills test (reading and writing) for the pre- and post-measurements:

Post test measurement	Pre- test measurement	The number
17	14	Yusuf
16	13	Seif Eddin
15	11	Saad
15	10	AbdEl, Nasser
15	13	Fathi

To address this hypothesis, it was converted to a null hypothesis as follows: there are no significant differences between the average scores of individuals in the pre- and post-measurements, and then to identify the significance of the differences between them by means of Wilcoxon's (*w*) labrabmetric test, one of the alternatives to the T-test showed the average scores of individuals in the language skills test in the pre-measurement and their average scores in the post-measurement, and the data were as shown in the following table:

Table No. (03): Shows the value of w and its statistical significance between the scores of individuals in the pre-measurement and their scores in the post-measurement

Significance Level 0.05	Calculated w value	Arithmetic average	Number of Binaries	Data
The result is statistically significant	2.03-	12.2	05	pre-measurement
		15.6		post-measurement

Comment:

Referring to the tables of the theoretical values of the Wilcoxon test, in front of the number of binaries (n=05), and below the significance level of 0.5, we find that the calculated Wilcoxon value is equal to (W=-2.03), which is a statistical function, which means that the differences between the arithmetic mean of the scores of individuals in the pre-measurement (before their exposure to the multi-sensory program) and the arithmetic average of their

scores in the telemetry (after their exposure to the program) are substantial and statistically significant, in favor of the telemetry, which means that the program has improved the level of performance. Children for language skills (reading and writing). In other words, the training program based on the multi-sensory strategy is effective. Thus, the hypothesis of this research is realized.

Presentation of the results of the first partial hypothesis:

Text of the first partial hypothesis: There are statistically significant differences between the average scores of individuals in the pre- and post-reading measurement attributed to the application of the multi-sensory strategy.

To address this hypothesis, we present the results of the pre- and post-measurement for reading only.

Table (04) shows the scores of individuals in reading in the pre- and post-measurements.

post-measurements	Pre-measurement	The number
10	7	Yusuf
9	8	Seif Eddin
8	7	saad
8	5	Nasser
8	6	Fathi

To address this hypothesis, it was converted to a null hypothesis as follows: There are no significant differences between the average scores of individuals in the pre- and post-measurements, and then to identify the significance of the differences between them by means of the Wilcoxon (*W*) test of Labrametry, one of the alternatives to the t-test between the average scores of individuals in reading in the pre-measurement and their average scores in it in the post-measurement, and the data were as shown in the following table:

Table No. (05) shows the value of w and its statistical significance between the scores of individuals in the pre-measurement and their scores in the post-measurement

Level of 0.05significance	Calculated w value	Arithmetic average	number	Data
The result is statistically significant	2.041-	6.6	05	Pre-measurement
		8.6		post-measurements

Comment: Referring to the tables of the theoretical values of the Wilcoxon test, in front of the number of binaries (n=05), and below the significance level of 0.05, we find that the calculated Wilcoxon value is equal to (-2.041w=), which is a statistical function, which means that the differences between the arithmetic mean of the scores of individuals in the pre-measurement (before their exposure to the multi-sensory program) and the arithmetic average of their scores in the telemetry (after their exposure to the program) are substantial and statistically significant, in favor of the telemetry, which means that the program has Improve children's reading performance, i.e., the multi-sensory strategy training program is effective. Thus, the second hypothesis of this research is realized.

Presentation of the results of the second partial hypothesis:

Text of the second partial hypothesis: There are statistically significant differences between the average scores of individuals in the pre- and post-measurement of writing attributed to the application of the multi-sensory strategy. To address this hypothesis, we present the results of the pre- and post-measurement of writing only.

Table No. (06): Shows the scores of individuals in writing in the pre- and post-measurements

The number	Pre-measurement	post-measurement
7	7	Yusuf
7	6	Seif Eddin

7	4	Saad
7	5	Nasser
7	7	Fathi

To address this hypothesis, it was converted to a null hypothesis as follows: There are no significant differences between the average scores of individuals in the pre- and post-measurements, and then to identify the significance of the differences between them by means of the Wilcoxon (*W*) non-labramymetric test, one of the alternatives to the t-test between the average scores of individuals in the reading test in the pre-measurement and their average scores in it in the post-measurement, and the data were as shown in the following table:

Table No. (07) shows the value of w and its statistical significance between the scores of individuals in the pre-measurement and their scores in the post-measurement

Significance Level 0.05	Calculated w value	Arithmetic average	number	Data
The result is not function	1.604-	5.8	05	Pre-measurement
		7		post-measurement

Comment: Referring to the theoretical values tables of the Wilcoxon test, in front of the number of binaries (n=05), and below the significance level of 0.05, we find that the calculated Wilcoxon value is equal to (-1.604w=), which is not statistically significant, which means that the differences between the arithmetic mean scores of individuals in the pre-measurement (before their exposure to the multi-sensory program) and the arithmetic average of their scores in the post-measurement (after exposure to the program) in writing have no statistical significance. Thus, the third hypothesis of this research was not realized.

3.7 Discussion of the results:

By applying the **Language Skills Scale** (Reading and Writing) during the pre-measurement to a sample of children with mild mental retardation, whose chronological ages range from (10 to 15 years) and their brains are between (7 to 11 years), it was found that these children suffer **from a clear deficiency in language skills**, which was shown by the preliminary results.

Three out of nine cases were **excluded** due to their success rates ranging from 88% to 100%, indicating that they did not need the training program. On the other hand, **five cases underwent the program** due to their low achievement rates (58% - 76%), where it was monitored:

- Difficulties in distinguishing between similar letters.
- Writing in the opposite way.
- Speech disorders and difficulties in pronouncing letters.
- Deficit in reading and writing abstract words.

Following the implementation **of the Multi-Sensory Strategy (VAKT) training program**, which focused on training children in similar letters and reading and writing skills, telemetry was performed to detect the differences between pre- and post-measurement.

The results showed a significant improvement in all five cases. For example, the case of "Abdel Nasser" was 58% in the pre-measurement and he wrote in a reverse way, while the percentage increased to 88% after undergoing the program, which indicates the effectiveness of the VAKT strategy in improving language skills and reducing the number of errors.

It was also noted that the program helped the children to interact positively and be flexible in learning, which prompted the center's management and the pedagogical team to **transfer the five children to the academic achievement department** based on the positive results they achieved.

General Conclusion:

Through this study, we conclude that the multi-sensory program has affected the development of some language skills in the group of mild mental retardation, who are present at the level of the Center for the Mentally Handicapped, and we have reached the following conclusions through the results:

1. General Hypothesis: The training program based on the multi-sensory strategy improved the level of children's performance in language skills (reading and writing) in children with mild mental retardation.
2. The first partial hypothesis: It was proven to be true through the existence of statistically significant differences in the average scores of individuals in the reading skill between the pre-measurement and the post-measurement in favor of the post-measurement.
3. The second partial hypothesis: it was not fulfilled as there were no statistically significant differences between the average scores of individuals in the pre-measurement and the post-measurement in writing skill.

We also conclude that the program to which the children underwent had an impact not only on language skills, but also on other skills such as social skills and adaptation.

Some suggestions can be made to those interested in this field and those in charge of educating and educating special groups, as follows:

- Promoting interest in the methods and programs offered in the field of special education in general and the mentally retarded in particular.
- Conducting studies concerned with the development of educational programs for this category.
- Focus on discovering the strengths of the mentally retarded and pursuing their development.
- Providing a study environment rich in various sensory stimuli.
- Conducting training courses for specialists (orthophonists, psychologists, and educators) on such modern strategies.
- Encouraging researchers and those interested in applying the multi-sensory strategy to other groups.

Conclusion

It is important to employ modern educational strategies based on the activation of the senses, especially for groups with special needs. The results of the study showed that there is a tangible positive effect on improving children's reading skills, while there are no significant differences in writing, which confirms the need to develop and adapt training programs according to the needs of each skill, and the importance of continuous evaluation and the use of various diagnostic tools to follow up on the language development of this group. This type of intervention provides a valuable opportunity for these children to acquire basic communication skills that enhance their independence and social adaptation, hence it is recommended to continue research and experimentation on a wider sample and with a variety of tools, with a focus on integration between the family, specialized institutions, and civil society.

Ultimately, the results of this study represent an important addition to psychopedagogical practices aimed at improving the quality of life of children with mild mental retardation, and open the way for further research and applied efforts in the future.

Statement of conflict

Authors declare that there is no any conflict of interest

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