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Employing E-Learning Platforms in Teaching Physical Education to Students with Special Needs

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ABSTRACT
This study examined the degree of employing e-learning platforms in teaching physical education to students with special needs in Jordan from the teachers' viewpoint. The sustain ability of educational platforms in Jordan still lacks many factors that may enable students with special needs to acquire the skills and knowledge required in a dynamic and synchronized learning environment. The sample of the study consisted of 220 teachers in public schools in Amman randomly chosen. The results revealed that the degree of employing e-learning platforms in educating students with special needs in Jordan from the teachers' point of view was moderate. Furthermore, the means of the domains of study were as follows; Evaluation: 3.49, Social communication: 3.49, Content: 3.44 and for interactive side: 3.46. The study recommended developing interactive educational platforms to meet the needs of students with special needs' requirements. It also recommended designing curricula that encourage virtual participation in learning the skills and knowledge necessary for students with special needs in a way that ensures their interaction with them since they may prefer to mix social media with traditional learning in the classroom, designing educational platforms on mobile phones may be a vigorous step for students to acquire the skills they need.

INTRODUCTION

The Jordanian information education model has been incessantly developed since the early of the twenty-first century. Using multimedia in teaching is considered a significant measure in education. Many schools across the Kingdom of Jordan have sought to teach multimedia as an educational method based on computer technology. Compared to traditional teaching methods, multimedia teaching offers great benefits[1]. Xia *et al*.[2] pointed out that these advantages shade many aspects such as, sharing educational resources, improving students' enthusiasm for learning and improving teaching efficiency. The most distinctive feature of multimedia technology is interaction, which is the fundamental of multimedia technology to improve the role of quality educational outcomes. Interaction is a vital standard for assessing the level of multimedia teaching resources and it is an important manifestation of the strong function of multimedia teaching as well[3].

On the Internet, learning platforms are provided to students, where numerous techniques are used to engage students in individual and group learning[4]. Creating online lessons allows schools to share knowledge and skills with students at domestic and international levels[5]. The exclusivity of using the Internet as a means of learning has created the concept of e-learning. E-learning is a popular educational form because it is flexible in its application and meets the needs of all students[1]. The key aspects for choosing e-learning and educational platforms are easiness of use, low cost, flexibility and functionality[6]. The concept of educational platform is very significant because it provides alternative ways to improve students' awareness, skills and behaviors of using modern technologies by relying on e-learning[7]. E-learning and educational platforms have been growing rapidly during the COVID-19 pandemic because learning can be conducted anytime, anywhere and students gain superior control over their own learning[8].

Online training courses in e-learning platforms can involve many students in the educational process and can provide them with skills and experiences regardless of their skills, experience and abilities[9] since not all students have the same knowledge, skills and competencies. Therefore, it is important to conduct research on how to use educational platforms and learning methods to provide students with the skills and experiences they need, especially students with special needs, which will ensure better results for students who use online training courses in addition to their successful completion of studies[10].

It can be assumed that the new challenges and requirements associated with distance learning through learning platforms spark learning processes and that the success of home-schooling depends heavily on the individual and family resources of the child for example, it is assumed that students with special educational needs and students with low levels of achievement are adversely affected by school closures and distance learning. Consequently, this study seeks to shed light on the role of educational platforms in providing students with special needs and the skills and knowledge they need in a proper and adequate manner at home during school closures[11]. While previous research focused on creating electronic learning environments to meet the needs of some students with special needs, many of these efforts targeted educational platforms to provide learners with special needs with the skills and knowledge they need without detracting from their rights[12-14]. Consequently, it was imperative to develop interactive platforms that facilitate the e-leaning process for students with special needs and support them to overcome the difficulties they face during the learning process[15,16].

This study posed the following question to achieve its purpose:

- What is the degree of employing electronic educational platforms in educating students with special needs in Jordan from the teachers' point of view?

This study aimed to examined the degree of employing electronic educational platforms in educating students with special needs in Jordan from the teachers' point of view.

LITERATURE REVIEW

E-learning platforms: The rapid and widespread of the Corona virus resulted in a large number of damages affecting all educational, health and economic sectors[17] as most countries of the world were forced to impose educational restrictions represented by the closure of schools, universities and institutes to preserve the safety of students from the threat of Corona virus, which is considered as one of the most dangerous challenges facing the human race in the twenty-first century[18]. Corona epidemic was classified as a global epidemic that swept all countries of the world and killed many of people. It led to millions of injuries and hundreds of thousands of deaths which caused the destruction of the health, economic and educational systems in many countries of the world. Therefore, it was necessary to put in place the necessary plans and strategies to overcome the disastrous effects of this pandemic that threatened millions of students around the world[19].

Due to the strategic importance that the education sector plays in developing societies and preserving the mental, psychological and physical integrity of children[20], it was imperative to bring together the world's governments to develop new plans and strategies to ensure the provision of high-quality educational service to students who cannot go to school[21]. Governments began a few months after the spread of the Corona pandemic to employ modern technological means in education, such as the use of distance education methods, which were highly successful due to the great development in means of communication and information technology[22].

E-learning platforms are one of the most prominent solutions proposed to continue the educational process and preserve students' education from their homes without exposing them to the risk of contracting the virus[23], thus, many countries around the world used e-learning platforms and modern technological means in the education process[24]. As such, these platforms were very popular due to their low financial cost, great educational effectiveness and ease of use by students and teachers alike[25].

E-learning platforms can be defined as an interactive learning environment that employs web technology and combines the advantages of electronic content management systems with social networks such as Facebook and Twitter[23]. In addition, it enables teachers to publish lessons and goals, set assignments and implement educational activities and communicate with students through multiple technologies, divide students into working groups and help to exchange ideas and opinions between teachers and students and share scientific content which helps to achieve high-quality educational outcomes Ustyuzhanina and Evsukov[26].

E-learning platforms are numerous and there are many e-learning applications available on the Internet and some of them for free. There are video viewing platforms such as YouTube, for example, that can be employed as e-learning platforms by converting lessons into videos that any student can view from anywhere in the world[3]. But what distinguishes the specialized platforms in e-learning is the provision of direct and indirect communication possibilities between the students and the teacher, in a way that helps enhancing the educational process with its basic components without any defect that may lead to the failure. This can complete the education or teaching system correctly[27]. E-learning platforms ensure the provision of excellent educational service to students in their homes without being exposed to the risk of the virus[8].

Recently, many of e-learning platforms have spread to contribute to obtaining open and available self-education resources for all without incurring high financial costs[28]. Thus, e-learning platforms provide free and convenient means for those wishing to develop themselves scientifically and technically[29]. In addition, these platforms now include educational courses that most schools and universities are interested in. The e-learning platforms are a flexible system for learning that includes any type of self-learning using the Internet and modern means of communication[30].

E-learning platforms are a flexible system of learning that include any type of self-learning using the Internet from distance learning[31]. As such, this type of learning gives and opportunity for students who are unable to register and join the traditional classrooms, so the teacher can reach and contact various students wherever they are. In so doing, the e-learning platforms have eliminated the spatial and temporal restrictions on the education process[28].

The electronic educational platforms have many positives as they contribute to the education of students at any time and give them the opportunity to deepen the understanding of the educational material in line with the time that suits them[32]. It also provides an opportunity to educate students residing in remote and isolated areas. The electronic educational platforms help students to review and follow up lessons on the way which is consistent between the student and the teacher[33].

With the escalation of the Corona virus outbreak, the education sector and students with special needs were greatly affected by the precautionary measures represented by the closure of schools and the speedy conversion to the use of e-learning, distance learning system or blended education because students, with special needs in most cases need direct education due to the circumstances of their disability. As such, they need special attention from the teacher. Accordingly, students with special needs were in need to special treatment to help them understand what is going on around[34] because of their disability that prevents them from being able to cope with things as for normal healthy people. Habitually, students with special needs cannot even learn in normal conditions in regular schools. Rather, they need special tools and special methods commensurate with their abilities. They often suffer from impairments, auditory or visual impairments and delays in mental development that may cause slow learning, behavioral disorders, psychological special needs, language disorders and others[35].

Electronic educational platforms are important tools that help to educate students with special needs too as they face great difficulties in accessing schools and dealing with traditional education in general[36] where many schools lack the appropriate infrastructure to support students with special needs. These students need special care by teachers, as they must be taken care of, to ensure that they understand the lessons and help them to engage and communicate with their classmates[37]. E-learning platforms were among the most important solutions that could help students with special needs as they need special treatment and educational methods and mechanisms that differ from those used by normal teachers with other normal healthy students. As such, electronic educational platforms can help a certain group of students with special needs but they may not help everyone of them to benefit from the available educational service as required.

MATERIALS AND METHODS

The research instrument: A questionnaire measuring degree of employing e-learning platforms in educating students with special needs in Jordan from the teachers' point of view was used to collect data. The questionnaire contained 3 demographic variables and 16 items which represent study variables. The questionnaire was formulated into 4 domains with total of 16 items: Content 4 items, evaluation 4 items, interactive side 4 items and social communication 4 items. To find out the degree of employing e-learning platforms in teaching Physical education to students with special needs in Jordan from the teachers' point of view. The Statistical Package for Social Sciences (SPSS) was used in processing the following statistical techniques and tests in data analysis: Reliability test, frequencies and percentages and descriptive statistical techniques.

The respondents were asked to read the questionnaires and select one of the choices as follows: Strongly agree answer, agree answer, neutral answer, disagree and strongly disagree that correspond to 5, 4, 3, 2 and 1, respectively. They were divided into three stages as 1.33 is the length of each stage: high for means 1-2.33, moderate for means 2.34-3.67 and low for means 3.68-5. A questionnaire was developed about the obstacles of using the fashion workshops effectively by taking advantage of several studies related to the subject in preparing the questionnaire and by structuring the items in their final form.

Sample of the study: The population of the study consisted of all teachers teaching students with special need in schools of Amman, the capital of Jordan. The sample included 220 teachers, 108 male teachers and 112 female teachers chosen randomly from these schools. The sample's demographic characteristics are shown in Table 1.

Table 1: Demographic characteristics of the sample (academic level)

	Sample	
Job description	Frequency	Percentage
Bachelor's degree	140	63.6
Master's degree	54	24.5
Doctorate degree	26	11.8
Total	220	100

Table 2: Demographic characteristics of the sample "years of experience"

	Sample	
Years of experience	Frequency	Percentage
Less than 1 year	28	7.4
1-3 years	58	15.4
Up 3-5 years	188	49.9
More than 5 years	103	27.3
Total	377	100

Table 3: Cronbach's alpha for the study domains

No.	Domain	Value of (α)
1	Content	0.849
2	Evaluation	0.816
3	Interactive side	0.789
4	Social communication	0.876

For the variable "academic level', it showed that the holders of "bachelor's degree" were 63.6%, "master's degree" were 24.5% and doctorate degree were 11.8%.

For the variable "years of experience", it is shown that the "less than 1 year" were 7.4%, "1-3 years" were 15.4%, "u\Up 3-5 years" were 49.9% and "more than 5 years" were 27.3% (Table 2).

Validity of the instruments: The questionnaire was given to 12 reviewers who are experts in the field of education and technology to judge the extent to which the domains and items are valid and reliable. To reach a degree of reliability of the questionnaire, the researcher used test and retest to a different group of respondents out of the real sample of the study.

Table 3 showed that the total Cronbach's alpha for the study domains was more than 0.60 which would lead to the stability of the results for the study.

RESULTS

The data and items were analysed to explore degree of employing e-learning platforms in teaching physical education to students with special needs in Jordan from the teachers' point of view as presented below:

- What is the degree of employing e-learning platforms in educating students with special needs in Jordan from the teachers' point of view?

To answer this question, means and standard deviation were calculated for each domain in the study instrument in Table 4.

Table 4: Employing e-learning platforms in teaching physical education to students with special needs in Jordan

No.	Domains	Mean	SD	Level
F1	Content	3.44	0.87	Moderate
F2	Evaluation	3.49	0.91	Moderate
F3	Interactive side	3.46	0.86	Moderate
F4	Social communication	3.49	0.85	Moderate

SD: Standard deviation

Table 5: Descriptive statistics for "content "domain

No.	Items	Mean	SD	Level	Rank
1	The contents selected in the learning platform are relevant to an in-depth knowledge of the subject	3.58	0.95	Moderate	1
2	The platforms provide educational tools (audio, video, pictures, shapes and maps, static and animation graphics, graphics and stereoscopes)	3.46	1.24	Moderate	2
3	The learning platform facilitates the availability of course materials	3.26	0.89	Moderate	4
4	The learning platform allows deepening the mastery of the contents	3.45	1.16	Moderate	3
	Content domain	3.44	0.87	Moderate	

SD: Standard deviation

Table 6: Descriptive statistics for evaluation domain

No.	Items	Mean	SD	Level	Rank
5	The platform uses specific criteria to evaluate students	3.53	1.11	Moderate	1
6	The platform provides multiple mechanisms for evaluating students	3.47	1.24	Moderate	3
7	The platform provides various tests to measure students' performance	3.44	1.04	Moderate	4
8	Self-assessment activities in the learning platform enhance the acquisition of topic knowledge	3.52	0.99	Moderate	2
	Evaluation domain	3.49	0.91	Moderate	

SD: Standard deviation

Table 7: Descriptive statistics for interactive side domain

No.	Items	Mean	SD	Level	Rank
9	The platform's forum provides students a space for collaborative learning	3.34	1.03	Moderate	4
10	The learning platform prefers creating a scenario for peer-to-peer collaboration possibilities	3.51	1.22	Moderate	2
11	The learning platform fosters an atmosphere of educational interaction between teachers and students	3.55	0.95	Moderate	1
12	The learning platform enables the creation of learning communities among students	3.44	0.99	Moderate	3
	Interactive side domain	3.46	0.86	Moderate	

Table 4 showed that "content" domain mean was 3.44 with a standard deviation 0.87. While the "evaluation" domain mean reached 3.49 with a standard deviation 0.91. The "interactive side" domain mean was 3.46 and a standard deviation 0.86. Also, the "social communication "domain mean was 3.49 and with a standard deviation 0.85. The degree of employing e-learning platforms mean reached 3.47 and with a standard deviation 0.82 at a moderate degree.

"Content" domain: Means and standard deviation were calculated for each item in the "content" domain in Table 5.

In Table 5, the total mean for this domain was 3.44 and with a standard deviation 0.87. it is also noted that the item 1 which states, "The contents selected in the learning platform are relevant to an in-depth knowledge of the subject" was ranked first with a mean 3.58 and standard deviation 0.95 and item 3 which states, "The learning platform facilitates the availability of course materials" was with mean 3.26 and standard deviation 0.89 came in the final position.

"Evaluation "Domain: Means and standard deviation were calculated for each item in the "evaluation" domain as shown in Table 6.

In Table 6, the total mean for this domain was 3.49 and with a standard deviation 0.91. It is also noted that item 5 which states, "the platform uses specific criteria to evaluate students" was ranked first with a mean 3.53 and standard deviation 1.11 and Table 7 which states, "the platform provides various tests to measure students' performance" was with mean 3.44 and standard deviation 1.04 came in the final position.

"Interactive side "domain: Means and standard deviation were calculated for each item in the "interactive side" domains (Table 7).

In Table 7, the total mean for this domain was 3.46 and with a standard deviation 0.86. It is also noted that item 11 which states, "the learning platform fosters an atmosphere of educational interaction between teachers and students" was ranked first with a mean reached to 3.55 and standard deviation reached to 0.95 and the item 9 which states, "the platform's students' forum provides a space for collaborative learning" with mean reached 3.34 and standard deviation reached 1.03 came in the final rank.

"Social communication "domain: Means and standard deviation were calculated for each item in the social communication domain (Table 8).

In Table 8, the total mean for this domain was 3.49 and with a standard deviation 0.85. It is also noted that item 15 which states, "the learning platform promotes the collaborative learning style that sparks interest in your professional practice" was ranked first with a mean 3.61 and a standard deviation 1.04. Whereas item 14 which states, "through the learning platform, strong connections with other students for future projects are encouraged" was with a mean of 3.34 and with a standard deviation 0.90 that came in the last rank.

Table 8: Descriptive statistics for social communication domain

No.	Items	Mean	SD	Level	Rank
13	The learning platform enables a fruitful dialogue with teachers for professional practice	3.59	1.17	Moderate	2
14	Through the learning platform, strong connections with other students for future projects are encouraged	3.34	0.90	Moderate	4
15	The learning platform promotes the collaborative learning style that sparks interest in your professional practice	3.61	1.04	Moderate	1
16	The learning platform takes into account individual differences between students	3.42	0.99	Moderate	3
	Social communication domain	3.49	0.85	Moderate	

SD: Standard deviation

DISCUSSION

This study was inspired by the research gap that was discovered, along with the author's experience as an academic, with the aim of understanding the need to assess the role of educational platforms in improving the quality of teaching physical education to students with special needs. Students with special needs tend to have difficulty accessing teaching resources during normal classroom learning as well on the regular Moodle system. Therefore, the present study had such a goal because students find it difficult to participate in teaching activities while studying and using e-learning tools from home. This is a global concern of the Special Education and Training Foundation, as expressed by some scholars[38].

The results showed that the degree of employing e-learning platforms in educating students with special needs in Jordan from the teachers' point of view was moderate. This indicated that the technological infrastructure remains fragile. Training and educating students with special needs interactive tools and simultaneous and asynchronous teaching in the educational platform which is still weak and not well-polished. On the other hand, the curriculum content in educational platforms is still insufficient. In addition, the methods of evaluating students need to be developed and improved in a way that considers individual differences among students with special needs.

These results are consistent with most previous studies and altogether provide strong support for the view that educational platforms improve the quality of education for students with special needs but they need to be developed. For example, Ionescu *et al*.[38] concluded that employing interactive educational platforms is positively and statistically closely related to improving the skills and knowledge of students with special needs. ElSaheli-Elhage and Sawilowsky[39] found that the use of assessment tools and quality content in educational platforms is positively and statistically significant to improving the performance of students with special needs.

CONCLUSION

This study has presented the main aspects about e-learning and adaptive process based on the educational needs of students with special needs through the adoption of an educational platform concerned with identifying and meeting the educational needs of people with special needs. Educational platforms must contain interactive tools and high level of flexibility in introducing new knowledge and concepts to propose a rich and synchronized electronic learning environment and improve the learning experience of students with special needs.

Also, the results showed that a virtual technology-based multimedia teaching platform plays an important role in influencing the learning drive for people with special needs. Through this platform, students can get rid of the negative aspects in the traditional teaching process and they would get engaged in the educational process in a positive way. At that point, this can be converted into active learning for students with some difficulties and achieve better results. The aspects proposed in this study are practical and can provide a good reference for improving the quality of education for students with special needs and providing them with skills and knowledge regardless of the circumstances that the educational system is going through during the Covid-19 pandemic. However, research on the teaching system in this study is based on simulating the ideal situation. If we want to ensure that the platform has a better impact on practicality, we need to further improve the comfort of the platform's operation and the intelligence of the platform technology.

Based on the results of the case study, we were able to verify the role and potential of the educational platform in teaching students with special needs. As in the related contributions, it could be also concluded that the sustainability of educational platforms still lacks many factors that may enable students with special needs to acquire the skills and knowledge required in a dynamic and synchronized learning environment. The study allows to verify that the educational platform improves relatively students' learning experience and outcomes, thus providing:

- Effective communication, where students feel more comfortable working among their peers
- More visible students' participation and learning
- Improving socialization and role models because students are able to form an identity with their adult classmates

Implications: The empirical result of this study expresses the ministry of education's need to build more interactive educational platforms that meet the needs of students with special needs. The study also recommended designing curricula that encourage virtual participation in learning the PE skills and knowledge necessary for students with special needs in a way that ensures their interaction with them and benefit from them. Since students with special needs may prefer to mix social media with traditional learning in the classroom, thus, designing educational platforms on mobile phones may be a vigorous step for students to acquire the skills they need. In this scenario, what is traditionally done in the classroom can now be done at home and vice versa. When educational platforms, social media and traditional learning are integrated into curriculum design, students are appreciated as well as reflected in appropriate learning outcomes.

LIMITATION AND FUTURE RESEARCH

The educational platform is a comprehensive and systematic way to implement classes at different levels of education systems to include students with special needs. However, it is not without its limitations. To increase easiness of use for teachers who do not have technical knowledge by activating the educational platform as required, the system must be simple enough to meet the needs of students with special needs easily. Any change in teaching methods requires a change in the thinking of both teachers and students, therefore, the successful adoption of a system depends on many factors, not just the system alone. Many researchers have already included a set of literature as a basis for the importance of educational platforms but most of them included ordinary students and have not shed light on students with special needs. However, more investigations must be conducted to focus on the role of educational platforms in providing students with special needs with the skills and knowledge required to measure its effectiveness and generalizability. Future studies should include but not limited to, implementing interactive platforms in providing students with special needs with specific skills, studying their effectiveness on students' performance, evaluation methods and their suitability in Arab countries and others.

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