European Journal of Special Education Research
ISSN: 2501 - 2428
ISSN-L: 2501 - 2428
Available on-line at: www.oapub.org/edu

DOI: 10.46827/ejse.v9i1.4704 Volume 9 | Issue 1 | 2023

CASE STUDY: A PSYCHOEDUCATIONAL INTERVENTION PROGRAM IN CHILDREN WITH DEAFBLINDNESS

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Abstract:
The aim of the research is to create an intervention program that will combine the use of alternative and adapted methods of information collection to establish the communicative and cognitive profile of a deaf-blind student. The student who participated in this particular case study is a 11 years old girl who attends a special school in Greece. The results of the research were encouraging and highlighted the importance of creating similar programs in Greece for deaf-blind students. More specifically, they showed that the student can now orient herself spatially and temporally in relation to her daily educational program at school and, moreover, she had now built a better image of the body parts and their function.

Keywords: intervention program, deaf-blind student

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1. Introduction

Deafblindness is a multisensory, complex, and barely visible disability that prevents the affected person from using the senses of hearing and vision, and does not always result in a complete loss of both senses (Bodsworth et al., 2011; Fernández & Molla, 2015). The loss of one sense or the other, its etiology, the degree of loss, and the time of onset are factors that influence the development of affected individuals. Classification of deafblindness is based on the time of onset of symptoms and the level of autonomic functioning of the deafblind person. Vision and hearing loss result in difficulties with communication, access to information, social interaction, etc. Therefore, specialized services are needed to cope with everyday life (Reyes, 2004; Jaiswal et al., 2018). Deafblindness is considered a unique disability as recognized by European Parliament (2004). In addition to the uniqueness of the disability, deafblind people constitute a heterogeneous population (Roy et al. 2018; Simcock, 2017). There is currently little written about deafblindness and its effects (Roy et al., 2021).

In 2018, the World Federation of the Deafblind carried out a census study with more than 97.6 million participants from 22 different nations. According to this analysis, 2% of the world's population had "moderate" multisensory loss, while 0.2% had "severe" deafblindness.

The reasons of deafblindness are numerous (neonatal infestations, diseases, metabolic issues, etc.), but Usher Syndrome, a congenital condition that manifests as sensorineural hearing loss, vestibular abnormalities, and retinitis pigmentosa at the auditory level, is the most prevalent. An accurate diagnosis is crucial in these situations, and deafblind people and their families may need to participate in genetic investigations (Simcock & Manthorpe, 2014). Deafblindness presents significant difficulties for those who have it, as well as for their relatives and the professionals that interact with them on a daily basis. One of these is to find alternate systems or techniques of communication that enable people to create functional communication and improve their standard of living. Due to the psycho-emotional ramifications, it is vital to give the communicative, social, and relational components priority. In order to provide the best support, it is crucial to accurately define the effects of double sensory loss (Bruce, 2010; Dammeyer, 2014; Hathazi, 2005).

Social interactions are influenced by the sensory loss's onset, its complications, the systemic and cultural context, and other factors (Sarris, 2020). Professionals who support and assist people with deafblindness improve their intervention programs by having a greater awareness of these factors. Irrespective of the cause of these challenges, people with deafblindness exhibit issues with communication, mobility, and participation in social activities, according to studies like those by González & de la Rosa Gimeno, (2021). Children with deafness and blindness exercise bullying behaviours more often than other children (Charmpatsis & Tzoumanika, 2021).

People who are deafblind can have a variety of demands in every aspect of their growth (Manga & Masuku, 2020). From the perspective of education, they demand qualified professionals with experience in alternative communication models, with a

particular emphasis on technology support provided by digital communication tools and applications (Stoffel, 2012; Riggio & McLitchie, 2008; Nelson & Bruce, 2016). Of all disabilities, the deaf-blind child experiences the lowest level of understanding. It is not a child who is blind and cannot hear or a child who is deaf and cannot see. He is a young child who struggles with multisensory issues and does not have the capacity to use his hearing and sight remotely. A key source of information and stimulus from the physical and social world is frequently not sight or hearing (McInnes & Treffry, 1993).

Norms present serious difficulties for the deafblind. The degree of isolation in their social network, at their job, or in their family makes the integration procedures more challenging.

Addressing communicative functions is one of the top priorities in order to make up for the sensory deprivation they experience. For this, a Greek Sign Language (GSL) translator is crucial, especially when the people involved are signers and do not have a strong oral language. For this group, gaining independence with the help of GSL interpreter guides or the family themselves is essential and becomes a top goal (Verdugo & Martin, 2006).

Quality of life has attracted researches' attention in the area of deafblindness as another key factor. According to Whitworth (2018), quality of life is a multifaceted topic that includes rights, social inclusion, interpersonal relationships, social inclusion, personal development, physical health, mental health, and financial health. According to their reasoning, these features change and exhibit various traits based on the personal traits and external circumstances of deafblind individuals.

According to Lusada-Puente (2018) assessing the Quality of Life using the dimensions and indicators given by Gomez et al. (2008) is crucial if we wish to understand the true requirements of deafblind persons (Emotional Well-Being; Physical Well-Being; Self-Determination; Interpersonal Relations and Personal Development). The results of this examination would give us a broad picture of the situation facing people with this kind of handicap, but individual variances cannot be discounted because they may be influenced by personal, social, and educational factors (Froment & Gonzalez, 2018).

2. Research Questions and Objectives

The object of this research is the creation of a tool for constructing the communicative and cognitive profile of deaf-blind students with the ultimate goal of designing and implementing an individualized psychoeducational intervention program. The heterogeneity of the population under evaluation leads us to use the techniques of observation and case study. The following research questions determined the nature and content of the research:

- How can the cognitive profile of a deaf-blind student be constructed?
- How can the communication profile of the deaf-blind student be established?
- Are there any difficulties in the conceptual construction of deaf-blind students?

- Can a deafblind student benefit from the implementation of an individualized intervention program?

3. Method

A case study was used in this research. The student is blind and deaf and hails from a larger part of Epirus (Greece). The student is a girl at the age of 11 and the method for creating the communicative and cognitive profile was used to conduct a prototype "evaluation" of the student during the first phase. Each sub-scale requires roughly 10 minutes of administration on an individual basis. The results are then recorded using unique procedures, with the student's personal data encoded to maintain secrecy. The researcher will only use the data they have gathered to conduct quantitative and qualitative analysis. The planning of appropriately adapted activities for all areas related to communication, cognitive, and social-emotional development is carried out in the following phase, and it is guided by the difficulties that will be recorded after the administration of the communication and cognitive profiling tool, in order to form the personalized intervention program. Following the parent's written approval, the intervention program is put into action. It took roughly 15 minutes for each session, with a maximum of 120 minutes for the entire program. The student is reassessed using the communicative and cognitive profile test after the implementation of the customized intervention program to identify the outcomes of the intervention. The study was conducted in the physical space of the student's home with the presence of a guardian.

4. Results

The student is 11 years old. This is a student with multiple disabilities, who presents particularly severe vision and hearing problems, psychomotor retardation, speech and language problems and serious health problems. The learner communicates through reference objects and tactile semantics as a means of the incoming communication. She understands the functionality of reference objects and prepares through them for upcoming activities. She does not use meanings as a means of outgoing communication and does not communicatively express her needs and desires. She expresses pleasure with laughter and smiling and displeasure or reluctance with outbursts of self-injury and other-injury. She explores objects with her hands and mouth and finds objects with light and vibration attractive. She is cognitively unable to complete sequencing, grouping, matching and sorting activities and she has difficulty in group activities. It presents strong tactile defensiveness and avoids contact with rough and cold surfaces and water. The student managed, but with difficulty, to develop a relationship of trust. The disruptive episodes were enough and the girl was aggressive towards herself (hitting, biting) and others (hitting, biting, hair pulling). The activities focus on the development of cognitive skills (grouping, visual motor coordination, sorting, fine motor and object recognition) and communication skills (pictograms and the broad use of meanings). She responds to more simple commands and uses meanings consciously and generalized.

Regarding socio-emotional development, participation in group activities, constructions, events and visits is suggested. She does not accept the changes and expresses her feelings with corresponding reactions (crying, laughing, hugging). She, also, participates eagerly and appears to enjoy outside activities (folk, supermarket, field trips) and cooperates and coexists with peers in structured group activities (educational kitchen, group crafts, parties, recess). She likes the presence of other children whose company she enjoys, but the student has not learned to treat them as equals, as she only associates with adults. From the above, it follows that the student does not actually participate in team play and always needs encouragement in activities that require cooperation. Over time, however, the student differentiates the people who work with her and forms a separate, special relationship with each one.

4.1 Intervention stage

The recorded difficulties determined the design of the intervention. The intervention program for the student was designed focusing on: • the conceptual structuring of spatial thinking • body awareness • the conceptual structuring of the concept of time. In addition to this, more goals were set: • to become more independent in clothing, food, footwear, etc. • to learn to negotiate her emotions, especially anger (but also the joy that creates tension for her) • to understand commands and comply with them • to increase concentration time • to make choices by communicating what she wants or does not want • to reduce aggression/self-aggression.

The student responded positively and participated actively in the intervention activities. She gradually showed increasing autonomy in understanding and completing activities, without intervention, while at the same time each intervention activity was enriched with increasingly rich communicative dialogue. More detail:

a. Body awareness

As part of the intervention, the following activities were organized with the aim of building the student's body image: The student was asked to touch the parts of the body that were named with tactile meanings or indicated by tactile indications on his body. At the same time, she was asked to show the corresponding members to a doll or to the teacher. The student was asked to imitate with her body the movements performed by the doll. The teacher invited the student to indicate the parts of the body that she named with tactile notation. The student did not respond successfully. She recognized the hand, foot, head etc. She had difficulty in standing out left and right side. She recognized the legs and the hands with tactile indication and guidance. The student had difficulty in demonstrating the named limbs from herself on the doll. It was more successful with coarse limbs (hands, feet, head), when she pointed them to the teacher. A jointed doll on a fixed base was used. The student identified the body parts first on the student's body and then on the doll. The student stood out the rough parts of the body (head, leg, arm) with more guidance (chestbone, abdomen, back) and indicates them to herself and the doll. Together with the student, the teacher identified on the student's body and then the doll the body parts, while at the same time, they were named with tactile notation. The

student was asked to imitate with her body movements performed by the doll. Student responded very well. The teacher introduced role play and dramatized everyday situations: bathing, wiping, combing, brushing teeth, dressing. The teacher put body cream on different parts of the body (face, neck, hand, leg) while at the same time giving tactile meaning to the different parts of the body. The student followed the same activity at the same time. In the next phase, a role-playing game with clothes was introduced. Various items of clothing (shirt, trousers, jacket, hat, gloves, socks, scarf) were placed in front of the student and the student was asked to find on which part of the body they will be worn on. The student responded very successfully to both parts of the activity.

b. Conceptual structuring of spatial thinking

In the clothes activity, the student faced little difficulty (in this activity was examined conceptual structuring of spatial thinking). We had 2 boxes of shoes. In one, the teacher places a cube (attached with Velcro) in various positions (up, down, inside, outside, right, left), naming the positions multi-sensory. The student is asked to place her own cube in the same position in her own box. The student had a lot of difficulty in recognizing the correct position and orientation in space and in placing an object with a command in tactile notation in indicated positions: up, down, inside, outside. The student is encouraged to imitate spatial placement, because she had difficulty working independently and needed full guidance. The teacher used 2 identical cards with a square-shaped tactile frame designed. The student is asked to place a ball in the correct position when instructed by the teacher. At first, the student had difficulty understanding the activity. Student started to recognize positions through tactile cues. She also recognized most positions correctly (top, inside), but only by imitating the teacher's card.

c. Conceptual structuring of the concept of time

The student faced great difficulty in placing cards that represent actions in time sequence. At the same time, she presented difficulty in recognizing and recalling the pictograms and reference objects that make up the daily schedule (calendar). During the intervention, a favorite topic and familiar material were chosen. Often, the presentation of the time sequence cards was combined with the simultaneous execution of the action they depict. During the intervention, together with the student, the teacher placed the cards in the correct order, justifying and introducing the time concepts: beginning, after, before, end, first, after and listing the steps. The student appeared to be aware of the activity and understand the shift. The girl was still struggling quite a bit and needed help. Even though the activity was familiar and the cards have been used before, the student has great difficulty putting them in order even with the help of the teacher and the simultaneous description of the activity. The student started to understand the alternation of the steps, she needed less guidance, but she couldn’t perform the activity autonomously.

4.2 Evaluation stage

Upon completion of the intervention, the assessment-assessment process is repeated with the tool for constructing the student's communication and cognitive profile, focusing on the areas where difficulties were recorded. Through recording the results, the effectiveness of the intervention was confirmed, as the student showed a particularly positive response and active participation in the differentiated intervention approach. According to the results of the assessment carried out upon completion of the intervention program, the student has built a better body image by identifying the parts of the body that receive the tactile stimulus and identifying the rough parts of her body with those of the doll. In addition, the student-oriented herself spatially and temporally in relation to her daily educational program at school.

Conflict of interest statement

The authors declare that they have no conflict of interest related to the study or preparation of the manuscript.

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