

Teachers' perceptions of the obstacles of virtual classrooms in the education of students with special needs

Dr. Imad Ahmed Musa Al-Maraziq 1, Assistant professor/ Educational psychology /Curricula and Instruction Department /Education science faculty/ Jerash University
imarazeeg@Gmail.com

Randa Moussa Abdalrahman Momani 2,/ Association Professor/ Educational psychology Department/Princess Alia University Collage/Al-Balqa Applied University Jordan ‘

ORCID: <https://orcid.org/0000-002-9724-3847> ‘

dr.randam@bau.edu.jo

Mahmoud Ahmed Hussien Humaidat 3, association professor/ Education science Department/Princess Alia University collage/ Al-Balqa Applied University, Jordan ‘

ORCID: <https://orcid.org/0000-0002-0788-2937> ‘

mhumaidat@bau.edu.jo

Dr.amal matlab salman Alsabeelah 4, Assistant professor / Education science Department/ Princess Alia University collage/ Al-Balqa Applied University.

<https://orcid.org/0009-0000-0790-2224>

dramalalsabeelah@bau.edu.joDOI:

Abstract

This study examined the Teachers' perceptions of the obstacles of virtual classrooms in the education of students with special needs. The descriptive approach was used, and to achieve the objective of the study, a questionnaire was prepared and distributed to the study population in a random way. The study sample reached (377) teachers from public schools in Jordan. The results showed that the teachers' perceptions of the obstacles of virtual classrooms were moderate. The average of the teacher's obstacles domain was (3.45), the students' handicap domain was (3.50), the administrative handicap domain was (3.50), and the technical handicap domain was (3.46). To make it more interactive to achieve the desired goals, as students

with disabilities need different education methods commensurate with their needs and abilities.

Keyword: Teachers Perceptions, Public Schools, Students with special needs, Virtual classrooms

1. Introduction

The coronavirus pandemic (COVID-19) is an important step in changing the world from its traditional state to a new one in which digital technology is relied upon in all areas of life, especially the field of education, which is one of the most prominent life activities that was directly affected by the pandemic, as schools and universities were closed and e-learning became prevalent in most countries of the world.

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The use of technology in teaching has become widespread in recent times. Most universities around the world have provided their students with interactive e-learning environments (IDLEs) to replace face to face education during the outbreak of the COVID-19 Pandemic. Universities have used virtual techniques to deliver IDLEs to their students. As a consequence, digital learning environments (DLEs) are increasingly used in education.

As a matter of fact, digitization is one of the best solutions challenges of the present solution to the as educational practices more flexible and available to all students' personal life situations (Alateeq & Aljhni&Alessa, 2020).Increasing opportunities for different groups of students are also related to global policies of education policies. These policies refer to huge commitment to promoting learners' diversified opportunities (Krystalli, 2020). Moreover, legislation has been developed related to online services, indicating to educational system in the world has shifted from traditional to contemporary education strategies that employ available tools and resources to transfer and acquire knowledge interactively (Raman, et al., 2014). This transformation moves students from consumers to producers of knowledge (Rivera, 2017).

Remarkably, virtual classrooms rely on dedicated systems for holding study lectures through the Internet and allow meeting with students directly via the Internet to display educational content in all its forms in audio and video, and receive students' questions and answers (Willermark,2018). In the virtual classroom system, the teacher and the students use techniques that enable them to communicate together, such as chat rooms and whiteboards (Bettinger et al., 2017). They participate in programs, video conferences, and audio conferences, in order to help communicate with sound, image, and text between the teacher and his students and between students and each other (Willermark, 2018). In addition to the Breakout Rooms, which provide the teacher with the ability to divide those in the classroom into breakout groups (cooperative learning groups), to the teacher can exchange views with them and interact with them (Planar & Moya, 2016).

Usually, Students with special needs face learning difficulties in schools; because of their sensory needs, special physical, illnesses or psychosocial problems (Berry, 2019). For example, virtual classrooms provide students with

the best control over disclosing their disabilities to teachers or peers, comfort and adaptability and a better level of accessibility to the educational materials as well as flexibility in time and place in which they interact with learning materials (Radovan & Kristl, 2017). For students with disabilities, virtual classrooms also provide the ability to combat stereotypes and stigmatization, and to gain control over disability needs and the teaching process. However, applying most of these techniques to teach students with special needs remains difficult. The implementation of virtual classrooms is still lacking due to many factors in Arab countries (Alateeq, et al., 2020). Public schools in some Arab countries do not contain digital and virtual equipment for teaching people with special needs. In addition, digital literacy for students, teachers and parents remains a major challenge for employing digital classrooms in schools (Martin,2019).

1.1 Virtual Classrooms

Due to the tremendous technological advancements in the current era, the educational system has transformed from a traditional system that depends entirely on the teacher to a contemporary interactive educational system that aims to employ all the tools and resources to transfer and acquire knowledge interactively (Abernathy & Thornburg, 2021). This transformation has changed the concept of traditional education, in which the student plays the role of a receiver of information, to an educational system that depends on the student's acquisition of a number of skills and abilities such as research skills, analysis and problem-solving skills, effective communication skills, and language skills (Lugrin, et al., 2019).

On the other hand, the use of virtual classrooms in education has a number of obstacles, such as the necessity for the student to have the ability to use the computer and the inability to provide a suitable Internet. Also the necessity to

provide appropriate educational content for publishing on the sites in a language that students can absorb (Bettinger, et al., 2017) in addition to the lack of adequate infrastructure to support the use of virtual classrooms in a large number of poor and developing countries, and the lack of training courses that enable teachers to use virtual classrooms to explain lessons to students in the best possible way (Cueva & Terrones, 2020).

“Teaching special needs students is considered a complex and difficult process as it requires the teacher to choose the appropriate methods to teach his students according to the following variables: degree of disability, severity of disability, and mental age of the child” (Hassan, et al., 2021). Depending on the diagnosis of the condition of a child with a disability, he needs different educational methods that are compatible with their needs and abilities and the development of a treatment plan (Haegele, et al., 2017), and the acquisition of educational means that can achieve their areas of creativity (Haegele, 2019). Moreover, there must be special educational programs and equipment (Wehmeyer, 2019).

Virtual classrooms help students with special needs learn and also greatly help students with mobility disabilities, as they can continue the educational process from home (Rice, 2018). Virtual classes also save time, effort, and money for the teacher and parents of students with special needs (Al-Saadoun & Al-Turkistani, 2020).

1.2 Problem Statement

The process of teaching students with special needs is a difficult process, that requires direct communication between the students and the teacher, and their education using virtual classrooms faces a number of obstacles and difficulties, such as the lack of sufficient infrastructure to support this type of

education, and the weak ability of a number of teachers to use modern technological means (Beach, et al., 2018 ; Al-Tarawneh, 2017)." The lack of financial resources for both the nation in general and the family in particular reduces the benefit from electronic classes, as developing countries such as Jordan suffer from the problem of scarcity of financial resources, which negatively affects the use of electronic classes or virtual learning in schools” (Al-Salem & Dosh, 2018).

1.3 Research Questions

This study aimed to uncover the teachers' perceptions of the obstacles of virtual classrooms in the education of students with special needs by answer the question is :

“What are the obstacles to using virtual classrooms in the education of students with special needs in Jordan from the teachers' point of view?”

2. Methods

2.1 Research Instrument

The study employed a questionnaire to measure obstacles to using virtual classrooms in the education of students with special needs in Jordan from the teachers' point of view. The questionnaire was formulated into (4) domains with a total of (16) items as follows: teacher-related, obstacles (4) items, student-related, obstacles (4) items, administrative, obstacles (4) items and technical, obstacles (4) items. To answer the research questions, Statistical Package for Social Sciences (SPSS) was used in the data analysis: reliability tests, frequencies and percentages and descriptive statistical techniques.

2.2 Study Sample

The sample of the study consisted of (377) teachers in public schools in Amman, the capital of Jordan, randomly chosen as shown in the table 1.

Tab. 1 The Study Sample Demographic Characteristics

Gender	Sample	
	Frequency	Percentage
Male	195	51.7
Female	182	48.3
Bachelor’s Degree (BA)	191	50.7
Master’s Degree (MA)	127	33.7
Doctorate Degree (PHD)	59	15.6
Less than 1 year	28	7.4
1-3 years	58	15.4
3-5 years	188	49.9
More than 5 years	103	27.3
Total	377	100%

Table 1 showed that the percent of males in the Sample was (51.7%) whereas it was (48.3%) for females. For the variable academic Level, the percentage of teachers holding a BA’s degree was (50.7 %), a MA’s degree (33.7%), and a PHD degree (15.6%).

For the variable “Years of Experience” was as follows: Less than 1 year (7.4 %), 1 –3 years (15.4 %) and 3 –5 years (49.9 %) and More than 5 years was (27.3 %).

2.3 Validity of the Instruments

The study tool was presented to eight arbitrators who are specialists in the field of educational technology and special education to judge the validity of the tools in their fields and paragraphs to measure what they were designed to do to achieve the purpose of the test, so that the tool became valid for application.

2.3.1 Tool Reliability

To obtain a degree of test reliability, the researchers used test and retested to different groups of students. The test and retest had the same characteristics to compare if the students had achieved stability as shown in table 4.

Tab. 2: Cronbach's alpha for the study domains

Domain No.	Domain	Value of (α)
Questionnaire Variables		
1	Teacher-related obstacles	0.987
2	Student-related obstacles	0.798
3	Administrative obstacles	0.728
4	Technical obstacles	0.976

The table 2 above shows that the total Cronbach's alpha for the study domains was above 0.60 which led to the stability of the results for this study.

3. Results

The results of the study question are presented as follows:

3.1 “What are the obstacles to using virtual classrooms in the education of students with special needs in Jordan from the teachers' point of view?”

As shown in Table 3, the arithmetic means, and standard deviations for the obstacles to using virtual classrooms in teaching students with special needs in Jordan from the point of view of teachers.

Tab. 3: Obstacles to Using Virtual Classrooms in Students with Special Needs Education from Teachers' View

Domain No.	Domain	Mean	SD	Level
F1	Teacher-related obstacles	3.43	0.87	Mid
F2	Student-related obstacles	3.51	0.90	Mid
F3	Administrative obstacles	3.46	0.84	Mid
F4	Technical obstacles	3.51	0.84	Mid
Obstacles to using virtual classrooms		3.47	0.84	Mid

Table 3 shows that the teacher-related obstacles domain mean was 3.43 with a SD of 0.87. Whereas the student-related obstacles domain mean was 3.51 and the SD 0.90, the administrative obstacles domain achieved a mean of 3.46, and a SD of 0.84 while the technical obstacles domain achieved of 3.51, and a SD of 0.83. Thus, obstacles to using virtual classrooms had a mean of 3.47, and a SD of (0.84) with a moderate degree.

3.1.1 Teacher-related obstacles Domain

The table 4 displays the means and standard deviations for administrative obstacles Domain

Tab 4. Arithmetic means and standard deviations for the field of teacher-related obstacles

No	Item	Mean	SD	Level	Rank
1	Lack of teachers experience in using virtual classroom system	3.58	0.96	Mid.	1
2	Lack of high efficiency in using the World Wide Web (the Internet)	3.48	1.23	Mid.	2
3	Teachers computer skills	3.27	0.91	Mid.	4
4	The prevailing negative trend towards the virtual classroom system by teachers	3.47	1.15	Mid.	3
	Teacher-related obstacles	3.45	0.86	Mid.	

Tabl 4 shows that the total mean for this domain “teacher-related obstacles domain” was 3.45 and a SD of 0.86. The first item "Lack of teacher experience in dealing with the virtual classroom system" was ranked first with a mean 3.58 and SD 0.96, while the third item which states that, “Teachers computer skills ” with a mean 3.27 with a SD of 0.91 came in the final item.

3.1.2 Student-related obstacles domain

The table 5 displays the means and standard deviations for administrative obstacles Domain

Tab 5. Arithmetic means and standard deviations for the field of student-related obstacles domain

No	Item	Mean	SD	Level	Rank
5	The student does not own a personal computer	3.54	1.13	Mid	1
6	Students' preoccupation with other programs during the learning process in the virtual classroom	3.51	1.23	Mid	3
7	Poor response of students to computerized interactive learning techniques and their interaction with them	3.46	1.05	Mid	4
8	The lack of training programs for students that contribute to providing them with the skills of employ interactive, computerized education.	3.50	0.98	Mid	2
	Student-related obstacles Domain	3.50	0.91	Mid	

Table 5 shows that the total mean for this domain was 3.50 and a SD of 0.91, in which item 5 " The student does not own a personal computer" was ranked first with a mean of 3.54 and SD of 1.13. The item 7 "Poor response of students to computerized interactive learning techniques and their interaction with it" came in the final rank with mean of 3.46 and a SD of 1.05.

3.1.3 Administrative-related Obstacles Domain

The table 6 displays the means and standard deviations for administrative obstacles Domain

Tab. 6. Arithmetic means and standard deviations for the field of administrative obstacles

No	Item	Mean	SD	Level	Rank
9	Lack of technical education among educational leaders	3.35	1.02	Mid.	4
10	Lack of awareness of some administrators by the role of virtual classrooms in education	3.52	1.23	Mid	2
11	Lack of training programs devoted to the virtual classroom system for teachers	3.54	0.95	Mid	1
12	specific methods of teaching	3.45	0.99	Mid	3
	Administrative obstacles Domain	3.46	0.85	Mid	

Table 6 shows that the total mean for this domain with, 3.46 and with a SD of 0.85. Item 11, "Lack of training programs devoted to the virtual classroom system for teachers" was ranked first with a mean 3.54 and SD (0.95). Whereas item 9, "Lack of technical education among educational leaders" was with mean of 3.35 and SD of 1.02 came in the final rank.

3.1.4 Technical-related obstacles Domain

The table 7 displays the means and standard deviations for administrative obstacles Domain

Tab. 7: Arithmetic averages and standard deviations for the field of Technical-related Obstacles Domain

No	Item	Mean	SD	Level	Rank
13	Frequent technical failures in virtual classrooms	3.61	1.14	Mid	1
14	Poor infrastructure for virtual classrooms in some areas	3.35	0.91	Mid	4
15	Slow networks during virtual classroom rendering	3.62	1.04	Mid	2
16	Insufficient time to use virtual classrooms	3.41	1.02	Mid	3
	Technical obstacles Domain	3.50	0.85	Mid	

Table 7 reveals the total mean for this domain with, 3.50 and with a SD of 0.85. Item 13 “Frequent technical failures in virtual classrooms” was ranked first with a mean of 3.61 and a SD of 1.14 while item 14 “Poor infrastructure for virtual classrooms in some areas” was ranked last with a mean of 3.35 and a SD of 0.91.

1. Discussion

The study highlighted the obstacles to employing virtual classes for students with special needs, as their education requires joint efforts to improve education and provide them with the necessary knowledge and skills.

The study showed that there are obstacles that limit the use of virtual classes in teaching people with special needs. The result can be explained by the fact that the presence of a weakness in a certain part of the school affects other parts. Opinions indicated that schools are not prepared to implement virtual classes in teaching students with special needs and providing them with knowledge and social skills, in addition to teachers' use of traditional education and a lack of awareness of the importance of employing them, in addition to administrative factors. In addition to the technical problems, this is what studies have indicated about the importance of addressing the obstacles to employing virtual classes Raman, et al., 2014 ; Barmaki & Hughes , 2015 ; Planar & Moya ,2016 ; Blume, et al, 2019 ; Philips & Oflaherty, 2019 ; Pozo, el at., 2020 ; Porter, 2020 ; Delamarre, et al., 2017 ; Lugrin et al., 2019 ; Mandernache, 2018)

4. Conclusion

Given that learning through virtual classrooms is new, there are still a limited number of studies that have investigated its use, effectiveness and obstacles to its application especially with regard to the education of students with special needs. and the existing literature is exploratory and qualitative. The current study aimed to bridge this research gap by preparing a domain study based on theory. More specifically, this study prepared an experiment to investigate the reasons for not implementing virtual classes for students with special needs in Jordan and how this affects the quality of their education. It can be concluded

that virtual classes are very promising in terms of flexibility in attending courses (Bittinger, et al.,2017) as students with special needs can attend classes from any location of their own choice. This flexibility means that students with special needs are able to possess the knowledge and skills that lie in their formation without the burden of coming to school, thus creating richer learning experiences. However, as was confirmed in this study, there are many challenges and obstacles that prevent the application of virtual classrooms in public schools, such as technological, human and other obstacles. The technology-enhanced exams launched through educational platforms positively influence the motivation of students with special needs in all learning settings, but more research is needed to implement different types of tests over different periods to validate the results.

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