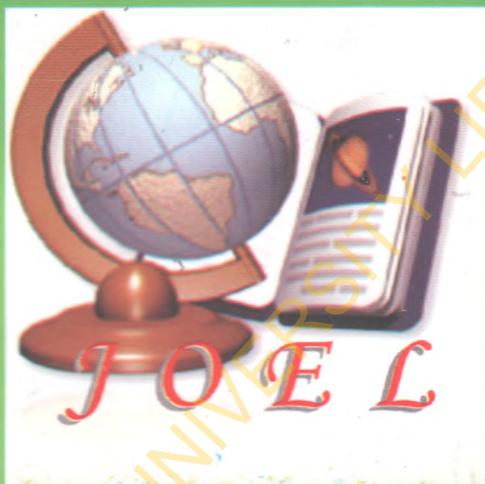


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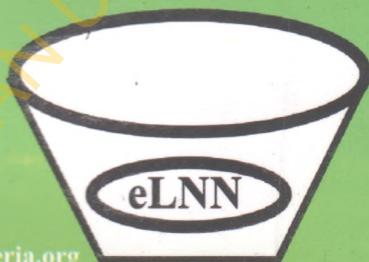
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THE PLACE OF E-LEARNING IN SPECIAL EDUCATION

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Abstract

The traditional pedagogical methods of teaching have promoted rote learning among children where the traditional learner is a passive recipient of whatever is being taught. Today, there is the challenge of integrating e-learning at all levels of education. However, exceptional children who have different types of impairments have not benefited immensely like their able-bodied mates and those in developed nations like USA and Europe. This paper, however investigates the place of e-learning in special education, the supporting theory, as well as e-learning solutions for teaching children with special needs and customizing e-learning for both students and teachers. The study used 19 female participants with different spans of work experience, and found out that they possess positive dispositions towards e-learning in the educating children with special education needs.

Introduction

Generally, it is frequently posited that the use of ICT accrue benefits to the teaching-learning process, not just as go-in-between in communicating existing knowledge, but also by fascinating myriads of the youth of today who are fortunate to have a host of these technological innovations and products at their disposal for use. According to Radabaugh, (1993), a former

employee with the IBM disability support centre who is often cited by authors in the field of special education and ICT research, for most people technology makes things possible. This statement is of particular reference to those who for some circumstances are deprived the potential that ICT represents in their daily living.

Indeed, there are numerous Europeans and international studies that substantiate the benefit of the association of education with technology, with conclusive evidence of improvements in participation and performance (Balanskat, Blamire & Kefala, 2006; BECTA, 2007 and 2003; Liu, Cornish & Clegg, 2007; Williams, Jamali & Nicholas, 2006; and many others). Kivinic, V. Vidacek- Hains and Kovacic reaffirm that when compared to traditional education, computer-aided education has largely proved to be more effective and efficient, primarily owing to additional motivation enhanced by the interaction with the computer (Kirinic, Vidacek- Hains & Kovacic, 2009:42).

The concept of inclusion reports to the physical, social and academic insertion of the students with Special Education Needs (SEN) in regular classrooms, assuming that heterogeneity between students is a very positive factor for the learning experience of all, enriching it and making it more proficient (Correia, 2008). The inclusive perspective searches for a school for all and customized educational response to the specific learning needs of each student.

A school that pursues a full incorporation of students with SEN, and therefore an inclusive school, must recognize and satisfy their particular needs, coping with different learning paces and styles, experiences, the relationship of the individual with his/her environment, through curricular adaptations, diversified pedagogical strategies and good management (Santos, 2006). It must strive for equal opportunities, minimizing disabilities in a way that the SEN students can make the school and social pathway the less restrictive possible, as stated in the 2004 UNESCO Salamanca Declaration (UNESCO, 2004).

Fonseca (2008) emphasizes that it is crucial to provide children with SEN with a specialized educational intervention as

means and special care varies according to the specific needs of each one for the full development of their capabilities, the educational support provided by trained and specialized professionals, assisted by means and techniques also specialized, constitutes a form of aid/support for the student who needs to see his/her disadvantages reduced or overcome.

ICT reveals itself, in this way, as a powerful tool, in a manner that can diminish the disabilities and incapacities of the students with SEN promoting the school and social inclusion (Santos, 2006). With students having more severe problems/conditions, that pose a disability causing dysfunction, ICT can act as an individual assistive technology, resolving functional problems, towards compensating or substituting the affected function that could be sensorial, motor or cognitive.

However, the applicability of ICT in special education does not run out in its role as an assistive technology, as in regular education, but may be with more relevant ICT assumes itself as an important tool at the service of teachers and students to overcome barriers and promote the acquisition of skills. Sancho & Hernandez (2006:148) summarized this idea by saying that the use of ICT enables varied answers, because it allows different types of presenting information, diverse ways of expression and learning and various forms of involvement, in response to the complexity of factors of learning and teaching.

Statement of the Problem

Exceptional children, due to their disability problems, have shown traits and traces of retroactive and proactive inhibition and conflict of ideas being presented to them by teachers of forgetting ideas, learning cues and conception presented to them, shortly before leaving or after their classroom. This has hitherto made them not to be able to recall what to put down during test/examination. Many of them have thus performed woefully in school examinations or public examinations. The paper thus investigates the impact of including electronic media in the

exceptional students to enhance recapitulation of ideas and be able to improve their academic performances.

Significance of the Study

This work assumes that the introduction of electronic media for the teaching of the exceptional children would enhance recapitulation of ideas and reduce forgetting syndrome observed among these categories of students. Also, electronic media will boost their language development and academic performances.

Research Question

1. Would the inclusion of electronic media enhance recapitulation of ideas among exceptional children?

Review of Literature

Many countries adopted the use of electronic media to teach children with exceptional needs in primary, secondary and tertiary institutions to recapitulate and understand ideas, which include:

- Hearing impaired
- Educable mentally retarded
- Physically challenged
- Visually impaired
- Health impaired children

Ojogwu and Ipense (2008) identified hearing aids as the commonest means for collecting information by the hearing impaired. Okuoyinbo (2001) also corroborated this assertion by saying that the only way the deaf person can receive information is through the use of hearing aids. Omoniyi (2005) opined that children with learning difficulties such as language identification problems and speech disorder disturbing their learning could be assisted to realize their potentials if selected media are used which include:

- Visual aids
- Films strips
- Transparencies graphs and

- Pictograph
- Speech synthesizer

Chukwu (2003) identified electronic devices such as the use of television, video, colour printing, projectors, audio recording on repeated basis and complement instructions can enable learners to learn the content of instructions thus, making them to retain significant amount of materials. According to Geoffrey (1992) the use of computer sets as veritable devices for information dissemination of other countries for the use of individuals able or disabled.

From the above, inclusion of electronic devices for teaching exceptional children could be better imagine if it would aid information and recapitulation of ideas and it would be discussed below.

Perceived values of electronic media for educating the exceptional children

Omoniyi (2005) affirmed that the importance and values of electronic media in the teaching and educating persons with special needs. He opined that electronic media are veritable tools for language development; it could be used for facilitating understanding, retentions of messages and remembrance of instructions

The following media according to him such as filmstrips, charts, posters, hand outs and so on could be used to complement learning and recapitulation of ideas already taught by the teacher or instructors. Different observations revealed that exceptional children taught with the use of electronic media such as films, slides, television; overhead projectors and so on readily recall or remember what is being taught especially when sign interpreters are included to sign to the deaf.

Numerous teachers interviewed have also affirmed that radio, television documentary, audio tapes and audio CDs that combine pictures and voice are veritable tools for teaching persons with visual impairment.

While the recent innovation of Braille keyboards and printers have enabled persons with visual impairment to operate and retrieve information from the internet using computer set, the deaf children could also be trained to use GSM phones to pass and retrieve information through SMS or text messages, and also television could be used to disseminate information to the deaf with an interpreter placed side by side with a broadcaster or discussant on a programme. Hence, electronic media could be better utilized for mentally retarded children if documentary pictures of objects are well designed to carry different colours to attract the interest of the children and the use of music as a therapy has been used by experts to cool the tension of emotionally disturbed individuals.

Winnebrenner (1996) says that the effective use of technology in the classroom shortens the gap between potential and performance, especially in regards to students who struggle to learn. BECTA, in its 2007 Annual Review, adds that ICT also reduces the gap between student with high and low performances, helping more students to be successful in learning and motivating and supporting those most disadvantaged and destitute of interest. The discussion about the usefulness of ICT in the education of SEN students is already a concern for many European governments as presented in the 2001 and 2003 reports of the European Agency for Development in Special Education Needs (EADSEN) in which it can be read that "most countries agree that access to ICT can reduce inequalities in education and that ICT can be a powerful tool in supporting educational inclusion. The digital resources that could be developed within the education systems of countries may seem particularly promising in education of students with special educational needs. (Meijer, Soriano & Watkins, 2003:44)

THEORETICAL FRAMEWORK

This study is based on cognitive theory. The cognitivists create a mental model of short term and long term memory. New information is stored in short term memory, where it is

“rehearsed” until it is ready to be stored in the long term memory. If the information is not rehearsed, it fades from short term memory. Learners then combine the information and skills in long term memory to develop cognitive strategies, or skills for dealing with complex tasks. Cognitivists have a broader perception of independent learning than that held by behaviorists: students are less dependent on the guiding hand of the program designer and rely more on their own cognitive strategies in using available learning resources.

E-learning solutions for special needs teaching

There are many e-learning solutions to help teachers with special needs education, including online student’s assessments tools, customizable lesson plans and software programmes to aid in the instruction of students’ basic life and social skills, as well as academic. What is E-learning? It is any learning done using technological tools such as the internet or software programmes installed on a personal computer, as well as technology that can help with the delivery of information. (Karen, 2010). Using e-learning solutions, teachers of students with special needs can help them learn at their own pace, and they can design lessons that are highly customized to meet their students’ needs. Using e-learning tools, teachers can also help students with disabilities keep up with their school work if they expect to be home bound.

Finally, there are many e-learning solutions for teachers who wish to further their own understanding of special education. (Karen, 2010).

Electronic Assessment Tools, Lesson Plans and Educational Materials for Teachers.

Before deciding on a curriculum for a special needs classroom, teachers will need to evaluate their students to determine their abilities for learning and current skills sets. Teachers can find many assessments tools online, some of which are free. For example; Yacapaca is a comprehensive collection of thousands of free dyslexia evaluation test provided by Ron Davis’ reading

research council, and a learning disability screening quiz at about. (Karen, 2010).

Many sites also offer online lesson plans and teaching materials that are available for downloading. One example is the unique learning systems website, which provides the option of a yearly subscription to teachers. With the subscription comes new monthly downloads of educational materials specifically designed for students with special needs and segregated into four separate age “bands”. The cost for a subscription is significant, but they do offer a free summer curriculum. (Karen, 2010).

Customizing E-learning for Students and Teachers

One of the great advantages to using E-learning solutions for students with special needs is that many of these tools can be customized to meet each of the students’ specific learning needs. Web tools and computerized training materials can be presented in such a way that students will learn at their own comfort levels. Teachers can modify lesson plans and have students focus on their unique educational goals along the way. (Karen, 2010).

Additionally, teachers can take advantage of E-learning solutions for their own professional development through online courses in special needs education. Online classes and webinars are very flexible in that teachers can take the special education classes that interest them (or meet a professional goal) at any time and virtually anywhere. This flexibility in scheduling will provide special needs professionals with the ability to keep working while also learning at their own pace.

Special needs teachers can use E-learning solutions for students evaluation, lesson planning, curriculum development, and professional developments. Blending the use of technology with traditional teaching methods will help teachers be successful in the special needs classroom. (Karen, 2010).

Design

The group of respondents was composed of 19 female individuals, with different spans of work experience the professional group

consisted of 10 special education teachers, 1 educational support teacher, 2 basic education (1st cycle) teacher and 6 kindergarten teachers. Of the whole group, 9 individuals were responsible for direct support to students with SEN and the remaining dealt with those pupils in regular educational contexts. One should stress the demand for training of those that deal with students with SEN in regular educational contexts that include other children without SEN.

Instrument

The questionnaire used for the collection of data was a 4-likert scale with items on regular and specialized ICT skills, ICT training background and ICT used for management, materials creation and pedagogical purposes. In addition, respondents were asked their opinions and beliefs about the use of ICT with SEN students

Data Analysis

Collection, compilation and processing of data to describe and interpret the reality of actual perceptions, skills and training needs of this focus group were collected. The results were subjected to descriptive analysis in order to provide a global perspective on general ICT skills and a focused perspective on specific skills.

Results

All respondents (19) showed interest in the pedagogical use of ICT with students with SEN. In particular, 12 of the respondents revealed high interest in this matter, 6 reflected moderate interests and only 1 indicated low interest. Almost the entire group of respondents agrees that ICT offers significant educational benefits and that it can help students with learning disabilities overcome the obstacles imposed by their disabilities (17 fully agreed, 1 agreed and 1 missing answer). Furthermore, the entire group believes that ICT brings pedagogical advantages to students with SEN. In addition, approximately 17 respondents

believe that ICT is a factor of increased motivation and participation for students with learning problems.

These answers were confirmed by nearly all of the respondents (18 out of 19) that are motivated for the use of ICT in education of students with SEN and who think that ICT training in this areas is of major importance for their work in supporting the education of these students. The same number of respondents acknowledges that special education professional training should encourage the use of ICT with these pupils.

Majority of the respondents reported that they had frequent and long term use of computers, mainly for elaboration of written class materials and for administrative functions. Their answers stated that the use of the computer in direct intervention was not so frequent, although 6 made educational activities at the computer with high frequency.

The question about the respondents ICT training background was a cumulative multiple choice item. In this section, the results showed that 10 respondents received their ICT training in their higher education. Also, 5 respondents said that they had attended training courses at their work schools and another 5 from the ministry of education training courses. An equal number of respondents stated that they were autonomous learners. Only 1 respondent had complementary or specialized training in ICT.

When questioned about specialized training for pedagogical applications of ICT, 7 respondents said that they had attended some types of pedagogical use of ICT training. In the specific SEN oriented ICT skills. 17 respondents responded not have attended any sort of training in the use of specific SEN pedagogical software. As regards training in assistive technologies, the situation is slightly less negative, but only 3 of the 19 respondents had some training in this area. About their global ICT skills, a larger number (14) said that they had reasonable skills in computer use.

In the detailed inquiring about ICT skills all of them indicated the need for more general (operating system and

productivity tools) and, specific SEN ICT training (specific SEN software, accessibility options of the operating system and assistive technologies).

Each area of training needs had available a classification from high priority to low priority: in specific software for SEN, 15 respondents classified it as a high priority; the classification of high was given in 12 cases for assistive technologies; in general educational software only 2 respondents classified it as a high priority for general ICT was attributed by 4 respondents.

In the screening of confidence in the use of ICT the survey showed that only 4 of the 19 respondents have confidence in their technological abilities and only feels that he/she has sufficient ICT training for an efficient response to the needs of students with SEN. Only 2 respondents feel that their ICT knowledge is updated.

When asked about available ICT for SEN training courses, 13 respondents think that the offer of specialized training isn't enough while 4 respondents agree that the actual training courses satisfy their needs.

Discussion

The results seem to confirm other studies that conclude that special education teachers support the use of ICT as a useful tool in the education of students with learning disabilities. For their greater proximity to the educational process, teachers are clearly defenders of the use of ICT in education as shown in various studies particularly in the survey conducted with Halian teachers by Benigno, Bocconi & Ott (2007) and with Swedish teachers by Brodin and Lindstrand (2003). In the first study there is recognition of 75% of respondents of the potential of ICT in fostering inclusion and in the second, of 79%. This inclusive potential is recognized by EADSEN in their 2001 and 2003 studies, already mentioned, which called for their effective uses, encouraging the resolution of the factors impeding its use.

All respondents agree that ICT constitutes a valuable educational tool and a way to facilitate access and participation, thus contributing towards the full inclusion of these struggling

students, this being the major concept defended by several authors worldwide. Florian and Hegarty (2004) realized that inclusion is a feature that defines ICT and added that they act as equalizers to be used in overcoming barriers for all students, but especially for those with disabilities, in any context where learning takes place. Abbott (2007) and Schlunzen and Junior (2006) added that ICT can provide greater independence to the students and can unravel their hidden potential.

Hence, the acceptance of computers as allies and the recognition of their value in the work with students with SEN by special education professionals seem not to constitute an obstacle, contradicting their regular education colleagues where still 1/5 of European teachers have doubted or denied any benefits in the use of ICT in education (Balanskat, Blamire & Kefala, 2006).

Besides the direct educational advantages and barriers destruction, these professionals also believe that ICT contributes for increased motivation and even act as disciplinary tools stimulating attention and good behaviour as supported by numerous studies (BECTA, 2003; Florian & Hegarty, 2004; Sparrow hawk & Heald., 2007; Williams, Jamali & Nicholas, 2006); just to mention a few.

We noted that a large percentage of professionals had acquired ICT skills in their higher education studies but at the same time feel they aren't prepared for an adequate work with students with learning disabilities, reinforcing the idea that some have ICT skills but don't know how to apply them in an educational manner. We agree with Abott (2007) on that part of problem frequently lies not on the non-use of technology but rather on its misuse.

Almost all the respondents revealed a frequent use of computers to help managing administrative tasks. This issue is of great importance and we must note that indirectly, by simplifying the teachers' management duties, ICT also contributes towards a good attendance of students with SEN.

The biggest slice of training provided comes from higher education studies, but all the respondents reveal lack of training and ask for more training, leading us to think that even recent graduate teachers don't possess enough ICT competence and that there is a need to re-educate them as Peralta and Costa (2007) stated in their synthesis of an international research.

Confidence in their skills is also an issue that has to be worked on (Balanskat, Blamire & Kefala, 2006; Peralta & Costa, 2007), substantiated by adequate training, given that only a minority of respondents has confidence in their ICT skills regarding their insufficient training.

Research evidence presented by studies conducted with professionals, students and direct observation is conclusive that ICT helps demolish barriers for people with physical, visual, hearing, cognitive and even psychological impairments.

Summary

A large number of special education professionals agree on the fact that Information and Communication Technology (ICT) is an important tool for teachers and students to overcome barriers and promote the acquisition of skills. ICT can promote school and social inclusion by diminishing the obstacles for students with Special Education Needs (SEN).

A correct educational implementation of ICT depends strongly on the teacher's awareness of their possibilities in the classroom their training and their capacity to adapt to the differentiated learning styles of SEN students. However, the lack of training on ICT is one of the most frequently pointed reasons for not using or misusing them as pedagogical tools or individual assistive technologies among pupils with SEN.

This paper reports the findings of a survey conducted among female SEN teachers. They were asked to analyze the acquisition of general ICT skills and specially oriented ICT solutions for students with learning disabilities. The collection, compilation and processing of the survey's data describes and explains the actual perceptions, skills and training needs of this

professionals group. The results seem to confirm other studies earlier mentioned and conclude that special education teachers support the use of ICT as a useful tool in the education of students with learning disabilities.

Conclusion

The study was conducted with a small group of respondents so that inference about their training needs and assumptions that might underline training model without the pretension of major generalizations. Special education professionals, play a vital role in the implementation of ICT in the present and future classrooms as an additional aid for the education of persons with particular learning needs. Their technical and pedagogical training in the use of ICT in today's classrooms can constitute a barrier or an adjuvant for an innovative and supporting use of computers with all their underlying potential.

Although the professionals that participated in the study believe that ICT is an added value for the education of students with special needs it becomes clear that it plays a secondary role in their work, as it serves mainly as platform for the production of written materials that will most likely support conventional teaching strategies. As stated by many researchers, the goal of ICT use lies not in the replication of conventional methods, but in the use of innovative methods adapted the specific needs of students with some forms of impairment, like the implementation of accessible teaching-learning strategies and the production of contents and materials that allow access and participation otherwise denied to these students.

As observed from their own perceptions, professional that work with students' special educational needs don't possess enough skills for a proper and optimized use of ICT with those pupils under their responsibility. They lack general oriented solutions for special educational needs on specific software and Assistance Technologies. This is, in itself, a worrying solution, raising issues about the quality of services offered to students

that may depend on adequate use of technology to ensure their access and proactive participation in learning.

Applying the survey at the initial phase of the training subject (opening session) played a key role by acting as a diagnosis that influenced the following training sessions, shaping and tailoring them to the real needs of the learners. What was intended to be training program on the specific use of ICT applied to SEN became, in a first instance, a training course for the acquisition of skill targeted to support students with impairment in their education. The lack of familiarities of the trainees with costless ways of accessing a computer, raised by collected data, led to conduction of a practice session on the native accessibility of the operating system.

This study considers, within the spectrum of knowledge required by a professional to conduct his/her activities to support students with learning problems, basic skills in specific oriented ICT for SEN should be included so that when he/she faces a technology that accompanies a young person with impairments, he/she is able to plan a first intervention/assessment. And more importantly, we must consider that a correct educational implementation of ICT strongly depends on the teachers' training and capacity to adapt to the differentiated learning styles that he/she encounters in his/her teaching of SEN students.

Teaching and learning are increasingly relying more on technology for students that deviate from standard learning, multimedia, computers and access enabling technologies, transforming learning into a "normalization" experience that must be adopted by teachers of today and tomorrow. At a time when we are experiencing the implementation of the inclusive school, research on the inclusion of students with SEN in schools with the support of ICT presents itself as an area of research and intervention with unquestionable interest. ICT has the potential to empower students, promoting/facilitating the full apprehension of their educational background and developmental process.

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