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Obstacles to E-Learning in the Field of Sports Science: An Analytical Study of Lecturers' Experiences

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Abstract

The study aims to identify the degree of obstacles to e-learning in the field of sports science: an analytical study of lecturers' experiences, in addition to determine the differences in gender, academic rank and university variables. To achieve this, the researchers used the descriptive method and the study was conducted on a sample consisting of (41) lecturers in all faculty members of physical education in Palestinian universities located in the West Bank. To collect data, the researchers designed the tool of Obstacles to E-Learning which consisted of (32) items. Statistical package program (SPSS) was used to analyze data and the study results showed a middle degree of obstacles to e-learning in the field of sports science, the total mean score (3.67± 0.60). The results also showed that there aren't significant differences at the level of significant (α≤ 0.05) in obstacles to e-learning in the field of sports science according to gender, academic rank and university variables.

Key Words: *Obstacles; E-learning; Sports science; Lecturers.*

Introduction

Thanks to developments in digital technology and the need to adjust to new conditions like the COVID-19 pandemic, e-learning has become an essential form of instruction in many fields, including sports science. The quick transition to online learning brought to light the advantages as well as the drawbacks of this mode of instruction, especially in subjects like education where hands-on experience is usually required. Extensive research has investigated these interactions, unveiling a multifaceted terrain of challenges and prospects.

The obstacles faced when instructing swimming classes at Hashemite University's Faculty of Physical

Education and Sport Science during the COVID-19 epidemic were the subject of research by alShorman et al. (2024). From the viewpoints of the students, this study discovered significant barriers in the electronic, academic, psychological, economic, and social domains, highlighting the complexity of the difficulties encountered in e-learning. Similar to this, Moustakas and Robrade (2022) recorded the experiences of educators and learners in the field of sports education, emphasizing the need of interaction and diversity in effective virtual learning while pointing out major obstacles to motivation brought on by the absence of visual cues.

Using a mixed-method approach, Emine and Karakaya (2020) looked at the opinions of academics and students studying sports education on e-learning. Their results showed significant variations according to department, gender, and marital status, and a substantial relationship between views regarding e-learning generally and propensity toward it. Additionally, Indrayana et al. (2024) looked at how social media usage affected sports students' adoption of e-learning and found that using social media often improved interaction and e-learning tool competence.

In their investigation of faculty attitudes toward e-learning at a large, open institution, Panda and Mishra (2007) found that while lack of training and inadequate internet connection were major obstacles, intellectual challenge and personal interest were important drivers of participation. In their study, Rigamonti et al (2020) examined how European sports science students used social media and e-learning resources. They discovered that many of them used platforms like YouTube and WhatsApp for educational reasons.

Aydın and Murathan (2024) investigated how sports education students perceived blended learning settings and their efficacy. They found that although face-to-face instruction was thought to be the most successful, blended learning also showed potential in spite of technological difficulties. When Abdelhafeez et al. (2024) examined female students' views toward e-learning, they discovered no discernible variations across academic years. Together, these studies show the range of difficulties and perspectives surrounding e-learning in sports science, underscoring the necessity of a thorough grasp of these barriers to improve the e-learning environment for instructors and students alike.

Problem Statement

Sports science confronts particular difficulties in effectively integrating pedagogical techniques and e-learning technology, despite notable improvements in these areas. Sports education's practical and hands-on components don't always transfer well to online platforms, creating a variety of barriers that impede the learning process. These difficulties are not all the same and might change depending on things like gender, educational background, and the particular environment of the university.

This study aims to address the following research questions:

1. What is the extent of the obstacles to e-learning in the field of sports sciences? An analytical study of the experiences of lecturers.
2. Are there statistically significant differences at the alpha significance level of 0.05 or less in the obstacles to e-learning in the field of sports sciences, based on gender?
3. Are there statistically significant differences at the alpha significance level of 0.05 or less in the obstacles to e-learning in the field of sports sciences, based on academic degree?
4. Are there statistically significant differences at the alpha significance level of 0.05 or less in the obstacles to e-learning in the field of sports sciences, based on university?

Study Significance

This study is important because it can help us better understand the obstacles that prevent sports scientists from

using e-learning. Through an analysis of lecturers' experiences, the study seeks to pinpoint the main roadblocks to successful online learning. This knowledge can help design solutions to lessen these obstacles, enhancing the caliber and usability of e-learning in the sports sciences.

Furthermore, the analysis of gender, educational attainment, and university-based disparities in the study offers a thorough understanding of the ways in which different institutional and demographic factors impact e-learning difficulties. This can support the creation of a more inclusive and productive e-learning environment by assisting legislators and educational institutions in customizing interventions to meet the unique requirements of various groups.
Ultimately, by highlighting the particular difficulties encountered in sports sciences e-learning, the knowledge gathered from this study can benefit the larger area of educational research. This can encourage better-informed conversations and choices regarding e-learning's future, guaranteeing that it develops into a practical and efficient form of instruction for both students and instructors working in this sector.

Study objectives

1. Determine the extent of obstacles to e-learning in the field of sports sciences.
2. Identify gender-based differences in obstacles to e-learning in sports sciences.
3. Examine academic degree-based differences in obstacles to e-learning in sports sciences.
4. Explore university-based differences in obstacles to e-learning in sports sciences.

Previous and similar studies

The goal of the study of (alShorman et al., 2024) was to determine, from the viewpoint of the students, the challenges associated with instructing swimming classes at Hashemite University's Faculty of Physical Education and Sport Science during the Corona epidemic. The questionnaire was used as a tool to collect study data after the researchers conducted validity and reliability transactions to ensure their safety and suitability for the current study. The researchers employed the descriptive approach because it was appropriate for the nature of the study and its goals. The study's findings showed that the most significant challenges encountered when instructing swimming courses at the Hashemite University's Faculty of Physical Education and Sports Sciences during the Corona pandemic were categorized as follows: challenges pertaining to the electronic domain, challenges associated with the academic domain, challenges associated with the psychological domain, challenges associated with the economic domain, and lastly challenges associated with the social domain. The study's authors advise extrapolating the findings to help understand the types of challenges practical course students had, particularly when swimming during the coronavirus epidemic.

“The study of (Moustakas & Robrade, 2022) sought to record the use of pedagogical strategies and e-learning technology in the sports industry, as well as the difficulties and achievements encountered along the way and future directions for development. In order to do this, two online qualitative surveys—one for instructors (n = 12) and one for students (n = 15)—collected a total of 27 replies. Four students and one more instructor participated in structured follow-up interviews to confirm and delve deeper into the replies. The results demonstrated that variation and interaction were essential elements of effective online learning. Teachers did, however, report having trouble inspiring their pupils, particularly in the absence of a visual aid. In the end, the practical and social aspects of physical education and sport do not entirely transfer to the online environment, despite innovation, diversity, and engagement. We thus wrap up by outlining prospective directions for practice and research to address the difficulties courses encountered, particularly swimming during the Corona epidemic.”

The study of (Emine & Karakaya, 2020) used a mixed method study design to uncover the attitudes of

academicians working in these institutions toward e-learning as well as the attitudes of students receiving sports instruction at the higher education level. The "Attitude to E - Learning Scale (AEL)" was used with pupils that obtain sports education. Using the SPSS 22.0 package software, parametric and non-parametric tests were used to analyze the collected data. In-person interviews with the academicians employed by sports education institutes were undertaken. Software from QSR NVIVO-10 was used to model the inferred situation, and qualitative content analysis techniques were used to analyze the collected data. Significant variations were found between the Inclination to E-Learning (IEL) sub-scale and the variables of gender, marital status, and the department under study in the examination of the attitudes of students receiving sports education toward e-learning in the gender variable of the AEL scale. The greatest and highest-level association between the IEL and AEL scales was found in the correlation analysis. The IEL sub-scale was shown to account for 64% of the total AEL scale in the regression analysis.

The study of (Indrayana et al., 2024) sought to analyze how several external factors—such as social media use, perceived utility, perceived ease of use, playfulness, attitude toward use, and intention to use—impacted sports students' adoption of e-learning. This cross-sectional study used a quantitative research approach and a detailed questionnaire to collect data from 922 active sports education students out of a total sample size of 1,072. To test hypotheses and analyze data, partial least squares structural equation modeling (PLS-SEM) was used. The research presents a new finding regarding the effects of social learning. Specifically, it shows that students who play sports and are regular users of social media sites such as Facebook, Instagram, and WhatsApp have a greater level of familiarity and engagement with digital technology, which helps them learn and comprehend e-learning platforms. The study also emphasizes how social media may be a helpful resource for peers to overcome obstacles in e-learning and exchange information. The study has a wide range of implications, providing insightful information on how educational institutions and policymakers might use social media to encourage the use of e-learning with an emphasis on increasing student usability and accessibility. This study adds to the larger conversation about e-learning in sports science education by laying the groundwork for further investigations into how to use technology into teaching methods.

The study of (Rigamonti et al., 2020) aimed to examine how students felt about using digital learning and social media for sport and exercise science research. Between February and October 2017, a survey using a questionnaire consisting of 20 key questions was conducted at six sport science faculties, distributed evenly throughout Germany (G), Italy (I), and the United Kingdom (UK). The study concentrated on how students used e-learning and social media (Facebook, Google+, Instagram, LinkedIn, Skype, Twitter, WhatsApp, YouTube) for academic reasons. Both quantitative and qualitative methodologies were used to analyze the data. The research involved 229 pupils (G: 68, I: 121, UK: 40). WhatsApp and Facebook shown extra preferences for peer relationships for learning objectives and knowledge conversations, whereas YouTube was mostly utilized for information consumption. Online data sources that were most popular were Wikipedia (63%), YouTube (66%), open access journals (67%), and PubMed (77%). Scripts (59%) and scientific papers (53%), as well as PowerPoints from colleges, were often utilized as digital learning resources. Nonetheless, a few preferences revealed regional variations. Overall, the examined participants used e-learning resources and social media extensively for their studies. Students want their universities to provide them with more digital learning resources.

The study of (Aydın & Murathan, 2024) intends to investigate how İnönü University and Fırat University sports education majors perceive and assess the efficacy of blended learning settings. This descriptive study, which used quantitative methodologies and a sample of 674 students from İnönü University and Fırat University's sports science faculties, was carried out in the 2022–2023 academic year. The Blended Learning Environments Effectiveness Scale data were examined with the use of the SPSS software. According to the study's findings, students contribute more to and believe that in-person learning environments are more successful (x=4.062).

According to x=3.841, blended learning environments rank as the second most successful type of learning environments. Nonetheless, there are certain difficulties due to technological problems (x=2.957) and online learning settings (x=3.342). A somewhat positive correlation (r=0.435, p<0.01) has been found using correlation analysis between face-to-face and blended learning contexts, and between online and blended learning environments (r=0.540, p<0.01) as well. The impact of blended learning environments on university students' sports education is linked to elements like communication, technological assistance, student-teacher contact, and motivation. Students believe that in-person learning environments are the most effective and greatly enhance the learning process. As a successful approach, blended learning may accommodate various learning preferences and overcome technological obstacles.

The study of (Abdelhafeez et al., 2024) intends to investigate the disparities in e-learning attitudes among female students, ages 18 to 22, enrolled in Helwan University's Faculty of Physical Education. To fit the nature of the research, a step-by-step descriptive technique with procedures was employed. The four classes of female students at Helwan University's Faculty of Physical Education for Girls for the academic year 2022–2023 comprised the research population. In order to determine the scientific coefficients of the scale, a random sample of 100 students, ages 18 to 22, were chosen from each of the four classes at Helwan University's Faculty of Physical Education for Girls. Three hundred students from the four classes made up the primary research sample: thirty students from the first class, fifty from the second, one hundred from the third, and one hundred and twenty from the fourth. The findings revealed that there were no statistically significant variations in the opinions of female students in the four classes about e-learning.

Study Methodology:

The researchers used the descriptive method in its analytical form due to its suitability for the nature and objectives of this study.

Study Population:

"The study population consisted of all faculty members of physical education in Palestinian universities located in the West Bank, totaling 81 faculty members according to the records of the Ministry of Higher Education and Scientific Research for the academic year 2022/2023."

Study Sample:

The study sample consisted of 41 physical education faculty members in Palestinian universities, representing 50% of the original study population. They were selected randomly in a stratified manner, as shown in Table 1.

Table 1: Distribution of the study sample according to independent variables (n = 41).

Independent Variables	Variable Level	Frequency	Percentage (%)
Gender	Male	31	75.6
	Female	10	24.4
	Total	**41**	**100**
Academic Rank	Lecturer	17	41.5
	Assistant Professor	17	41.5
	Associate Professor and above	7	17
	Total	**41**	**100**
University	Khadouri	14	34.1
	An-Najah National	8	19.5
	Arab American	6	14.6

	Birzeit	8	19.5
	Al-Istiqlal	5	12.3
	Total	**41**	**100**

The distribution of the study sample according to independent variables, as presented in Table 1, shows a diverse representation across gender, academic rank, university affiliation, and place of residence. The sample consists of 41 physical education faculty members from Palestinian universities, with a significant majority being male (75.6%), while females constitute 24.4%. The academic ranks are evenly split between lecturers and assistant professors, each comprising 41.5% of the sample, while associate professors and above make up 17%. University affiliation is varied, with the largest representation from Khadouri University (34.1%), followed by An-Najah National and Birzeit Universities, each accounting for 19.5%. The Arab American University and Al-Istiqlal University contribute 14.6% and 12.3% of the sample, respectively. This distribution highlights the comprehensive and balanced nature of the sample, providing a robust basis for analyzing the obstacles to e-learning in the field of sports sciences across different demographics and institutions.

Reliability

A set of 32 items in the reliability data indicate a Cronbach's Alpha of 0.936, suggesting strong internal consistency among the test or questionnaire's components. stronger values of Cronbach's Alpha, which range from 0 to 1, indicate stronger dependability. Alpha values above 0.7 are often regarded as acceptable, above 0.8 as outstanding, and above 0.9 as exceptional. The test findings are therefore steady and dependable since a value of 0.936 indicates that the items have a strong correlation and consistently assess the same underlying concept. This high degree of dependability gives users confidence that the measuring instrument can reliably and mostly free of random error capture the desired construct.

Descriptive Statistics

Table (2): Descriptive Statistics

Item	Mean	Std. Deviation
Lack of awareness programs on how to use the Moodle system	4.1220	0.78087
Difficulty in applying assessment methods when using the Moodle system	3.6585	1.08650
Inadequate educational services provided by the Moodle system	3.2927	1.10100
Lack of interactive elements offered by the Moodle system	3.3659	1.04298
Frequent malfunctioning of the Moodle system at the university	3.3171	1.03535
Rarity of regular updates for the Moodle system	3.5122	1.07522
High cost of designing and producing electronic courses for the Moodle system	3.6098	1.09266
Inadequate infrastructure in classrooms for using the Moodle system	3.9268	0.98464
Students' fear of computerized exams	3.853	1.23614

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High cost of the necessary equipment for the Moodle system for both students and lecturers	3.9024	0.99511
Lack of cooperation between universities in exchanging expertise to develop the Moodle system	3.5854	1.11749
Lack of incentives for individuals proficient in using the Moodle system	3.5366	1.02707
The university environment does not encourage the use of the Moodle system	3.1707	1.24303
Difficulty in conducting video conference lectures between professors and students	3.1463	1.25620
Issue of power outages while using the Moodle system	3.8049	1.07749
The traditional nature of the subjects included in the university curriculum does not align with modern technologies	3.8049	0.90054
The educational content of the university curriculum is more suited to traditional methods than those related to the Moodle system	3.8780	0.81225
Difficulty in implementing courses as electronic software	3.5366	1.09767
The university curriculum objectives do not focus on the Moodle system with its various tools	3.7073	1.07805
Preparing electronic content requires significant effort from lecturers	3.4634	1.34346
The density of the academic material in the courses hinders the use of the Moodle system	4.1463	0.82344
Difficulty in maintaining devices and educational technologies continuously	3.8293	0.94611
Lecturers prefer traditional teaching methods	3.9268	0.90527
The Moodle system takes longer in the learning process	4.2683	0.70797
Some lecturers are reluctant to attend training courses in the Moodle system	3.9024	0.96966
Suffering from the lack of continuous internet availability at the university	3.8780	1.07692
The Moodle system limits the development of creativity elements among lecturers	3.6098	1.28215
Most lecturers lack computer skills	3.2927	1.28926
Difficulty in designing electronic courses using the Moodle system	3.4878	0.95189
Weak student performance in electronic courses due to lack of experience in using it	3.6829	0.96018
Total	3.6719	0.60172

The Moodle system presents a number of obstacles when used in an educational setting, as illustrated by the

descriptive statistics in Table (2). While the lowest mean score of 3.1463 relates to challenges in conducting video conference lectures, demonstrating varied experiences across different issues, the highest mean score of 4.2683, indicating significant agreement, relates to the perception that the Moodle system prolongs the learning process. Significant obstacles to efficiently using Moodle are highlighted by factors like insufficient infrastructure (Mean = 3.9268) and a deficiency of awareness initiatives (Mean = 4.1220). The standard deviations, especially the ones over 1.0, show a great deal of variation in the opinions of the respondents. For example, students' anxiety of computerized tests (Std. Dev. = 1.23614) and their difficulties with electronic material preparation (Std. Dev. = 1.34346) are two examples of such views. The overall mean score of 3.6719 indicates a middle degree of agreement with the hurdles encountered, with infrastructure, cost, and technical difficulties being the most often mentioned factors.

Hypotheses Testing

First main hypothesis: There is significant differences in the answers of the study sample regarding obstacles to e-learning in the field of sports science based on gender.

To test this hypothesis an independent samples T-test was performed and the results were as shown in table no (3) as follows:

Table (3): Results of independent samples T-test for the first main hypothesis

#	Gender	Mean	St.dev	df	T	F	P-Value
1	Male	3.6491	0.59129	39	-0.489	0.034	0.628
2	Female	3.7661	0.67682				

From table (3) above it shows that t-value (-0.489) is not significant at p-value (0.628) this means that there is no significant differences in the answers of the study sample regarding obstacles to e-learning in the field of sports science based on gender and thus the first main hypothesis is rejected.

Second Main Hypothesis: There are significant differences in the answers of the study sample regarding obstacles to e-learning in the field of sports science based on academic rank

To test this hypothesis a one-way ANOVA test was performed and the results were as shown in table no (4) as follows:

Table (4): Results for the second main hypothesis

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.440	3	0.147	0.386	0.764
Within Groups	14.043	37	0.380		
Total	14.483	40			

From table (4) above it shows that F-value (0.386) is not significant at p-value (0.764) this means that there are no significant differences in the answers of the study sample regarding obstacles to e-learning in the field of sports science based on academic rank and thus the second main hypothesis is rejected.

Third Main Hypothesis: There are significant differences in the answers of the study sample regarding obstacles to e-learning in the field of sports science based on university.

To test this hypothesis a one-way ANOVA test was performed and the results were as shown in table no (5) as follows:

Table (5): Results for the third main hypothesis

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.366	4	0.092	0.233	0.918
Within Groups	14.117	36	0.392		
Total	14.483	40			

From table (5) above it shows that F-value (0.233) is not significant at p-value (0.918) this means that there are no significant differences in the answers of the study sample regarding obstacles to e-learning in the field of sports science based on university and thus the third main hypothesis is rejected.

Discussion

"Based on gender, academic standing, or university affiliation, there are no appreciable disparities in the views of e-learning barriers in the field of sports science, according to the study's findings. These results imply that these various demographic and institutional groups all have a similar perception of the difficulties associated with online learning, and these results are similar to those of .(Abdelhafeez et al., 2024; Aydın & Murathan, 2024; Emine & Karakaya, 2020) and are different from the results that (Rigamonti et al., 2020) found. The fact that e-learning platforms, especially in sports science, provide consistent technological and pedagogical problems that are not gender-specific could be the reason for the lack of significant gender disparities. When it comes to learning sports science, both male and female participants might have similar challenges adjusting to virtual teaching techniques, finding online resources, and dealing with a lack of physical contact. Given that sports science education frequently depends on real-world, experiential learning, the switch to online instruction probably presented difficulties that affected students of all genders equally. This suggests that the primary factor influencing the challenges faced in e-learning environments is the subject matter itself, not gender disparities."

The lack of statistically significant variations in the responses according to academic rank may also be explained by the common academic environment in which members of various ranks (i.e., students, lecturers, and professors) must interact with the same technology and deal with comparable pedagogical difficulties. The dependence on practical demonstrations, physical exercises, and lab-based work becomes a barrier that impacts all academic ranks equally in an e-learning environment, particularly in specialist subjects like sports science. The dependence on the online format reduces access to the experiential learning opportunities that are usually essential to the discipline, whether one is a professor or a student. This common battle probably causes perceptions of the barriers to e-learning to converge. Furthermore, while e-learning platforms and technology tools are the same for all levels of academic expertise, academic rank may not have a major impact. The fact that instructors and students have to adjust to the same technologies and get past comparable barriers to engagement and information delivery explains why the study did not find any appreciable variations based on academic rank.

The fact that there were no appreciable variations in the responses according to institution affiliation emphasizes even more how universal the challenges posed by e-learning in sports science are. Universities used similar online teaching systems during the transition to e-learning, probably independent of their size or resources. The

identical technological solutions may be the reason why participants from other universities reported the same difficulties. Additionally, the discipline of sports science heavily emphasizes physical activity and in-person learning opportunities including labs, fieldwork, and practical sports sessions, all of which are challenging to duplicate in an online setting. These discipline-specific difficulties cut beyond the boundaries of different universities, resulting in e-learning frustrations and experiences that are common to all universities. Regardless of the university, challenges such as the absence of in-person connection, constrained practical learning opportunities, and challenges with conducting physical examinations virtually will be felt by all.

The study concludes that the obstacles of e-learning in sports science are primarily determined by the inherent demands of the profession and the limitations of online learning formats, as seen by the lack of significant variances found in the data based on gender, academic rank, and university affiliation. Participants from a variety of institutions and demographics confront similar technological and pedagogical problems, which emphasizes the need for e-learning solutions designed to meet the unique requirements of practical, hands-on fields like sports science. Future initiatives should concentrate on creating cutting-edge teaching strategies and technological tools that can more accurately replicate the in-person experiences that are essential to sports science education, rather than highlighting discrepancies between groups.

Recommendations

The findings allow for the following recommendations to be made:

1. Concentrate on creating e-learning solutions that are discipline-specific, making sure that platforms and resources address the practical and hands-on aspect of sports science, and combining augmented reality tools, interactive physical activity modules, and virtual simulations to mimic in-person experiences.
2. Increase student practical involvement with e-learning by adding more possibilities for experiential learning to the online format and devising ways to let students take part in evaluations and physical activities from a distance in order to overcome the challenges mentioned.
3. In order to increase teaching and learning outcomes, give staff and students focused training on how to make the most of e-learning platforms. You should also offer workshops that deepen their awareness of online tools and practices.
4. Invest in the technology infrastructure necessary to create immersive online learning environments. Make sure the platforms and systems are set up to provide content appropriate for real-world, practical subjects like sports science. This will improve communication and the way that information is delivered.
5. Encourage cooperation between universities to exchange effective methods and best practices for overcoming barriers to sports science e-learning, as well as to share knowledge and take creative steps to enhance the quality of e-learning at all universities.

Conflict Of Interest

No potential conflict of interest relevant to this article was reported.

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