

Analysis of teaching skills in swimming and gymnastics in faculties of physical education

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ABSTRACT

The present study aimed to assess the extent to which faculty members apply effective teaching skills in swimming and gymnastics courses from the perspective of students in physical education faculties. Utilizing a descriptive method, the study involved a randomly selected sample of 195 students from the University of Jordan, Hashemite University, and Yarmouk University during the 2021/2022 academic year. A questionnaire was designed to evaluate effective teaching skills, focusing on the teacher's management of teaching principles, the use of educational aids, and evaluation. Data analysis using SPSS (version 28) revealed that faculty members demonstrated a high level of application of effective teaching skills in both courses, with arithmetic means of 4.35 for swimming and 4.27 for gymnastics. No statistically significant differences were observed in the application of these skills based on gender, university, or course ($p > 0.05$). The researchers recommend providing faculty members with necessary resources and facilities to enhance the educational process and ensure it meets the highest standards.

KEYWORDS

Teaching Skills; Swimming; Gymnastics; Physical Education; Students

1. INTRODUCTION

Today, the level of professionalism among workers across all sectors plays a crucial role in both the effectiveness of the national economy and the well-being of the population (Tokareva,

2015). For physical education teachers, professional competence relies on the integration of motivational, cognitive, and psychological components, as well as pedagogical skills, methods, and techniques that enhance the effectiveness of teaching the subject (Loy & Gordienko, 2023).

Educational institutions have always contributed to the development of the educational processes with the aim of developing its graduates to reach the highest levels of quality and mastery. Raising the quality of education shall improve society and enable it to keep up with the latest technological developments. The teacher must possess effective skills that allow him/her to use various teaching methods. It is commensurate with the mental and cognitive abilities of his pupils (Orabi & Zkarneh, 2020).

The researchers reviewed several studies. For example, Al-Zaben (2016) identified the extent to which faculty members in physical education faculties apply effective teaching skills from the perspective of undergraduate and postgraduate students in Jordan. Furthermore, Al-Naddaf & Abu Zam (2003) explored the most important elements of effective teaching of practical subjects in physical education. Through reviewing the previous studies, it was found that the effective teaching skills are important, whether they were on the scale of universities or schools. So, the current study is similar to the study of Al-Zaben (2016), and the study of Al-Naddaf & Abu Zam (2003) in terms of targeting universities and college students.

Understanding students' perspectives on teaching effectiveness in these specific courses can provide valuable insights into the quality of education being delivered. This information can be used to enhance teaching methods, improve curriculum design, and ultimately foster better learning outcomes for students in physical education programs. Therefore, the present study aims to identify the extent to which faculty members apply effective teaching skills in swimming and gymnastics courses from the point of view of students in the faculties of physical education.

1.1. Research Questions

1. To what extent do faculty members apply effective teaching skills in the swimming course from the point of view of students of the faculties of physical education?
2. To what extent do faculty members apply effective teaching skills in the gymnastics course from the point of view of students of physical education faculties?
3. Are there statistically significant differences in the application of effective teaching skills by faculty members in Jordanian universities for swimming and gymnastics courses, as perceived by students in the faculties of physical education?

2. METHODS

2.1. Study Design and Participants

This study used the descriptive approach. The population involved all students enrolled in the gymnastics course at Jordanian universities, specifically the University of Jordan, the Hashemite University, and Yarmouk University, totaling 750 students. It also included students enrolled in the swimming course at the same universities, totaling 729 students. The sample was chosen randomly and consisted of 195 male and female students, representing 13% of the population. This selection was made during the academic year 2021/2022.

2.2. Instrument

The researchers designed a questionnaire to shed light on effective teaching skills. This questionnaire was based on the works of Al-Zaben (2016); Al-Naddaf & Abu Zama (2003). The questionnaire focuses on teacher and their management of the principles of effective teaching, the use of educational aids for effective teaching purposes, and evaluation. Table 1 illustrates these aspects.

Table 1. Fields of study

Fields of study	Number of paragraphs	Paragraph numbers
First area: lesson planning	10	It falls under the first domain
The second field: the ability of the teacher and his management of the principles of effective teaching	10	1,2,3,4,5,6,7,8,9,10
The third area: the use of educational aids for the purpose of effective teaching	8	It falls under the second domain
Fourth Domain: Calendar Fields	9	1,2,3,4,5,6,7,8,9,10
	37	

A three-level rating scale was used to classify means. Those means are classified based on the standards shown below:

- – 2.33 Low Rating
- 2.34 - 3.67 mean rating
- 3.68 – 5.00 high rating

The researchers used the following formula to come up with the above standards:

The interval= maximum rating score- minimum rating score/ the number of the required scores

$$\text{Interval} = 5 - 1/3 = 1.33$$

2.3. Instrument Validity

The researchers presented the questionnaire to several experts specialized in the targeted major, all of whom were affiliated with the University of Jordan. They were asked to provide feedback on the questionnaire. Based on the experts' suggestions and observations, the researchers made the necessary amendments.

2.4. Instrument Reliability

The survey forms were administered to an exploratory sample of 20 students who were not part of the actual sample. This was done to assess reliability. The researchers calculated Cronbach's alpha coefficient values to determine the internal consistency of the instrument. These values are presented in Table 2. The total Cronbach's alpha coefficient is 0.954. The coefficients for lesson planning, the teacher's ability and management of effective teaching principles, use of teaching aids for effective teaching purposes, and evaluation are 0.944, 0.812, 0.917, and 0.825, respectively. All of these values are high and acceptable, as they exceed 0.70.

Table 2. Reliability of the instrument

Effective teaching skills		Cronbach value (α)
Lesson planning	10	0.944
The teacher's ability and management of the principles of effective teaching	10	0.812
Use of teaching aids for effective teaching purposes	8	0.917
Calendar	9	0.825
Total application of effective teaching skills	37	0.954

2.5. Procedures

After selecting the sample from gymnastics and swimming courses at the University of Jordan, the Hashemite University, and Yarmouk University, the researchers took the following steps:

- The tool was created in its initial version (Appendix 2) and then assessed by experts. Based on their feedback, the final version of the tool was developed (Appendix 3).
- The researchers distributed the questionnaire forms to the students.
- The questionnaire was converted into an electronic format using a computer.

- The questionnaire link was posted on the website of the Faculty of Sports Sciences at the University of Jordan to ensure it reached the largest number of students enrolled in the gymnastics and swimming courses.
- The data was collected electronically and analyzed to obtain results.

The study’s variables include independent variables such as gender (male, female), course (gymnastics, swimming), and university (the University of Jordan, Hashemite University, and Yarmouk University). The dependent variable is represented by the attitudes of the sample students.

2.6. Statistical Analysis

The researchers used the Statistical Package of Social Sciences (SPSS), version 28, to analyze the data and obtain results. They calculated frequencies and percentages, arithmetic means, standard deviations, and Cronbach's Alpha coefficient values. Additionally, they conducted a t-test for independent samples and a one-way analysis of variance.

3. RESULTS AND DISCUSSION

3.1. Characteristics of Participants

We begin this section by presenting the characteristics of the sample members (n = 195). Based on the results of Table 3, the sample consists of 22.6% male and 77.4% female students. In terms of courses, 58.5% are enrolled in gymnastics and 41.5% in swimming. Regarding universities, 61.5% are from the University of Jordan, 19.0% from Yarmouk University, and 19.5% from the Hashemite University.

Table 3. Characteristics of participants

Variables	Category	No.	Percentage
Gender	Male	44	22.6
	Female	151	77.4
	Total	195	100
Course	Gymnastics	114	58.5
	Swimming	81	41.5
	total	195	100
University	University of Jordan	120	61.5
	Yarmouk University	37	19.0
	Hashemite University	38	19.5
	Total	195	100

3.2. The First Study Question

To answer the first question, "To what extent do faculty members apply effective teaching skills in the swimming course, as perceived by students in the faculties of physical education?" descriptive statistics were utilized, as shown in Table 4.

Table 4. Application of effective teaching skills by faculty members in the swimming course (as perceived by physical education students)

No.	Effective Teaching Skills Areas	Mean	SD	Relative importance	Level	Rank
3	Use of teaching aids for effective teaching purposes	4.53	0.55	90.60	high	1
1	lesson planning	4.52	0.54	90.40	high	2
2	The teacher's ability and management of the principles of effective teaching	4.22	0.57	84.40	high	3
4	Calendar	4.11	0.75	82.20	high	4
	Total application of effective teaching skills	4.35	0.52	87.00	high	

Classification Categories: 2.33 and below: Low; 2.34 - 3.67: Moderate; 3.68 - 5.00: High

Table 4 shows that the extent to which faculty members apply effective teaching skills in the swimming course, as perceived by students in the faculties of physical education, is high, with an arithmetic mean of 4.35. This mean corresponds to a relative importance of 87.00%. The mean values of the skills ranged between 4.53 and 4.11. Notably, the skill of using educational aids for effective teaching ranked highest, with an arithmetic mean of 4.53 and a relative importance of 90.60%, indicating a high degree of application. Conversely, the evaluation skill ranked lowest, with an arithmetic mean of 4.11 and a relative importance of 82.20%, but still represents a high degree of application. The variation in skill estimates according to the arithmetic means is detailed in the table.

The researchers attribute these results to the actual changes that occurred in the field of teaching in general and its transformation from the usual methods to active teaching methods, especially after the technological development that the world has reached. This is what proves the use of educational means for the purposes of effective teaching ranked first, as the methods used by the faculty member varied in line with these developments.

3.3. The Second Study Question

To address the second question, "To what extent do faculty members apply effective teaching skills in the gymnastics course, as perceived by students in the faculties of physical education?" descriptive statistics were employed again, as detailed in Table 5.

Table 5. The extent to which faculty members apply effective teaching skills in the gymnastics course (from the point of view of students of the faculties of physical education)

No.	Effective Teaching Skills Areas	Mean	SD	Relative importance	Level	Rank
1	Lesson planning	4.50	0.71	90.00	High	1
3	Use of teaching aids for effective teaching purposes	4.38	0.73	87.60	High	2
2	The teacher's ability and management of the principles of effective teaching	4.21	0.64	84.20	High	3
4	Calendar	3.97	0.76	79.40	High	4
	Total application of effective teaching skills	4.27	0.64	85.40		

Classification Categories: 2.33 and below: Low; 2.34 - 3.67: Moderate; 3.68 - 5.00: High

Table 5 shows that the extent to which faculty members apply effective teaching skills in the gymnastics course, as perceived by students in the faculties of physical education, is high, with an arithmetic mean of 4.27. This corresponds to a relative importance of 85.40%. The mean values for the skills ranged between 4.50 and 3.97. Specifically, the lesson planning skill ranked highest, with an arithmetic mean of 4.50 and a relative importance of 90.00%, indicating a high degree of application. In contrast, the evaluation skill ranked lowest, with an arithmetic mean of 3.97 and a relative importance of 79.40%, though it still represents a high degree of application. The variations in skill estimates are detailed in the table.

From the researchers' perspective, a key factor in the success of the educational process is the teacher's ability to effectively plan for teaching. Proper planning significantly influences the success or failure of both teaching and learning. The other skills also ranked highly, and the researchers attribute these results to the strong alignment between faculty members and students. Faculty members are aware that their success depends on their ability to interact positively with students and address individual differences. This understanding necessitates the use of diverse teaching methods and strategies tailored to each student's needs, aiming to achieve the highest levels of performance.

For this reason, the command-and-control methods used in the past were replaced. When comparing these results with the study of Al-Zaben (2016), which indicated a lower mean degree of effective teaching skills applied by faculty members from the perspective of undergraduate students, it is clear that there has been a tangible and positive change from 2016 to 2022. This improvement reflects the ongoing advancements and aspirations in the field of learning and education.

3.4. The Third Study Question

“Are there statistically significant differences in the application of effective teaching skills by faculty members in Jordanian universities for swimming and gymnastics courses, as perceived by students in the faculties of physical education?”. The results of this question are elaborated in the following categories: differences related to gender, differences related to course, and differences related to university. Table 6 displays gender-based differences in how faculty members apply effective teaching skills in swimming and gymnastics courses.

Table 6. Gender differences in the application of effective teaching skills by faculty members for swimming and gymnastics courses

Skills	Gender	No.	Mean	SD	t value	p value
Lesson planning	Male	44	4.50	0.77	0.135	0.893
	Female	151	4.51	0.60		
The teacher's ability and management of the principles of effective teaching	Male	44	4.25	0.82	0.365	0.716
	Female	151	4.21	0.54		
Use of teaching aids for effective teaching purposes	Male	44	4.45	0.80	0.056	0.955
	Female	151	4.44	0.62		
Calendar	Male	44	4.17	0.84	1.399	0.164
	Female	151	3.99	0.72		
Total application of effective teaching skills	Male	44	4.34	0.77	0.516	0.606
	Female	151	4.29	0.53		

*: the difference of the two means is considered statistically significant at the level of significance = 0.05 or less

Table 6 presents the results of the t-test for differences in the application of effective teaching skills by faculty members in Jordanian universities for swimming and gymnastics courses, based on the student's gender. The significance values for lesson planning, the teacher's ability and management of effective teaching principles, use of teaching aids, and evaluation are 0.893, 0.716, 0.955, and 0.164, respectively. The overall significance value is 0.606. Since all significance values exceed the 0.05 threshold, the differences between the means are considered statistically not significant. The researchers attribute these results to the similar characteristics of effective teaching for both genders in swimming and gymnastics courses, which led to no significant differences in students' perceptions based on gender. Table 7 shows the results of the differences in the application of effective teaching skills by faculty members in Jordanian universities for swimming and gymnastics courses, based on the course variable.

Table 7. Differences in the application of effective teaching skills by faculty members for swimming and gymnastics courses based on the course variable

Skills	Course	No.	Mean	SD	T value	p value
Lesson planning	Gymnastics	114	4.50	0.71	0.147	0.883
	Swimming	81	4.52	0.54		
The teacher's ability and management of the principles of effective teaching	Gymnastics	114	4.21	0.64	0.082	0.935
	Swimming	81	4.22	0.57		
Use of teaching aids for effective teaching purposes	Gymnastics	114	4.38	0.73	1.592	0.113
	Swimming	81	4.53	0.55		
Calendar	Gymnastics	114	3.97	0.76	1.252	0.212
	Swimming	81	4.11	0.75		
Total application of effective teaching skills	Gymnastics	114	4.27	0.64	0.903	0.367
	Swimming	81	4.35	0.52		

The significance values for lesson planning, the teacher's ability and management of effective teaching principles, use of teaching aids, and evaluation are 0.883, 0.935, 0.113, and 0.212, respectively. The overall significance value is 0.367. Since all these values are greater than 0.05, the differences between the means are considered statistically not significant ($p > 0.05$).

The researchers attributed these results to the fact that the swimming course and the gymnastics course are among the courses that have a special nature in teaching and are characterized by their difficulty for students. This is what necessitates the faculty member to follow a variety of methods during the education process, and accordingly, the personality of the faculty member in these courses must be available in them. All the characteristics of an effective teacher and this leads to the ability of the teacher and his management of the principles of effective teaching required.

Table 8 presents the differences in the application of effective teaching skills by faculty members in swimming and gymnastics courses based on the university variable. The University of Jordan reports higher mean scores in lesson planning (4.56), use of teaching aids (4.45), and overall effective teaching skills (4.30) compared to Yarmouk University and Hashemite University. The Hashemite University has higher mean scores for lesson planning (4.49) and use of teaching aids (4.50), while Yarmouk University scores higher in the calendar skill (4.17) (Table 8).

Table 8. Differences in the application of effective teaching skills by faculty members for swimming and gymnastics courses based on the university variable

Skills	University	No.	Mean	SD
Lesson planning	University of Jordan	120	4.56	0.55
	Yarmouk University	37	4.36	0.68
	Hashemite University	38	4.49	0.84
The teacher's ability and management of the principles of effective teaching	University of Jordan	120	4.22	0.54
	Yarmouk University	37	4.16	0.64
	Hashemite University	38	4.27	0.79
Use of teaching aids for effective teaching purposes	University of Jordan	120	4.45	0.58
	Yarmouk University	37	4.35	0.77
	Hashemite University	38	4.50	0.81
Calendar	University of Jordan	120	3.96	0.69
	Yarmouk University	37	4.17	0.81
	Hashemite University	38	4.11	0.89
Total application of effective teaching skills	University of Jordan	120	4.30	0.50
	Yarmouk University	37	4.26	0.67
	Hashemite	38	4.34	0.77

University

Table 9 displays the results of the one-way analysis of variance (ANOVA) test for the application of effective teaching skills by faculty members in Jordanian universities for swimming and gymnastics courses, based on the university variable.

Table 9. Differences in the application of effective teaching skills by faculty members based on the university variable for swimming and gymnastics courses

Skills	Contrast source	Sum of squares	Degrees of Freedom	Mean squares	F value	P value
Lesson planning	The University	1.149	2	.575	1.403	.248
	The error	78.654	192	.410		
	Total	79.803	194			
The teacher's ability and management of the principles of effective teaching	The University	.234	2	.117	.308	.735
	The error	72.833	192	.379		
	Total	73.067	194			
Use of teaching aids for effective teaching purposes	The University	.429	2	.214	.479	.620
	The error	85.831	192	.447		
	Total	86.259	194			
Calendar	The University	1.572	2	.786	1.388	.252
	The error	108.726	192	.566		
	Total	110.298	194			
Total application of effective teaching skills	The University	.125	2	.063	.176	.839
	The error	68.189	192	.355		
	Total	68.314	194			

The significance values for lesson planning, the teacher's ability and management of effective teaching principles, use of teaching aids, and evaluation are 0.248, 0.735, 0.620, and 0.252, respectively. The overall significance value is 0.839. Since all these values exceed the 0.05 threshold, the differences between the arithmetic means are considered statistically not significant.

The researchers believe that these results, which are not statistically significant, came according to the large difference between the responses of the sample members from universities, where the responses of the University of Jordan reached (120), the responses of the Hashemite

University reached (38), and the responses of Yarmouk University reached (37). When compared with the study by Al-Zaben (2016), which found statistically significant differences in the application of effective teaching skills by faculty members based on the university variable, with the University of Jordan showing more favorable results, the current study does not find significant differences. Faculty members in swimming and gymnastics courses have agreed that the nature of the characteristics of these courses requires effective teaching skills, similar to other practical courses.

5. CONCLUSIONS

Faculty members apply effective teaching skills in swimming courses at a high level, which enhances student ambition. Similarly, the application of effective teaching skills in gymnastics courses is also high, positively impacting student motivation. Also, there are no statistically significant differences in the application of these skills based on respondents' gender, university, or course.

6. RECOMMENDATIONS

The researchers recommend the following: conducting more extensive and comprehensive studies to assess effective teaching skills across various courses and compare the findings with those of the current study; employing experimental methods to evaluate effective teaching skills in the same selected subject areas; equipping faculty members with the necessary resources and support to enhance the educational process; and organizing workshops to encourage faculty members to implement effective teaching skills across all disciplines.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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