

Use of Multimedia and Distance Learning in Children with Special Education Needs (Deaf Children) in Greece

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Abstract: Education is an important and integral part of society. Regarding the society of deaf students, many elements are observed that make this part of the population in a position to be investigated more and to be helped especially in the matter of education. These children are in need of aids that will cover the deficiencies created due to hearing loss. Interactive applications are an accessible and easy-to-use means to increase the quality and effectiveness of these children's learning. The education of deaf children has a long course and development. Studying the historical path of the education of the deaf, we notice that it has gone through various stages where each time specific issues had to be addressed and resolved, depending on the needs of the time. Given the - to a great extent - heterogeneity of the population of deaf children, we cannot speak of a correct and universal educational approach.

Keywords: Distance learning, ICT, Special education needs.

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1. Introduction

Providing the definition for the term of special education, this is not an easy task, since people and persons are talking about persons with special educational needs. For the term "*person with special educational needs*", there is not any specific limits which have been set, but instead there is an ambiguity, since the different categories of disability have not yet been clarified [1].

Also, this aspect is due to the fact that in the past there was also the opinion that people with special educational needs should also be considered mentally ill. For this reason, several definitions have been formulated from time to time, in order to somehow make visible all the forms that special education and training can take [2].

The pioneer in the process of defining special education, was actually Rosa Imbriotti, who was given the title "*Mother of special education*" due to the fact that she accomplished a very important work, daring to assert in 1939 that "*special education is the science that takes care of for the education, teaching and welfare of all children whose physical and mental development is continuously impeded by individual and social factors*" [3].

Upon this specific definition, it becomes clear that the main goal of special education and training is beyond education and teaching, the offer of support to those students who, either for personal or social reasons, did not manage to be at the same level as the student's typical development. It should be noted that social factors are also mentioned as a root cause in the definition, something that has not been mentioned in the definition.

Finally, it should be said that for younger readers, fairy tales with various animals as protagonists have been

selected, while for older readers, stories based on human characters have been selected. At older ages, the choice of stories with human characters may have more appeal as many of the children may identify with one of the heroes. Considering the many difficulties faced by deaf children in understanding texts, all texts were simplified, and the most common Italian words of primary education were used. According to research, it has been stated that images effectively help in understanding texts. For this reason, static as well as animated images were used in some stories with the aim of making the stories more attractive, but also visual references may enhance the narration of the events.

2. Literature Review

The role of the teacher is particularly essential both during the evolutionary course of the pedagogical process and the practical implementation of every educational policy. For this reason and at the same time for how special and complex he is, a lot of research has been done in order to clarify in detail who exactly he is. As it has been argued, the one who is called an educator should, throughout his professional career, develop and interact with his peers in order to become better [2].

Teachers are characterized by the society as the people who have the responsibility for any reform or innovation that takes place within the education sector, decide on the organization of educational programs, come into contact with young people, in order to guide them in new knowledge, in the development of their critical thinking and democratic views as well as in dealing with all social phenomena in a fair and objective way. Thus, they manage to be those who welcome everything new and promote it in a universal way. The multifaceted personality of the teacher has brought him/her face to face with demanding situations that have more to do with the adequacy of knowledge and support.



More specifically, the vulnerabilities, which arise during the professional career of teachers, are related to the following issues:

- The level of education and professional career in the specific context. For example, if a teacher has not been trained in dealing with people with special educational needs, then he/she will certainly feel helpless and not will be able to provide appropriate support, resulting in either being informed by others about what steps to take or even exemplary refusal to deal with such cases, arguing that it is not within his own competence. This whole situation could have taken a completely different turn if the teachers were properly trained. In particular, in matters concerning Special Education, this would be necessary, given that there are many developments, and this makes it necessary for teachers to show a different approach to the specific students, through the guidance they will receive from the responsible for special education and training.

- Its socio-cultural context. The teacher is a result of each society that has been educated, following a specific protocol with principles, values, and rules. Between teachers and parents there is likely to be some gap in opinions, ideas and tactics due to education and the different way they have learned to live. This makes meaningful communication difficult.

- The feeling of loneliness felt by the teacher. The teacher is the only person who is called upon to carry out what was planned together with the counselors, the principal and the parents of each child with special educational needs. In the case, in particular, that he does not have the necessary knowledge about issues of special education and training, then his work becomes more difficult, as a result of which he feels frustrated. In this situation, of course, a key role is played by the lack of logistical infrastructure, the syllabus, as well as the lack of cooperation that characterizes the relationships between colleagues.

Thus, it becomes clear that there are many causes that lead to the downgrading and mitigating the value of the teacher's profession, thus letting it be seen that not everything is rosy in his professional path. The potential teacher needs to be informed, flexible and adaptable to new data, in order to accept this new condition and continue to try, in order to pass on the torch to the students of the knowledge, values and principles that promote a democratic school environment [4].

In relation to the teacher of special education, the responsibilities that weigh on him/her are much greater, given that students have increased needs compared to those of typical development. As Kalatzis also mentions the special education and training teacher is the "*unquestionable and irreplaceable body and operator of special education and training*" [5].

This particular profession appeared all over the world from 1940-1980 and it was about the one who was responsible for the education of people with special needs and disabilities. As soon as society's views on these individuals began to change, their role automatically changed, thus ushering in a new era regarding the obligations and what their work entails [6].

When people use the term *New Technologies in special education*, they refer to the support devices that are an integral part of the life of the person with a disability, the shared devices (SD) and the special educational software that help the student to develop basic learning skills despite any weaknesses [7]. The use of technological means, support devices and the SD staffed with the appropriate software contributes decisively to the learning process, primarily enabling people with special needs to acclimatize to the educational context and function more easily than any physical or their mental handicap compared to the rest of the student population.

The computer is the most established device in the educational field since it seems to contribute to the educational process by offering new experiences and the possibility of achieving an interesting and entertaining lesson. Plenty of research [7, 8, 9] confirms the assumption that the SD and its peripherals, the new technologies as a whole contribute positively to the educational practice.

The various electronic components and educational software can, on the one hand, restore any physical weaknesses [10] of the students, such as vision and movement problems, on the other hand, smooth out any learning-type difficulties [9]. Students with special educational needs, either due to physical disability or learning difficulties, can benefit from the application of New Technologies in the educational process as it provides them with physical, cognitive and supportive access to the educational activity [11].

The students with physical disabilities gain physical access to the educational process through the use of assistive technology such as the use of eyelid switches or other communication devices that replace speech. They, as well as students with learning difficulties, achieve cognitive access by using appropriate software on the PC (for example digital use of image or video with written text). At the supportive level, the use of the computer helps the teacher to provide feedback and positive support to his students. Overall, students through technology take learning into their own hands, become more active and more responsible without any of their weaknesses being an obstacle to learning [9].

A new path opens up for special education students that offers new and interesting perspectives [12] "*The computer offers the possibility of introducing the student into a controlled environment...it helps the student to maintain his attention and concentration on an activity*" [13].

At this point, it should be pointed out that the basic technology around which the other auxiliary devices and the various educational software used in special education revolve and operate is the SD. Familiarity of the student with special needs with the computer is considered necessary in order to benefit from the use of this and other technological applications. For this reason, the ICT program (Information and Communication Technologies) has been introduced into the curricula of all levels of education in many countries as a basic teaching subject in general and special education.

"The recognition of the educational value of computers led to the building of active relationships between the education of children with disabilities and Information Technology in general. Therefore, the education of children with disabilities must include the full range, diversity and diversity of possibilities offered by the introduction of the specific medium, in order to utilize it aiming at the support and promotion of children and people with disabilities" [14].

The ICT has evolved and continues to evolve rapidly affecting people's lives at an individual, interpersonal, social, professional level and consequently their quality of life. *"So, for an inclusive society it is important to give the possibility to every citizen who wishes to participate in the digital transformation despite any individual or social disadvantages" [11].* In this context, the society of the 21st century for the upgrading of the educational system, it sets as a basis the conversion of education to the needs of the students. The modern school must create suitable conditions for all students to come into contact with new technologies and to use and utilize them according to their needs.

Another category of students with special needs are those who face speech and language disorders. The use of appropriate technology can help these individuals interact within the classroom. When speech is absent or poor, the use of special devices called augmentative and alternative communication devices help individuals overcome their communication problem. The use of these devices is particularly helpful for the educational process, since it gives the opportunity to express and participate to the student with speech disorders, but it costs a lot and this is the main reason why it has not been established as a trend in the educational field as a supporting tool for people with speech disorders.

Today, of course, there are corresponding computer software and tools that are even more flexible and easy to use than stand-alone augmentative and alternative communication devices. There are also devices that incorporate synthetic or digital speech output and can be connected to the computer. A letter read at a Software Publishers Symposium in 1998 by a young man whose PC was equipped with a text-to-speech device is typical: *"Until now, I have never had a voice or any other means of communication. Until last year I was a student in a special school class. Now, I am in the eighth grade of a regular school. The computer was the best thing that happened in my life. Now people don't have to read my words. They can hear them like everyone else" [15].*

Students who are also visually impaired need the assistance of support programs so that they are able to engage in the learning process inside and outside of school. Students with partial vision are helped by the use of the interactive whiteboard or the computer screen as these two media allow images and text to be enlarged (zoom). Regarding students who have no sight at all, there are programs such as the Screen Reader and the Braille Display that allow them to be more autonomous in their learning process.

Screen Readers are tasked with informing the blind person about what is displayed on the screen. It is a software that shows the content of the screen using the

voice synthesizer. The Braille Display converts the data it receives from the screen reader into Braille, allowing the user to read the content displayed on the PC screen line by line. The Optical Diagram Machine (Piaf Printer) is also a computer-independent device for the blind that produces relief graphics [16]. The Braille 'n Speak machine is the most popular 'notetaker'.

It is a talking device with a rich range of functions that particularly help the student. It requires knowledge of braille, is based on seven keys and includes a text editor (write, copy, paste) and the ability to store over 200 pages of braille text. Finally, Voice Navigation software that allows commands to be executed simply by voice recognition, and Braille Translation software that translates typed letters into embossed Braille characters, are very important learning tools for blind people [16].

The schools that deaf and hard of hearing children can attend are boarding schools, special day schools, special parallel classes or special classes within the general school and the choice depends on factors such as the degree and type of hearing loss, the intelligence, the presence or absence of other disorders, or the ability to learn [17].

According to the new Law on Special Education 2817/2000, students with special educational needs, including deaf and hard-of-hearing students, can study in the regular school classroom with parallel support from a special education teacher, who serves in the KDAY or in the school units of special education and is defined by the KDAY or in specially organized and appropriately staffed integration departments that operate within the schools of general and technical vocational education [18].

The special school is most often chosen on the basis of the specialized help it can offer the child, since deaf adults they act as role models for children, while general school and integration are chosen based on social acceptance. The education of deaf children in Greece is based on empirical educational practices without the required organization, supervision and guidance necessary to meet the educational needs of deaf children.

The ENG does not exist as a subject in the school curriculum. Parents of deaf children who choose "mainstream" school attendance argue that their child has the right to attend a less segregated environment than a special school [19]. In the "normal" school their deaf children have opportunities to communicate with the hearing world. Daily contact of deaf children with hearing children can help them develop communication skills, which are essential for their future lives.

On the other hand, Deaf Language is a kinesthetic-visual language, it is the main axis around which the most important issues of deaf culture and education revolve. Some experts argue that deaf children who acquire sign language as a first language later avoid and refuse to try to acquire sign language [20]. Stokoe after studying sign language argued that it satisfied every linguistic criterion of a real language in terms of its lexicon, syntax and ability to create an infinite number of intentions.

Despite this, the special school does not always provide the appropriate specialized learning structures [21].

James Fay (1869): "No, we are delighted by the ordinary achievements of the deaf and mute in the field of language. The majority of students who are born deaf graduate from our institutions without the ability to express their ideas using proper idiomatic language or to understand the language of books. Even college-entering students who make up the nation's highest-intelligence and highest-achieving percentage of the deaf and mute have difficulty understanding the abstract and often technical jargon of college textbooks."

Fay's comments reflect the difficulties faced by educators of the deaf for generations and are in line with the views of many of his contemporaries [22]. Choosing a special school seems to have negative effects on the child's social development. The deaf child may have to move away from his home to attend the special school, which may lead to his estrangement from his family [21].

A hard of hearing child learns language in the same way as a hearing child and is able to use speech to communicate. Of course, he needs support and help, as well as using headphones, if he has not undergone a cochlear implant. In the deaf child, the absence of the most important factor of communication with hearing people, the absence of hearing, has a direct and serious impact on their education, on their spiritual cultivation and development of their mental and emotional make-up, on the formation of their personality, social of his position and professional career, since the deaf child does not master oral communication reflexively but to a limited extent through interventional teaching [23].

Most hearing children come to school with the ability to process and integrate verbal information, whereas deaf children rarely have the same language background or similar language skills as hearing children, resulting in complex communication problems [24, 25] concluded that spoken language was not a necessary condition or even an important factor in early personality development [22].

3. Results and Analysis on the Use of ICT and Distance Learning in Children with Special Education Needs in Greece

The 59% of the participants were female and the 41% were male. The 57% of the participants were from 41-50 years old, the 26% from 51-60 years old, the 15% from 31-40 years old and the rest 2% from 24-30 years old.

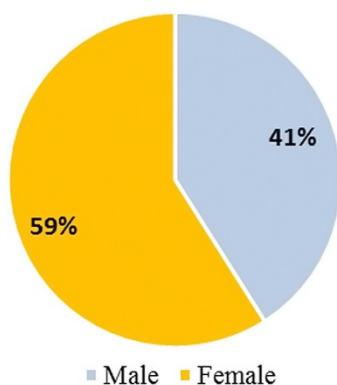


Fig. 1. Gender of the participants.

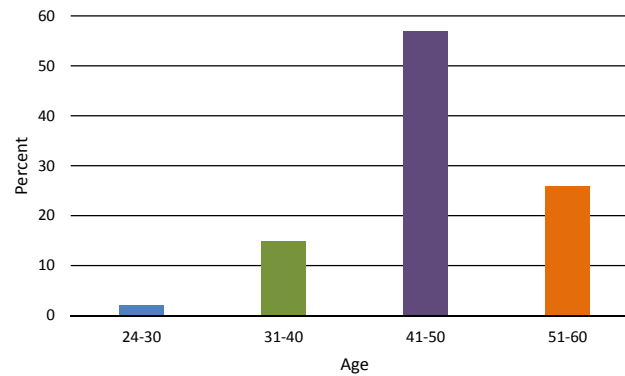


Fig. 2. Participants divided by age.

The 41% of the participants had a working experience in education from 11-20 years, the 32% over 20 years, the 16% less than 3 years and the rest 11% from 4-10 years. The 50% of the participants had a working experience in special education less than 3 years, the 30% from 4-10 years and the rest 20% from 11-20 years. The 41% of the participants have participated in seminars for special education, the 35% had a PhD and the rest 24% had a Master.

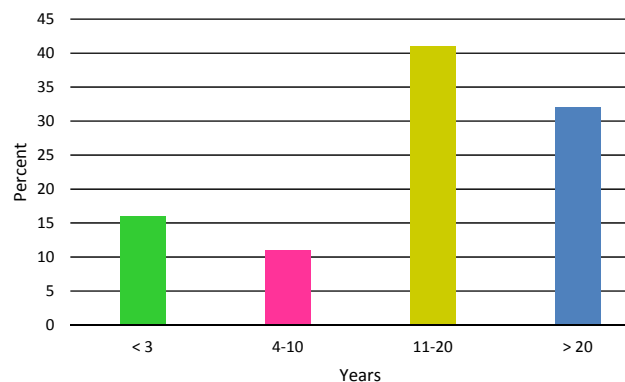


Fig. 3. Working experience in Education.

The 40% of the participants have dealt with children with Hearing impairment (including deafness) during their career as teachers in special education.

The 65% of the participants have dealt with children with Visual impairment (including blindness) during their career as teachers in special education. The 74% of the participants have dealt with children with Developmental delay during their career as teachers in special education. The 56% of the participants have dealt with children with Down syndrome during their career as teachers in special education. The 39% of the participants consider the use of ICT in Children with Special Education Needs quite important, the 30% moderately important and the 26% very important.

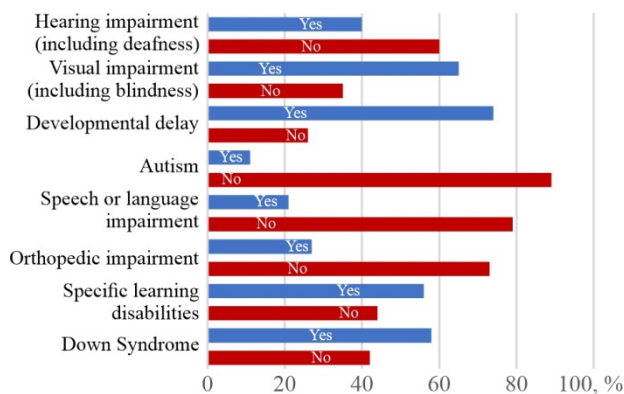


Fig. 4. Question: Which categories of special needs children have you dealt with over the years?

According to the above mentioned, two specific (2) definitions have been formulated from the international arena, which, however, deal with special education and training from a different point of view. In the first case, where special education and training is treated sociologically, it is pointed out that its importance depends on the positive consequences it has in society, in the educational sector and in general in everybody that has to do with it [26]. However, the second definition argues that special education and training is not defined by the context in which it is provided but based on the particular requirements of the student. Furthermore, a clarification is given regarding the disadvantages that are not linked to the individual but to the respective school context and the wider social one [3].

From the above definitions, it becomes clear that there is not a complete definition for special education and training but also that the reason for its existence and its contribution have been recognized. Furthermore, it is emphasized that special education and training is not necessarily offered in a separate context, but a student can receive it within the general school and that the reason for existence its purpose is not to impart knowledge to students with special needs but to equip them appropriately so that they can socialize and balance any adjustment difficulties they may have.

4. Conclusion

Education is an important and integral part of society. Regarding the society of deaf students, many elements are observed that make this part of the population in a position to be investigated more and to be helped especially in the matter of education. These children are in need of aids that will cover the deficiencies created due to hearing loss. Interactive applications are an accessible and easy-to-use means to increase the quality and effectiveness of these children's learning. In addition, play is one of the most important means of communication for children.

Deaf people and people with disabilities in general from antiquity to the renaissance were not accepted by society and for this reason lived on the margins without rights and education. The role of the teacher is particularly essential both during the evolutionary course of the pedagogical process and the practical implementation of every educational policy. For this

reason and at the same time for how special and complex he is, a lot of research has been done in order to clarify in detail who exactly he is. As it has been argued, the one who is called an educator should, throughout his professional career, develop and interact with his peers in order to become better.

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