

DIGITAL LEARNING TOWARDS INCLUSIVE E-EDUCATION FOR STUDENTS WITH DISABILITIES

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Abstract

Educational technology occupies an important place in the teaching learning process in the modern world and the main aim of digital learning is to improve the effectiveness of the students' all-round development. It also helps teachers to teach well and learners to learn better and digital learning effects on quality education and the quality of teaching. Inclusive Education (IE) for students with disabilities has been newly granted in schemes and plans in India and digital learning contents both e-learning and e-teaching are placed into roles in information and educational technology incorporated in various educational programs and the e-teacher is essentially powerful towards inclusiveness teaching for special needs. The present study highlights digital learning for inclusive e-education for students with disabilities at school level and provides suggestions and recommendations in a concluding manner that schools can implement to start all programs by the best practices in a normal school environment. The results suggested that schools can implement digital learning towards inclusive e-education if they are correctly arranged, involved and run all the plans. Also propose techniques in changes in curriculum, teaching strategies, assessment methods etc. towards the requirements of special needs students in the 21st century.

Keywords: Curriculum, Digital Learning, Inclusive Education, School, Students with Disabilities, Teacher

Introduction

The rapid advancement in digital learning has been greatly influenced by the teaching learning process and integration of digital learning inside and outside of classrooms helps to create the best environment for all students for meaningful and successful learning. It supports students in their constructive thinking and allows them to do better. The concept of digital learning plays an important role in inclusive e-education and educational technology applied by teachers at all levels of education in different educational levels and teachers must be ready to use digital learning and computer literacy for the special needs students towards teaching at school level. He/she acquire, improve knowledge, skills of teaching digitally and of guiding students' learning and finally general teachers start inclusive e-education effectively. The e-inclusion offers a variety of positive academic, social, and behavioural opportunities for students with special needs and the increased use of information and communication technologies in everyday life and development of adaptive hardware and software have allowed individuals with disabilities to do things that were difficult/impossible for them to do in the past. One of the reasons is lack of teamwork in creating e-learning technology-supported processes and teaching however, e-learning technology can promote the inclusion of students with various disabilities. Digital technology can be used to improve teaching, learning and help all students be successful in e-inclusive education. Digital learning always improves the academic skills of students with disabilities, also helps for preparing all special needs students for their future careers. Information technology inside the classroom is an effective way to connect with students of all learning. Modern learning is about collaborating with others, solving complex problems, critical thinking, developing different forms of communication, leadership skills, and improving motivation. It creates classrooms with digital learning tools, such as computers, hand-held devices, learning materials, finally, supports learning 24 hours a day, 7 days a week and builds 21st century skills. It leads not only to better grades, improved teaching and learning and helps all students be successful. Instead of the teacher being the only source of help in a classroom, students can access web sites, online tutorials, etc. Examples of digital media include software, digital images, digital video, video games, web pages

and websites, including social media, data and databases, digital audio, such as MP3 and electronic books.

Objectives

- To provide an outlook on digital education for students with special learning needs.
- To provide an outlook on the resources, assessment methods, teaching and learning approaches to meet individual learner of special needs.

Methodology

The study has been conducted based on the method of document review in accordance with the qualitative approach of research and has been done on the basis of the secondary sources of data like books, research journals, articles and different websites towards “Digital Learning towards Inclusive E-Education for Students with Disabilities”.

Common Practices in Inclusive Classrooms

- ❖ Involving students in solving problems
- ❖ Teaching students to look for ways to help each other
- ❖ Encouraging students to take the role of teacher
- ❖ Focussing on the strength of a student with special needs
- ❖ Taking breaks when necessary
- ❖ Developing an area for children to calm down
- ❖ Organizing student desk in groups
- ❖ Creating a self and welcoming environment
- ❖ Helping to establish short-term goals

Advantages of Inclusion

- ❖ Develop broad-mindedness and celebration of diversity
- ❖ Normal students learn how to guide and help others who are impaired
- ❖ Special needs students learn effective friendly nature
- ❖ Build higher expectations on each child
- ❖ Inculcate easy access to the general content

- ❖ Changes in less separation at all levels
- ❖ Create more attachment to teachers, peer group, tools, resources etc

Technology towards Special Education

There are many ways of how technology can help students with special needs and using technical tools intended for **human speech recognition and synthesizing**, students can avoid the usage of paper and pen during the teaching and learning and it would be also helpful for students with disorders that don't allow them to process visual information correctly. The **adaptive computing** technology helps using digital devices to all types of difficulties who face challenges. Screen reader applications along with specially designed Braille keyboards allow 21st century visually challenged students to use the computer. **Augmentative communication** systems help students with speech problems to overcome all communication concerns, also picture charts, books, and specialized computers providing functions of word-prediction are far more effective communication for all disabled students.

The Role of Digital Learning in Inclusiveness-

Digital technology application is very important as it plays a crucial role in providing high quality e-education for students with disabilities in an inclusive classroom setup. ICTs have been introduced into the teaching-learning process in order to upgrade quality, reinforce curricular changes and new learning experiences. In this way it is possible to meet the specific learning needs of different learner groups, including students with disabilities. Inclusive education presents an opportunity for students with special needs to attend mainstream classrooms with their age-group peers. Promoting digital learning infrastructure for special needs is necessary in order to provide for the appropriate conditions of teaching and learning. Digital learning tools must be used to allow students with SEN to participate in the educational process based on special techniques and equipment. The key ways in which technology can support educational opportunities for people with disabilities are identifying the preliminary level of personal development by shaping new skills/updating existing ones, improving the access to digital information also, the willingness of teachers to develop innovative teaching methods to change and adopt the existing approaches to accommodate new concepts of special needs education and modern technologies. If a learner is unable to

manage a particular activity, alternative activities must be designed or adapted, so that he/she gets a chance to receive the needed information and demonstrate the results. The modified curriculum must preserve the skills/knowledge required for a particular subject and distribute knowledge and training resources in a more creative way and teaching subjects can utilize a variety of technologies to facilitate learning and interaction between participants: asynchronous and synchronous communication and collaboration tools like e-mail, bulletin boards, whiteboards, chat rooms, videoconferencing, and teleconferencing, interactive elements like simulations, immersive environments, and games, various testing and evaluation methods like self-assessment, multiple choice testing, etc. At the same time, technology can break teacher's isolation, providing them with prospects to communicate beyond the traditional school-management hierarchy.

Web-based Inclusive E-Education-

Web-based solutions help to participate in the learning process to the same degree with other students. Students with special needs can face issues associated with moving over long distances and it allows providing educational services taking into account the interests of all students and schools, also offers students an easy-to-use and intuitive tool for tracking academic progress.

Online App for Inclusive E-Education-

Special education software helps students with disabilities to reach their potential. Individualized Education Program (IEP) software simplifies the work with children that have learning issues caused by brain injuries, developmental delays, intellectual disabilities and response to intervention software provide tools required for assessment of students' knowledge.

Teachers Role in Digital Learning for Inclusive E-Education-

Digital learning is based on some technological standards of teachers' professional dealing standards and some standards are described as the general teachers' competence in the application of ICT, and some standards are described as specific e-competencies for inclusive e-education system modelling like e-learning, e-teaching, etc. There are three dimensions of the teachers' ICT-competencies like ICT awareness, ICT readiness, ICT drill, ICT practice. ICT integration in everyday teaching and learning systems which is defined by three key components, like knowledge of pedagogy, knowledge of

subject matter and knowledge of technology support. Teachers can be in a position of the creator of the e-teaching process or the user of the e-teaching/e-learning attainment. Teacher activities in e-teaching scenarios can be broken into two major tasks mainly, providing the content for the students and supporting communication between students therefore, modern teachers and e-teachers should be able to organize different types of e-learning and e-teaching levels. Finally, the importance of e-moderation in different teaching situations supported by the communication and e-moderator is one of the teachers' roles in e-teaching, especially in the 21st century inclusive e-teaching.

Digital Support for 21st Century Inclusive E-Education-

People with disabilities are entitled to the same human rights as all other citizens and in most countries, people with special educational needs usually include the subgroups like people with specific learning disabilities, persons with visual impairments, persons with hearing impairments, people with slower cognitive functioning, autistic people, people with neurological and other diseases, people with complex cognitive, emotional and social difficulties, people with multiple difficulties, and people with speech and language disorders. Assistive technology a hardware/software, used to increase, improve/maintain capabilities of persons with disabilities. It enables people with disabilities to execute tasks that are sometimes difficult/impossible to do without technical aid, and helps them to achieve their learning. Digital learning should be designed to promote participation, allowing all students to take part in all subjects and activities, enhancing cooperative learning, offering powerful opportunities. E-education like e-learning/e-teaching is the central part of inclusive e-education of students with disabilities and the planning of learning activities and the development of scenarios are emphasized, especially in the field of inclusive e-education of students with disabilities. The major benefits of developing digital learning for students with disabilities, positive effects of e-learning and education in e-environment on them and accessibility are peer support by using computer mediated communication tools and possibilities for peer-to-peer collaboration and to avoid social isolation. Digital learning education enables students with disabilities to be proactive and self-reliant, rather than reactive and dependent and teacher preparation for digital teaching students with disabilities is one of the most important segments of developing an e-learning environment for all.

Types of Technology Used in Special Education-

Assistive technology increases functional capabilities for people with disabilities and learning differences. Modern operating systems often include settings to adapt the software based on the user's needs. Technology can adapt to those learning styles to deliver content in the way that works best for the student. Special education students often rely on low-and no-tech items such as highlighters, organizers, pencil grips to position fingers correctly, raised paper with tactile cues to keep the child between the lines, timers to show how much time is left to mentally prepare a student for change, and magnetic sheets to hold words and pictures.

Advantages of Technology in Special Education

Technology helps special education students find their voice shows how students can communicate and express themselves with technology. These are students with autism, down syndrome, cerebral palsy and speech delays. Technology does more than accommodate students and level the playing field. One common traditional teaching method uses handwritten text on paper and in worksheets and workbooks. Some students struggle to capture their thoughts on paper because they have poor handwriting skills or because they cannot hold a pen/pencil. Technology gives students extra support that traditional methods cannot provide. Students with visual processing disorders may struggle with reading. Technology can read words out loud to help students who read along, matching the text with the audio recording. In a traditional classroom, the teacher teaches the students in the same way without considering individual learning preferences and differences and with technology, teachers can individualize learning and teach in smaller groups. Other benefits of technologies are increased independence, personalized learning, and better connection with peers, reduced anxiety, and easier communication and improved academic skills.

Drawbacks of Technology in Special Education-

One of the biggest drawbacks of technology use in special education involves cost. Digital technology tells the story of a student with cerebral palsy who struggled to keep her place while reading. Her teacher solved the problem by procuring a used iPad and installing an app that would sound out text. Another downside is the lack of teacher

training. Educators need training on how to make the most of technology and incorporate it into the classroom. Technology can create unrealistic expectations. Unless the technology has restrictions and blocks in place, students can get distracted by playing with apps/browsing the internet. Teachers want to avoid using technology as a babysitter.

Assistive Technologies for the Best Inclusive E-Education-

- ❖ Trackball
- ❖ Key guards and touch screen
- ❖ Enlarged Keyboard
- ❖ Braille watches and letters
- ❖ Low-vision software for magnification, screen and document reading
- ❖ Teletypewriter or telecommunications device for the deaf
- ❖ Voice Output Communication Aids
- ❖ Graphics database of Picture Communication Symbols
- ❖ Touch-sensitive keyboard
- ❖ Spelling correction software

Digital Tech Tools towards Inclusive E-Education-

- ❖ Abi Talk apps for speech therapy and special needs to directly download.
- ❖ EdShelf apps and read to educators about the tools for classroom use.
- ❖ A Day in Our Shoes apps for Autism and special needs, specific to disability.
- ❖ Bridging Apps offers bridge the gap between technology and people with disabilities.
- ❖ Helper Bird for open dyslexic font, overrides the text on a webpage to make it easier to read.
- ❖ Autism Speaks apps for developing social skills, behavioural interventions, etc.

Educational Implication and Suggestions

The current program for students with disabilities ability to meet the needs and maximise the learning of all children and young people with disabilities, the future capacity of the government school system to meet the specific needs of students with disabilities, the feasibility of shifting to a strength-based, functional needs assessment

approach for students with disabilities, capacity to support the Government's commitment to excellence in inclusive education, including an assessment of accountabilities, teacher educator institutions should provide teacher educators with in-service trainings, workshops and seminars on digital learning towards IE, education systems should provide in-service and pre-service training to teachers in computer assisted instruction and computer managed instruction in education, design digital learning based instructional material to facilitate online teaching and learning, the professional development and the teacher training policies should support the digital learning towards 21st century IE.

Conclusion

The use of technology in special education helps break the barriers for people with disabilities and provide them with access to the most relevant educational programs and properly designed software and hardware allow students with special needs to get modern education and achieve any required information online. Technology helps provide students with individual learning events and enables reaching higher flexibility and differentiation in educational methodologies. With modern technology, teachers can adapt to the possibilities of a particular student with minimum effort and choose one of the dozens of available learning tactics designed to meet the needs of individual learners and 21st century *teachers can use technology to offer a variety of learning opportunities and approaches that engage, instruct, and support special education students with a myriad of tactics designed to appeal to individual learners.* The framework of e-environment for students with specific learning disabilities includes assistive technology, e-learning and e-teaching technology. Digital technology plays a fundamental role in including students with some impairments and giving them the real opportunity to participate and to learn. The primary purpose of digital technology for students with physical impairments is to let them write and communicate. It is achieved with a wide range of input devices, pointing devices, and software to support writing, reading, drawing, and studying. Digital technology solutions are created to meet the educational needs of students with language and speech impairments. Digital technology tools to support learning skills like reading, writing, calculating, etc. and other school activities for students with specific learning impairments in learning.

References

Anderson, J., & Weert, T. (eds., 2002). Information and communication technology in education-A curriculum and programme of teacher development. Paris: UNESCO. Retrieved from: <http://unesdoc.unesco.org/images/0012/001295/129538e.pdf>. Accessed on 12.02.2021

Barrett, B. G. (2011). Strategic tool for students with disabilities: Creating and implementing e-learning opportunities in the virtual learning environment, INTED2011 Proceedings, 60766085. Retrieved from: <http://library.iated.org/view/BARRETT2011STR>. Accessed on 23.02.2021.

Bouraoui, A., Jemni, M. & Laabidi, M. (2007). A model driven framework to provide Accessible E-learning for Students with disabilities, ICTA 2007, April 12-14, Hammamet, Tunisia.

Bjekü, D., Krneta, R., & Milošević, D. (2010). Teacher Education from E-Learner to E-Teacher: Master Curriculum. The Turkish Online Journal of Educational Technology 9(1), 202-212.

Bjekic, D., Obradovic, S., & Vucetic, M. (2012a). Students with disabilities in e-environment: Psychological view, the third international conference on e-learning, 27-28 September 2012.

Hodkinson, A., & Devarakonda, C. (2009). Conceptions of inclusion and inclusive education: A critical examination of the perspectives and practices of teachers in India. Research in Education, 82, p.85-99.

Klomp, R. (2004). A literature review of the accessibility of e-learning for students with disabilities. Ottawa, Canada.

Schertler, M., & Bodendorf, F. (2003). Supporting the Teacher's role in web-based learning environments, ICOOL 2003. Retrieved from: <http://icool.uom.ac.mu/2003/papers/file/Bodendorf.pdf>. Accessed on 12.03.2007