

Support for students with Special needs during and after the COVID-19 pandemic through E-learning: a Case Study

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Abstract

Faculty in the university's department of special education had a lot of difficulties when it came to providing online learning opportunities for the group of students with special needs during the Corona epidemic. Five academic staff members who work with students that have special needs made up the research sample. To examine current systems and related worldwide studies, a systematic review of the literature was used. The results of the study show that academic staff members have a favorable attitude toward adopting e-learning programs for the group of students who have special needs. Additionally, they aid in these students' ability to manage educational involvement, social connections, and knowledge exchange. The academic staff showed disinterest in investing time in training and agreed that the technique did not call for more time than was often provided for regular class sessions. The academic department's members provided their thoughts on the development of systems and appropriate curricula, which will aid in removing obstacles and promoting support for e-learning for students with special needs for a variety of courses, as the research concluded. The academics' suggestions centered on how to employ e-learning for students with specific needs in an efficient way. Additionally, it was suggested that e-learning be introduced into curriculum, that departments be furnished with the appropriate software and educational resources, and that there be sufficient opportunities for education to enable teachers with special needs to acquire the required abilities. In proposed system, authors would recommend an AI based Chatbot, in higher educational sectors, so that the students who hesitate to come forward to discuss their issues, can also take advantage of support system by interacting and identify some common solutions.

Keywords: E-Learning, students with special needs, COVID 19 challenges

Introduction:

There was discussion on the evolution of community-based rehabilitation. The Kingdom of Saudi Arabia has worked very hard, completing the application in higher education institutions, as part of the donation to new stage of educational institutions and higher educational institutions (Abdul-Rahman et al., 2018). The Ministry of Education made an attempt to emphasize the use of computers in educational curricula in order to enhance learning and support it (Al-Ghamdi and Holland, 2020). These initiatives during the Corona pandemic gave the impression that academic staff members working with students who have special needs would take advantage of the various opportunities to use e-learning. Faculty members were given the opportunity to snap images and preserve their work as a result of the favorable impact on e-learning outcomes (Waight and Oldreive, 2020). (Babeley, 2016). Despite these advantages, the researchers discovered a resistance among teachers to incorporating technology during instruction in the classroom for a number of reasons, including: a lack of time, a lack of control, a lack of technical resources, a lack of technical competence, and feelings of inadequacy (Talvid, 2016). 2020 (Atanga et al.) Administrators in the field of education responded that measures like peer support, technical requests, and financial aid (Tusiime et al., 2020). Additionally, it was found that students with disabilities encountered a variety of difficulties in e-learning since they did not obtain appropriate help from their teachers to access adequate and quality education. On the other hand, it was discovered that students with disabilities confront unique difficulties in understanding the lectures that have been prepared for them since teachers have difficulty creating lectures that can be utilized to teach students with disabilities. Additionally, teachers did not receive the necessary training to equip them with the talents necessary to instruct pupils with disabilities (Tonks et al., 2021). Additionally, the stay-at-home orders had a negative impact on the students with

disabilities' physical and mental health, just like they did on other children. The COVID-19 pandemic's uncertainty has made it difficult for students with impairments to cope, which has had a negative influence on e-learning concerns (Jin et al., 2021).

The transition to electronic platforms has started to take place globally during the Covid-19 pandemic, and it has become an obvious option for student instruction. It wasn't an opportunity for policy change discussion; rather, it was pushed on faculty members. It was required to assess proficiency, pay attention to advise, and remove obstacles to the successful application of e-learning.

Objectives of the study:

The purpose of this study was to explore how faculty members view e-learning for students with disabilities, identify implementation challenges, and identify steps that might be implemented to improve this practice in higher education. Also, to propose a smart and intelligent solution through which special need students can interact to find solution to their problems even during off-office hours of their teachers using AI technology.

Study questions:

- How should e-learning be used for students with disabilities during the COVID-19 epidemic, in the department's opinion?
- What are the primary challenges to using e-learning for students with disabilities during the COVID-19 epidemic, in the opinion of the faculty?
- How do the academic staff members view the steps necessary to create the adoption of e-learning in educational institutions?

Literature review:

E-learning for students with disabilities

In February 2018, the Kingdom of Saudi Arabia created the Authority for the Care of Persons with Disabilities (Office of the High Commissioner UN Human Rights [OHCHR], 2020). The Ministry has provided assistance to anyone with disabilities, including students with disabilities (Abed & Shackelford, 2020).

According to Saudi Arabia's Disability Law, a disabled person is one who experiences hearing loss, vision loss, motor, physical, and mental disabilities, learning disabilities, speech and language disorders, autism, multiple disabilities, behavioral disorders, and disabilities that call for and require specialized care and rehabilitation. The detrimental effects of

inadequate learning chances nevertheless affect students with impairments in spite of these factors (Abed & Shackelford, 2020). The Kingdom of Saudi Arabia's educational infrastructure has expanded quickly, thanks in large part to the Ministry of Education's initiative to oversee education and the existence of strategic government backing (Al-Khalifa, 2010).

Due to the Internet's accessibility and the effectiveness of e-learning, there have been significant changes in methods and procedures in the educational sector. Additionally, it has promoted innovation, and e-learning has improved the quality of education through advancing teaching, learning, research, and development in the field of education (Al-Jaber, 2018).

The Career Transition Program for Students with Special Needs was applied to prepare students with special needs through elementary and vocational skills in addition to separate employment ways. This program is very necessary to ensure that Students with Special Needs are ready for employment after exiting school. This program offers students with training and skills in the actual world of a job. As a process of self-realization in real life, multiplexed) Students with Special Needs) requirements exposure to natural talents. Students with Special Needs should have the ability to diagnose and hone their basic potential and skill before assisting in basic vocational skills training. Students with Special Needs marketability is a significant aspect in the growth of human capital, which in turn contributes to national development (Shaffeei, Razalli, Hanif, 2020). Post-secondary Students with Special Needs market essential to possess basic skills in the fields of basic skills, personal qualities, interpersonal skills, and a propensity to be interested in chosen areas of work. Preparation for special education teachers in the career transition program is primary to make sure it is working as necessary by the Ministry of Education. Educators are essential to know and principal all parts of a career transition program for students with special needs. Additionally, the educators' requirement to be experts in skills simplifies the sessions in teaching and learning. Multitasking skills are a must-have component of student educators' teaching of special needs students. Consequently, they need to pay close attention to a career transition program as this simplifies the sessions in teaching and learning. In addition, these students also need to be prepared for the professional aspect of this program. As the professional aspect includes basic self-

management skills, social skills, communication skills, problem-solving skills, basic skills in technology, and a deep interest in the field. Possession of all these skills is very necessary for preparing students with special needs (Shaffeei, Razalli, Hanif, 2020). To publish all this information, the compliance part and the Career Transition Program guidelines need the knowledge and understanding of school officials. There should be cooperation between teachers, parents, communities, and the work industry. Schools and industry partnerships should be formed to allow students with special needs to work in the right field. In addition, quality modules should be provided to assist in compliance with policies and guidelines (Shaffeei, Razalli, Hanif, 2020).

There should be cooperation between teachers, parents, communities, and the work industry. Schools and industry partnerships should be formed to allow students with special needs to work in the right field. In addition, quality modules should be provided to assist in compliance with policies and guidelines. Career Transition Program is a stage for all special needs students in elaboration for the real workforce in general schools around the scientist. Students with special needs should be given the interplanetary chance to participate in their power and skills to their possibility. Students with special needs need to help them enter the field of work that welfares them to their full possibility. The requirement for a well-structured career transition program assists schools, special needs students, parents, as well as communities in the base of implementation and implications for future success (Shaffeei, Razalli, Hanif, 2020).

People, television, newspapers, magazines, and radio are sources of information. During the information explosion, it is not easy today to get the right amount or the right information. Our information needs may be for different purposes and motives, whether it is for academic purposes, culture, religion, and much more. Therefore, a teacher with special needs bears a great responsibility in the education and learning of students with special needs. teaching students with special needs require the school teacher a variety of information, as the teacher faces different segments of the special needs of the student, such as slow learning, deafness, visual impairment, autism, and others. Facilities construction, services, and collections according to the user's need and satisfaction have been after conducting research in libraries around the world on the behavior of seeking access to information and needing it as important. Therefore, it is important to determine the

information needs and the behavior of searching for it, to facilitate access to reliable information. This research paper discussed the behavior of the special education teacher in Malaysia and his information needs. The ability of this information to help the teacher of students with special needs is acknowledged. (Azhar, Juburham, Azuddin, Hashim, 2022)

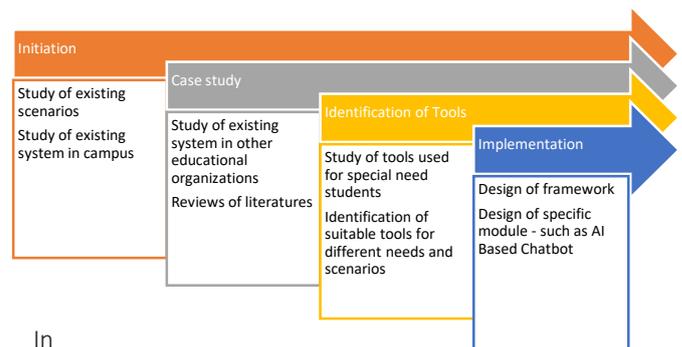
The first person to introduce the idea of American information is Robert S. Taylor, the information need reformer defines an individual or group's desire for information to satisfy their various desires. (Okonoko, Njideka, & Mazah, 2015).

How a person searches for the information they need using a particular technology or electronic media or tools for collecting information in a variety of library materials, such as encyclopedias and periodicals, emphasizes the behavior of searching for information is an actual requirement. (Kuhlthau, 2004).

Methodology

The majority of the secondary data used in this study came from reviews of previous publications and approaches. Interviews with educators who worked with the modules for students with special needs have produced extremely encouraging findings. It was clear that everyone concurred that the special needs children benefited from technology support both during and after the COVID epidemic.

Fig. 1 Methodology used in this research



In addition to teacher interviews, secondary data collection that includes literature reviews and case studies is the main tool used in the methodology for this research analysis.

Education Settings

There are different categories for the educational environment. Education is provided to students with

mild and moderate disabilities in source rooms, which are regular classrooms. Additionally, the student takes part in a curriculum with minor modifications. For students with mild and moderate cognitive difficulties who can't adapt to a typical environment, separate classrooms are still appropriate. However, they are permitted to share time for extracurricular activities during lunch and recess. The school offers a unique curriculum that differs from that of public schools and mainstream education. Students with disabilities attend school from the ages of six to thirteen or fourteen, while middle school students attend until they are eighteen. However, following middle and primary school, many of the pupils cannot access any type of vocational training (AlAjmi, 2006). The primary objective of the educational facility is to offer vocational training that would result in enhanced employment skills (Ministry of Health Care, 2010). Creating a significant problem for general education settings is the challenge for businesses.

Students with significant disabilities are categorized differently. 96% of pupils have numerous types of disabilities, the majority of which are severe, according to the Saudi Arabian education ministry's 2008 statistics. Data for 2007–2008 was compiled.

Students with severe disabilities typically continue in separate educational settings, which limits their ability to communicate socially. Children are given food, financial assistance, and housing at the special education centers. As there are greater distances between schools and families' primary residences, families are also not permitted to meet the students. The individual education program (IEP), which is altered for each curriculum in the school, is a significant issue for impaired pupils. Because the IEP program is created based on the general syllabus, it frequently falls short in terms of addressing specific requirements. Students with disabilities, however, require particular direction for special education. Additionally, private institutions lack the specialists needed to create the IEP program. It necessitates the employment of physical and occupational therapists in special schools who are able to ascertain the needs of the students and establish rapport with students who are impaired. Services for students with mild and moderate disabilities are available in several public schools. Children who are disabled are not included in the general public, and the segregated environment for impaired students occasionally falls short of justifying the needs of each individual. Segregated educational environments do, nevertheless, exist for a variety of reasons, some of which include inadequate

training provided in public institutions. Additionally, it is sometimes assumed that disabled children could hurt or put other students in the general population in danger. Special education and children with impairments are the subject of a distinct theory that is incompatible with conventional educational settings (Al-Faiz, 2006, p. 21).

E-Learning Apps

Table 1 shows the list of suggested e-learning tools for the students with special needs.

Categories	Apps
Apps for Dyslexic Learners	Sound Literacy What Is Dyslexia Dyslexia Quest Happy Math Multiplication Rhymes Read 2 Me Phonics with Phonograms Dysegxia DD's Dictionary: A Dyslexic Dictionary
Apps for Autistic Learners	Sight Words Sequences for Autism See.Touch.Learn Words on Wheels Verbal Me Autism iHelp Autism / DDT Shapes Autism DDT Letters Speech with Milo
Apps for the Visually Impaired	ViA Dragon Dictation Light Detector Color ID TapTapSee Be My Eyes- Helping Blind See Talking Calculator SayText AccessNote Visual Brailier
Apps for Learners with Writing Difficulties	The Writing Machine iWrite Words Letter School Alpha Writer ABC Pocket Phonics Word Magic

Table 1. E-Learning Tools for various categories of disabilities

Although learning presents particular difficulties for students with special needs, educators can use a variety of online resources to support these students.

Online platforms can aid students with special needs in better comprehending the course material, regardless of whether they are being homeschooled and using these resources constantly or are attending school full-time and using them as extra material. For certain students with learning difficulties, handwritten homework may be a better option than interactive games, activities, and movies. Every day, education becomes increasingly computerized. As a result, there are now more online materials available than ever. Numerous of these online tools are being developed to support students with special needs as more awareness of their requirements is established.

Proposed Framework:

The selection of suitable tools and technologies for various circumstances is the only factor influencing how the suggested framework may be put into practice. There are many tools available for various circumstances and scenarios, and the ones shown in Table 1 are only representative. The authors would want to suggest an AI-based chatbot for students with special needs as a component of their system. In order to give more individualized and correct answers to user searches, chatbot entities are linked to knowledge libraries.

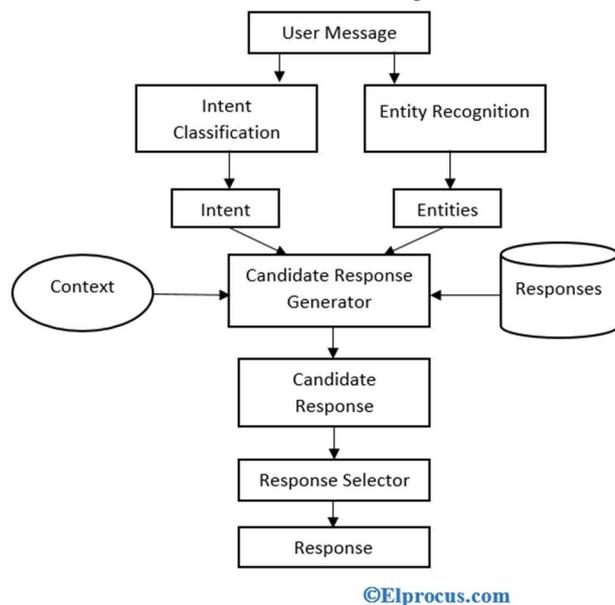


Fig. 2 Chatbot architecture

Intent: In the diagram above, an intent is the user's intention. For instance, saying "Goodbye" with the aim of ending the discussion is an example of an intent.

Entity: There are three different sorts of entities in a chatbot: system entities, developer entities, and

session entities. An entity in a chatbot is used to modify an intent.

Candidate Response Generator: The Chatbot's candidate response generator performs computations to handle user requests utilizing a variety of techniques. The response of the candidate is then the outcome of these computations.

Response Selector: To provide better service to users, the Chatbot's response selector chooses the appropriate words or passages of text in response to their inquiries.

Limitations:

The geographic focus of the study's selection of participants may have an impact on how replicable the findings are. Additionally, only academics were chosen. The study made a significant contribution to the Academy and offered a fresh perspective on how to carry on with providing high-quality education through online learning in Covid 19. Future research should investigate more about how e-learning and digital tools might enhance education. Covid-19 has also had a huge impact on the education industry. Apart from these, there are some challenges for Chatbot implementation such as:

- Security
- Understanding user sentiments and emotions in case of voice bots
- Language specialization
- Non-standard languages

Conclusion:

The purpose of this study was to outline the opinions and attitudes of university faculty members on the use of e-learning by students with disabilities during the COVID-19 epidemic.

According to the findings, it is necessary to train teachers who interact with students and give them access to the right tools if teachers of students with special needs are to learn enough. The majority of the material obtained in the earlier literature was likewise validated by the study's findings. All the research questions are addressed, and authors have suggested an AI Based chatbot for out-of-office time interaction which will be automated system, in addition to the usage of e-tools for the same.

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