ASSESSMENT OF THE LEARNING POTENTIAL OF AN ADOLESCENT WITH WILLIANS-BEUREN SYNDROME

AVALIAÇÃO DO POTENCIAL DE APRENDIZAGEM DE UM ADOLESCENTE COM SÍNDROME DE WILLIAMS-BEUREN

EVALUACIÓN DEL POTENCIAL DE APRENDIZAJE DE UN ADOLESCENTE CON SÍNDROME DE WILLIAMS-BEUREN

Rosemeire Quilante AZEVEDO[1]
Regina Maria Ayres de Camargo FREIRE[2]

ABSTRACT: With a view to the learning of special education students, a case study was carried out with an adolescent with Williams-Beuren Syndrome, aiming to identify the effects of the Mediated Learning Experience on the performance of tasks during an assisted assessment, carried out in three phases: pre-test, mediation and post-test, initially using the audibilization test of Golbet (1988) and activities of the Program of Instrumental Enrichment - Basic of Feuerstein (1980), in the mediation phase. Data analysis compared the results of the application of the hearing test before and after the mediation phase, relating them to the table of cognitive functions by Feuerstein (1980). The results show that the teenager showed improvement in the performance of tasks after the mediation, demonstrating that he has a learning potential that can be stimulated, for example, in the cognitive processes of language integration, in the apprehension of meanings and in verbal expression.

KEYWORDS: Qualitative assessment. Special education. School mediation.

RESUMO: *Tendo em vista a aprendizagem dos alunos da educação especial, foi realizado um estudo de caso com um adolescente com Síndrome de Williams-Beuren, visando identificar os efeitos da Experiência de Aprendizagem Mediada no desempenho das tarefas durante uma avaliação assistida, realizada em três fases: pré-teste, mediação e pós-teste, utilizando inicialmente o teste de audibilização de Golbet (1988) e atividades do Programa de Enriquecimento Instrumental - Básico de Feuerstein (1980), na fase de mediação. A análise dos dados comparou os resultados da aplicação do teste de audibilização antes e depois da fase de mediação, relacionando-os com a tabela das funções cognitivas de Feuerstein (1980). Os resultados apontam que o adolescente apresentou melhora no desempenho das tarefas após a mediação, demonstrando que possui um potencial de aprendizagem que pode ser estimulado, por exemplo, nos processos cognitivos de integração da linguagem, na apreensão de significados e na expressão verbal.*

PALAVRAS-CHAVE*: Avaliação qualitativa. Educação especial. Mediação escolar.*

[1] Pontifical Catholic University (PUC), São Paulo – SP – Brazil. Master's degree in The Graduate Studies Program in Speech Therapy. ORCID: https://orcid.org/0000-0001-7657-6418. E-mail: rosequilante@gmail.com
[2] Pontifical Catholic University (PUC), São Paulo – SP – Brazil. Full Professor, Department of Theories and Methods in Speech Therapy and Physiotherapy, Faculty of Humanities and Health. PhD in Psychology of Education (PUC-SP). ORCID: https://orcid.org/0000-0002-6116-6165. E-mail: freireregina@uol.com.br

RESUMEN: *Con miras al aprendizaje de estudiantes de educación especial, se realizó un estudio de caso con un adolescente con Síndrome de Williams-Beuren, con el objetivo de identificar los efectos de la Experiencia de Aprendizaje Mediado en el desempeño de tareas durante una evaluación asistida, realizada en tres fases: preprueba, mediación y posprueba, utilizando inicialmente utilizando la prueba de audición de Golbet (1988) y actividades del Programa de Enriquecimiento Instrumental - Básico de Feuerstein (1980), en la fase de mediación. El análisis de los datos comparó los resultados de la aplicación de la prueba de audición antes y después de la fase de mediación, relacionándolos con la tabla de funciones cognitivas de Feuerstein (1980). Los resultados muestran que el adolescente mostró mejoría en el desempeño de tareas después de la mediación, demostrando que tiene un potencial de aprendizaje que puede ser estimulado, por ejemplo, en los procesos cognitivos de integración del lenguaje, en la aprehensión de significados y en la expresión verbal.*

PALABRAS CLAVE: *Evaluación cualitativa. Educación especial. Mediación escolar.*

Introduction

The National Policy of Special Education from the perspective of Inclusive Education (BRASIL, 2008) has expanded discussions on the process of schooling of people with disabilities, aiming to develop individual potentialities and ensure a quality education for all.

It is still a challenge for teachers to carry out assessments and mediations that expand the learning conditions of students targeted by special education, including those with Williams-Beuren Syndrome, so that they acquire autonomy in the way they think and act. Williams-Beuren syndrome (WBS) is a neurodevelopmental disorder caused by a micro-lotion located in the short arm of chromosome 7 (7q11.23), in the locus of the elastin gene. It is considered a rare disease, because the frequency is from 1 to 13,700 children born alive, who present facial alterations, among them: upright nose, prominent cheeks, long nasal filter and thick lips; cardiovascular, appearing the stenosis of the supravalus and ocular artery, identified with the iris of starry pattern (SUGAYAMA *et al*., 2002; SUGAYAMA *et al.,* 2003).

According to Nunes (2010), psychometric tests and intelligence tests applied to children with WBS presented an IQ between 40 and 60, below the borderline line.

Research in children with WBS on the use of semantics showed integrity in the phonological system, with articulatory precision and lower than average performance in semantic acquisition (MAYRINK,2012).

According to Oliveira (2005), clinical and educational evaluations derived from a psychometric tradition centered only on results bring little information about the forms of intervention and the learning process of these students. Linhares, Escolano and Enumo (2006), Oliveira (2005) and Feuerstein, Feuerstein and Falik (2014) are unanimous in putting that

pedagogical action is dynamic and should be focused on the potentialities of children to allow the right to learning and access to the school curriculum. Therefore, it is from the knowledge of the learning conditions of children that an intentional and interventional pedagogical action can be established.

For Education, more than measuring the intellectual coefficient (IQ) and evaluating the child's performance compared to a standard or standardization determined by a test, it is necessary to consider the importance of evaluating their learning condition and the need or not for mediation, according to what Feuerstein, Feuerstein and Falik (2014) and Oliveira (2005) propose. Linhares, Escolano and Enumo (2006) point out that, although learning is a human condition, it does not happen for everyone because some children, who have different organic, intellectual and social rhythms and conditions, are deprived of knowledge, requiring pedagogical actions that favor their learning potential.

Given the problem raised, how to identify the learning potential of a target public student of Special Education? According to Oliveira (2005), the learning potential of a subject is identified during the course of an assisted evaluation, when the paths used by the child to perform the task are observed, because the focus is to find the proximal development zone, which is defined by Vigotski (1998, p. 113, our translation) as

> those functions that have not yet matured, which are in the process of maturation, functions that will mature, but which are present in an embryonic state. These functions could be called "shoots" or "flowers" of development, rather than "fruits" of development.

For Reuven Feuerstein (1980), learning potential is identified through the Mediated Learning Experience (EAM), which corresponds to a special type of interaction between someone who teaches (the mediator) and someone who learns (mediated).

The Mediated Learning Experience model was represented by Feuerstein (1980), in the figure below.

Figure 1 – Mediated Learning Experience Model

Legend: S= stimulus; R=response; O= organism; H=human mediator
Source: Feuerstein, Feuerstein and Falik (2014, p. 65)

EAM takes place through the positioning of a human mediator (H), which is placed:

- between the stimulus (S) and the subject (O), to expand the perceived information and
- between the subject (O) and the answer (R), helping the elaboration of thought, with the objective of provoking a structural change in the mediated subject.

The EAM incorporates 12 criteria aiming at meaningful learning, the first three being fundamental for cognitive structural modibility. These criteria constitute a tripod of the structural dimension, directing the form of mediated intervention that proposes a process of internal change, from the construction of efficient psychological processes (TURRA, 2007). They are:

1. Intentionality and reciprocity. It consists in explaining to the mediated its intention objectively, making clear its path to achieve the proposed objective. Reciprocity can be identified when there is acceptance of the mediated proposal presented, resulting in the change of a behavior or a cognitive structure. Often, a student's lack of reciprocity is interpreted as disinterest, but there may be a difficulty in understanding and elaborating the content offered by the teacher.

2. Transcendence. This criterion is not restricted to immediate needs, but in preparing the learner subject to establish relationships and make generalizations between the contents, considering several sources of information simultaneously.

3. Meaning mediation. It begins at the beginning of the mother-child relationship when the interaction still develops at the preverbal level, when a mediating mother intentionally uses body language, changes in the amplitude of her voice, changes in movements, frequency and repetition of mediated stimuli. The mediator is responsible for passing the cultural heritage to the mediated, giving meaning to their actions.

Feuerstein (1980) faced the problem of evaluating immigrant children, victims of the Holocaust of The Second World War and, therefore, created a structured evaluation system that became known as *Dynamic Assessment of Learning Potential Assessment Device* (LPAD), which is carried out in three phases: Pre-test, Mediated Learning and Post-Test.

The LPAD model approaches the concept of Vygotsky's Proximal Development Zone (ZDP), as the level of actual development of the child in the pre-test and the level of potential development in the mediation phase is raised, indicating their ability to perform tasks with the help of more experienced adults or partners. LPAD allowed the identification of 19 mental operations that the brain is capable of performing, according to Feuerstein (1980), namely: 1. Identification; 2. Comparison; 3. Analysis; 4. Synthesis; 5. Classification; 6. Coding; 7 Decoding; 8. Projection of Virtual Relations; 9. Differentiation;10. Mental Representation; 11. Mental Transformation; 12. Divergent Reasoning; 13. Hypothetical Reasoning; 14. Transitive Reasoning; 15. Analogue Reasoning; 16. Progressive Reasoning; 17. Logical Reasoning; 18. Silogistic Reasoning. 19. Inferential Reasoning.

AD LP allowed Feuerstein to identify 28 deficient cognitive functions in the children evaluated in Chart 1.

Table 1 – Feuerstein's deficient cognitive functions (1980)

INPUT PHASE	ELABORATION	EXIT PHASE
1 Inaccurate perception, without clarity	9. Difficulty perceiving a problem and setting it clearly	22.Self-centered communication
2. Unplanned, impulsive and non-systematic exploratory behavior	10.Difficulty defining relevant and irrelevant data	23.Deficiency in virtual relationships
3. Lack of vocabulary and appropriate concepts	11. Absence of comparative conduct	24.Blocking the communication of responses
4. Poor spatial orientation	12. Mental field narrowness	25. Test and error responses
5. Poor temporal orientation	13. Episodic perception of reality	26.Inadequate use of verbal instruments, inaccuracy when communicating responses
6. Absence of constancy and permanence of the object	14.Absence of the need for logical reasoning	27.Deficiency in visual transport
7. Inaccuracy and inaccuracy in data collection	15.Difficulty in internalizing one's own behavior	28. Impulsive conduct
8. No consideration of two or more sources	16. Absence of the need to use hypothetical-inferential thinking	
	17. Disregard of two or more sources of information	
	18. Absence of planning behavior	

	19. Difficulty in developing cognitive categories	
	20. Absence of conduct	
	21. Difficulty in establishing virtual relationships	

Source: Brazilian Center for Modifier (2013)

Development

The research is based and based on the studies by Reuven Feuerstein (1980) on Structural Cognitive Modibility and the Mediated Learning Experience.

This is qualitative exploratory research, conducted in case study format, with a 13-year-old male adolescent selected by the results of the FISH (*Fluorescence in situ Hybridization) positive examination for* Williams Syndrome with the signature of Free and Informed Consent Term No. 3,327,977 by parents.

The research site is a clinical practice. For data analysis, the scores obtained in the assisted evaluation were considered, taking into account the table of cognitive functions of Feuerstein (1980).

The assisted evaluation followed the LPAD Evaluation model, with the adaptations indicated by Linhares, Escolano and Enumo (2006) and performed in three phases:

1.Pre-test: application of the Audibilization Test (TA) elaborated by Clarissa S. Golbert (1988) to evaluate the ability of hearing in children in the initial phase of writing acquisition. The AT is composed of 106 items, worth one point each, 24 related to phonematic discrimination, 36 for memory evaluation and 46 for conceptualization.

2.Mediated Learning Experience: application of the Basic Instrumental Enrichment Program (PEI) in six mediation sessions, one hour each. Three sheets of the Illustration module were selected, with the theme: Comparison of Absurdities, in order to identify what the child would be able to do with help, considering its level of potential development.

3.Reapplication of the Audibilization Test to compare the results, in a session of approximately one hour. The difference between the child's result in the pre-test (performance without help) and in the post-test (performance after mediation) is an indicator of its modibility, that is, its learning potential.

Characterization of the subject

You're a 13-year-old boy, first son, whose brother is six. She was born by cesarean section, with 2.975 kg and 47 cm, and showed no complications. She was breastfed for 6 months, but had difficulty breastfeeding. You've accepted solid foods well. In the first months of life, she underwent treatment for the adenoid.

His motor and language development were delayed: he walked at 2 years and 3 months and spoke at 3 years.

The mother asked the pediatrician to investigate this delay and the child was referred to a geneticist, but the karyotype test was normal. Fish (*Fluorescence in situ Hybridization)* test positive Williams syndrome. The child underwent genetic follow-up at the Federal University of São Paulo (UNIFESP) and private clinical care for speech therapy, occupational therapy and physiotherapy, up to 8 years of age. He is currently accompanied by specialists: cardiologist, geneticist, endocrinologist and nephrologist at the Children's Institute of the *Hospital das Clínicas.*

With regard to interaction, V. is reserved and shy, speaks little, always through loose sentences and responds only to subjects of interest to him. It has difficulty maintaining a dialogue and is repetitive.

According to her mother's report, she always had school problems. At the age of three V. attended a private school, did not interact with other children and was sleeping in the living room.

At the age of 7, he entered the municipal public school to do elementary school. It was welcomed by the first-year teacher who started the literacy process, but this occurred only when you were in the 4th grade, at the age of 10.

Elementary II is being completed in another School Unit The mother commented that her child is in the 6th grade and does not follow the school curriculum, but attends the Multifunctional Resource Room, in the school shift, with the teacher of Specialized Educational Care, who makes the necessary curricular adaptations to facilitate the learning of the contents.

In addition to school life, you participate in the gatherings and events promoted by the Brazilian Association of Williams Syndrome (ABSW), which takes place every semester and also of a group of students with Williams Syndrome, registered with ABSW, who exchange daily information.

Pre-Test: Application of the Audibilization Test

Subject V. was in the hypothesis of non-orthographic alphabetic writing, and the result of the Audibilization Test was compared with the 28 cognitive functions of Feuerstein (1980), previously identified in Chart 1 and is broken down in Table 1.

Table 1 – Pre-test results of the Audibilization Test

SUBJECT V	**APPLICATION 1**	
AUDIBILIZATION TEST	HIT PERCENTAGE	PREDOMINANT COGNITIVE FUNCTIONS
Part I Phonematic Discrimination	88%	1. Inaccurate and unclear perception 2. non-systematic exploratory behaviour 28. impulsive conduct
Part II The Memory of Phrases	67%	8. Not considering two or more sources of information
Part II B Digit memory	42%	7. Inaccuracy and inaccuracy in data collection
Part II C Memory of reports	28%	8. No consideration of two or more sources of information. 20. absence of soda conduct
Part IIIA Concept Identification of Absurdities	17%	12. narrowness of the mental field. 13. episodic perception of reality
Part IIIB Identification of Objects	80%	7.Inaccuracy and inaccuracy in data collection. 12. mental field narrowness
Part IIIC Definition of words	100%	
Part IIID Syntactic-Semantic Organization	50%	24.Blocking the communication of responses. 26. Misuse and verbal instruments
Part IIIE Vocabulary of figures	91%	19. difficulty in elaborating cognitive categories
TOTAL:	66%	Running time: 1 hour

Source: Prepared by the authors

According to Table 1 of the Audibilization Test, it was observed that, in the entry phase, subject V presented an inaccurate perception and an exploratory behavior not planned to perform the tasks, not commended to the relevant data and losing information. In the elaboration phase, V. presented a narrowing of the mental field because he had difficulty to give his opinion or defend a certain position, using logical arguments. In the exit phase, V. presented a blockage in the communication of the responses due to the lack of vocabulary and failures in the conceptualization.

According to Table 1, V. obtained a higher score in phonematic discrimination, definition of words and vocabulary of figures. The mental operations required for this activity are related to the cognitive functions of input (1, 2, 7 and 8) that depend on sensory support and auditory perception. Repeating phonemes requires selective attention. At this stage of the test, the commands were direct and objective, facilitating the understanding of the subject.

Regarding short-term memory, a lower score was observed in the conceptualization and identification of absurdities and in the syntactic-semantic organization. This difficulty is related to cognitive functions of elaboration (12,13, 19, 20 and 21).

The subject had difficulty in applying the summation and comparative conduct. During this process of analysis and synthesis, V. lost relevant information and data, impairing the quality of his answers, which corresponds to the output functions (20, 24, 26 and 28).

Mediated Learning Experience - EAM

After the survey of deficient cognitive functions, the Basic PEI instrument was introduced - module: Identification of Absurdities, because it is more appropriate to the cognitive development of the subject.

During the EAM sessions there was a concern to establish a bond between the mediator and the mediated and between the subject and the task, ensuring the criterion of intentionality, reciprocity and meaning, fundamental in this stage, because it helps to rescue the feelings of competence and motivation necessary for cognitive change to occur.

The module: compare and discover absurdities, was selected for mediation with the objective of moving cognitive functions and expanding the perception of the subject about the stimulus, as can be seen by the descriptions below.

1st mediation session

Illustration H7*: Compare* and discover the absurdity. The illustration showed two scenes with some function swapped objects.

Mediator: "*I'm presenting an illustration for you and I'd like you to look closely and tell me what's going on at the scene."*

V.: *"You're eating noodles"* (pointed to the soup).

Mediator: *"Oh, you're eating noodles."*

V.: *"You're drinking water."* (pointed to the cup with the chicken inside)

V. responded without looking at the details of the scene because it did not identify the objects that were out of context.

This result shows an episodic perception of reality (cognitive function 13). Intentional mediation was performed to help you elaborate your thinking and understand the context.

Mediator: *"Look more closely. Is that water the boy's drinking?* "

V.: "*No. It's a* bone."

Mediator: "*Look more closely at the sheet. Do you notice any nonsense in this scene?* "

V.: "*It's changed The bone is on the plate and not in the glass. And water is in the glass and not in the dish*."

Through the mediation performed, there was a greater clarity of the problem (Cognitive function 1) and an expansion of its mental field (cognitive function 12), which led to the recognition of objects outside the context.

Mediator: *"So, what should the scene be like?"*

V.: *"The chicken bone on the plate, eat with the fork and the juice in the glass. You can't use the glass to eat meat."*

This mediation brought to the subject a way of establishing relationships with the realities already experienced, leaving the episodic perception (cognitive function 13), to an understanding within the context of the problem presented.

2nd mediation session:

Illustration H8**: Compare** and discover the absurdity. The scene showed objects that are out of context.

Mediator: "*Look closely and tell me what you are seeing in the picture*."

V.*: "He is playing ball with paper"* (pointing to the player). *"He's painting the ball*" (pointing at the boy).

Mediator: *"Who are they?"*

V.: *"The player and the boy."*

Mediator: "Is *there anything strange about this scene?"*

V.: "*The boy has to kick with the ball, but is kicking the role. The other is using a ball to draw*."

Given V.'s answers, it is noted that he already identifies the absurdity of the scene. At this stage, it is observed the reciprocity of the mediated in solving the problem situation as well as the rescue of the feeling of competence.

Mediator: "Oh*, can you tell me where the paper and the ball would have to be?"*

V.: *"The ball is of the boy playing and the role is of the painting boy."*

By the answer, it is seen that V. is beginning his process of transcendence (criterion 2) that is, that he has already internalized the content, associating it with previous contents. Transcendence is a more complex process of metacognition, which is better identified in the long run.

3rd mediation session:

Illustration H9**: Compare** and discover the absurdity

Mediator: *"What's going on in this scene?"*

V.: *"One boy is sweeping with a boat on the ground and the other is cycling with a bicycle in the water."*

It is perceived that the content presented has materialized. There is a decrease in anxiety and impulsive conduct (function 28).

Mediator: *"And what's wrong?"*

V.: *"It's changed. This one goes ashore."* (pointed to the bike). "*The one that's sweeping[...] he has to go to sea."* (pointed to the boat).

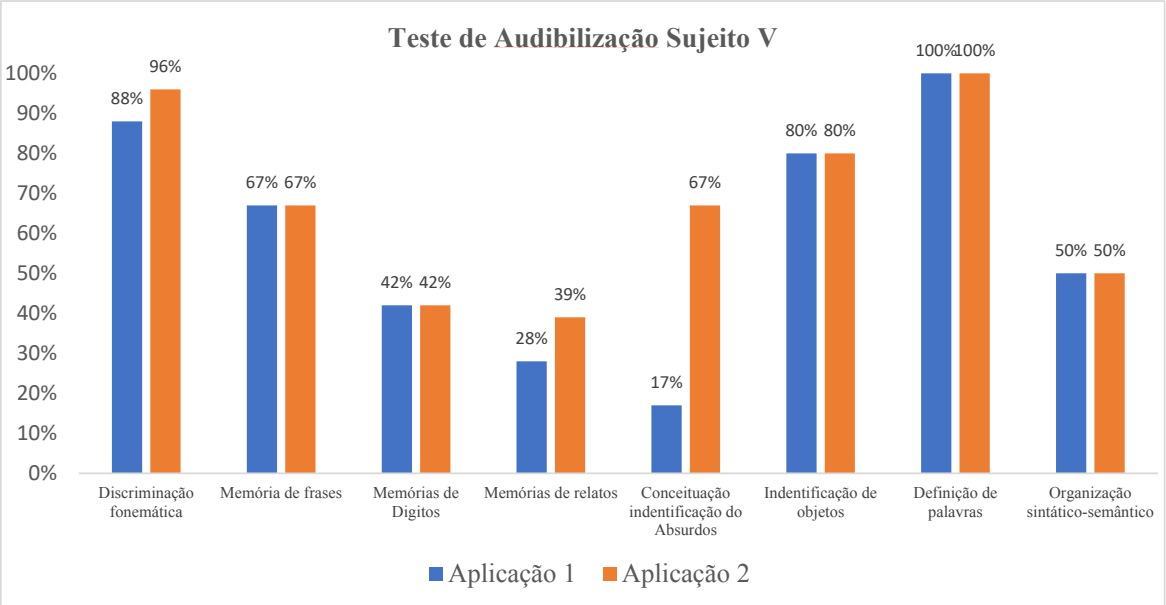
The feeling of competence appears at that moment, placing the subject in the place of protagonist of his own reality. It is essential that the instruments offered help you formulate concepts and express yourself spontaneously.

In view of the subject's answers, it was possible to observe that the Mediated Learning Experience broadened his mental field and perception of reality.

Reapplication of the Audibilization Test to compare the results

The results obtained were compared with the pre-test, as shown in Figure 2

Figure 2 - Hearing test: Comparison of pre-test and post-test results



Source: Prepared by the authors

Comparing the responses of the hearing test (without help) with the increase of correct answers of the test responses after mediations, it was possible to verify that V. presented a propensity for cognitive modibility, demonstrating his learning potential, despite the characteristics of the Syndrome.

It is important to emphasize, in relation to the aspects that did not present modibility, that it would take a longer time to develop the different mediation resources and enable the repetition of stimulations and experiences to ensure greater assimilation of concepts and development of skills.

Findings

The hearing test sought to "probe the processes of receptive language of the child, through psycholinguistic tasks, such as: the discrimination of sounds, memory and conceptual capacity" (GOLBERT, 1988, p. 15, our translation). Such tasks occur through cognitive functions, responsible for identifying, elaborating and processing information, described in Feuerstein's studies (1980).

For Golbert (1988, p. 96, our translation) "[...] conceptual poverty limits memorization and restricts the possibilities of phonematic discrimination, as well as failures in the level of discrimination that alter memorization and signification processes". The discrimination process covers cognitive input functions, described in the Feuerstein table (1980), responsible for identifying, comparing and defining the data presented.

The results of this evaluation identified deficiencies in the cognitive functions of entry, elaboration and exit, which hinder the completion of the mental act.

The prognosis suggests the subject's pro-suspensions to structural cognitive modibility, through rehabilitative educational programs, such as the Feuerstein Instrumental Enrichment Program (1980).

The application of the Basic EIP, as an instrument of mediation and structural cognitive modibility, brought a greater concentration of the subject in performing the tasks, showing receptive and enabling to trigger the cognitive functions of entry, which are responsible for the clear and accurate perception of the problem.

The visual strategies, selected in the Module Illustration - Basic PEI (FEUERSTEIN,1980), allowed the subject to expand the perceptual processes (cognitive function of entry) and move to the stage of elaboration and survey of hypotheses, ending the mental act with precise information and elaborated by the use of logical reasoning. (Cognitive output function).

In the reapplication of the tests of the first phase, the results showed considerable advances, such as:

Part I - Phonematic discrimination - from 88% of correct answers to 96%.

There was an improvement in the focus and exploratory behavior of the subject during the performance of the task (functions 1, 2 and 7), which contributed to a greater number of correct answers.

Part II C - Memory of reports - from 28% of correct answers to 39%. There was an improvement in the conduct, the subject begins to internally organize the information to reproduce the requested sentence, in a logical way. (function 12).

Part III A - Conceptualization/Identification of Absurdities - from 17% of correct answers to 67%. It was observed that the subject had greater facility to select relevant data of the problem situation (function 7), meeting satisfactorily the objectives.

These advances also reflected in the execution time of the activities that decreased from 1 h to 35 minutes and, conversely, the percentage of total correct answers increased from 66% to 72% of correct answers.

It should be emphasized that the visual support and the technique of asking questions with short sentences and few commands is one of the prerequisites of THE, being facilitating tools for V. to increase the ability to perceive the problem presented.

Final considerations

The assisted evaluation allowed the subject to understand and act in a planned manner in the situations offered, considering all sources of information and expanding the mental field and creativity.

It was found that, in order to expand the learning conditions of the target public students of Special Education, it is important to seek specific mediation with a focus on learning potential. It is of great relevance that the subject can perceive himself and believe in his own ability to learn and change. When there is intentionality and reciprocity debut between the mediator and the mediated, learning becomes significant and allows a mental field amplitude of the learner subject, reaching cognitive synthesis and the transcendence of knowledge.

With this case study it is possible to affirm that mediation is important for the advancement of the learning process, which evidences the need for its use by teachers. It is suggested that teachers appropriate assisted assessment and perform the Mediated Learning Experience to stimulate the cognitive functions so necessary for the advancement in the learning process of the student and, consequently, access to the school curriculum.

It should be considered that the affective bond that is established in the Mediated Learning Experience, in the students, the feelings of competence, of optimism, of the search for the new, of sharing, of belonging to the group.

The assisted evaluation model provides important information about the level of real development and the level of potential development of the subjects, and, therefore, assists in the elaboration of activities appropriate to the cognitive level in which the learner is.

REFERENCES

BRASIL. **Política Nacional de Educação Especial na Perspectiva da Educação Inclusiva**. Brasília, DF: MEC; SECADI, 2008. Available: http://portal.mec.gov.br/arquivos/pdf/politicaeducespecial.pdf. Access: 12 Apr. 2022.

FEUERSTEIN, R. **Instrumental Enrichment**: An intervention program for cognitive modifiability. Glenview: Scott, Foresman and Company, 1980.

FEUERSTEIN, R.; FEUERSTEIN, R. S.; FALIK, L. H. **Além da Inteligência**: Aprendizagem mediada e a capacidade de mudança do cérebro. Petrópolis, RJ: Vozes, 2014.

GOLBERT, C. S. **A evolução psicolinguística e suas implicações na alfabetização**: Teoria, avaliação e reflexões. Porto Alegre, RS: Editora Artes Médicas, 1988.

LINHARES, M. B. M.; ESCOLANO, A. C. M.; ENUMO, S. R. F. **Avaliação Assistida**: Fundamentos, procedimentos e aplicabilidade. São Paulo: Casa do Psicólogo, 2006.

MAYRINK, M. L. S. **Estudo da semântica e estrutura da linguagem na Síndrome de Williams**. 2012. Dissertação (Mestrado em Saúde da Criança e da Mulher) – Instituto Fernandes Figueira, Fundação Oswaldo Cruz, Rio de Janeiro, 2012. Available: https://www.arca.fiocruz.br/handle/icict/6654. Access: 19 Mar. 2022.

NUNES, M. M. **Avaliação do funcionamento cognitivo em pacientes com Síndrome de Williams-Beuren**. 2010.Tese (Doutorado em Ciências) – Faculdade de Medicina, Universidade de São Paulo, São Paulo, 2010. Available: https://www.teses.usp.br/teses/disponiveis/5/5141/tde-18022011-114532/en.php. Access: 27 Sept. 2022.

OLIVEIRA, A. A. S. Avaliação em Educação Especial: O ponto de vista do professor de alunos com deficiência. **Estudos em Avaliação Educacional,** São Paulo, v. 16, n. 31, p. 51-78, 2005. Available: https://publicacoes.fcc.org.br/eae/article/view/2142. Access: 10 Mar. 2022.

SUGAYAMA, S. M. M. *et al*. Anormalidades oculares em 20 pacientes com Síndrome de Williams-Beuren. **Pediatria**, São Paulo, v. 24, n. 3/4, p. 98-104, 2002. Available: https://www.luzimarteixeira.com.br/wp-content/uploads/2011/04/anormalidades-oculares-na-sindrome-de-williams.pdf. Access: 11 Mar. 2022.

SUGAYAMA, S. M. M. *et al*. Síndrome de Williams-Beuren. Anomalias Cardiovasculares em 20 Pacientes Diagnosticados pela Hibridização In Situ por Fluorescência. **Arq Bras Cardiol**, v. 81, n. 5, p. 462-467, 2003. Available: https://www.luzimarteixeira.com.br/wp-content/uploads/2011/04/aspectos-cardiovasculares-na-sindrome-de-williams.pdf. Access: 11 Mar. 2022.

TURRA, N. C. Reuven Feuerstein: Experiência de Aprendizagem Mediada: Um salto para a modificabilidade cognitiva estrutural. **Rev. de Educação Educare**, São Paulo, v. 2, n. 4, p 237-310, jul./dez. 2007. Available: https://pt.scribd.com/document/313691185/Reuven-Feuerstein-Experiencia-de-Aprendizagem-Mediada-Um-Salto-Para-a-Mofificabilidade-Cognitiva-Estrutural. Access: 08 Jan. 2022.

VIGOTSKI, L. S. **A formação social da mente**. 6. ed. São Paulo: Martins Fontes, 1998.

How to refer to this article

AZEVEDO, R. Q.; FREIRE, R. M. A. C. Assessment of the learning potential of an adolescent with Willians-Beuren syndrome. **Doxa: Rev. Bras. Psico. e Educ.**, Araraquara, v. 23, n. 00, e022016, 2022. e-ISSN: 2594-8385. DOI: https://doi.org/10.30715/doxa.v23i00.16799

Submitted: 20/06/2022
Revisions required: 13/08/2022
Approved: 06/11/2022
Published: 30/11/2022

Processing and publication by the Editora Ibero-Americana de Educação.
Correction, formatting, standardization and translation.