The Impact of Educational Forums on Swimming Learning Outcomes in First-Year Students at the Faculty of Physical Education, Arish University

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Abstract

This study investigates the effectiveness of educational forums in enhancing cognitive achievement and skill performance in front-crawl swimming among first-year female students at the Faculty of Physical Education, Arish University. The research addresses limitations in traditional teaching methods, such as minimal student engagement and inadequate skill development, by employing the ADDIE instructional design model to integrate educational forums as an interactive and collaborative learning tool.

The study utilized a quasi-experimental design, dividing participants into two groups: an experimental group that utilized educational forums and a control group that adhered to traditional teaching approaches. Cognitive achievement and skill performance were evaluated through pre- and post-tests. Statistical analyses indicated significant improvements in the experimental group compared to the control group in both cognitive understanding and practical performance.

The results underscore the effectiveness of educational forums in fostering collaboration, promoting self-directed learning, and engaging students actively in constructing knowledge and refining technical skills. The study concludes that educational forums offer a valuable approach to improving learning outcomes in physical education and recommend their adoption in other skill-intensive disciplines. This research contributes to the broader discourse on leveraging modern technologies to enhance educational practices and outcomes.

Keywords: Educational forums, cognitive achievement, skill performance, swimming, instructional design, E-learning.

Introduction:

The rapid advancements in technology and the growing reliance on digital tools in education have paved the way for integrating innovative methods into the learning process. These changes address modern educational demands and the limitations of traditional teaching approaches, particularly in practical disciplines like swimming**. Butcher (2004)** highlighted that the educational process faces numerous contemporary challenges, which have become central to educational research. Scientific research is regarded as the key mechanism for addressing these societal challenges. Educational systems worldwide employ diverse strategies tailored to their unique national contexts to tackle these issues. Nevertheless, no educational system can overcome its challenges effectively without pursuing self-renewal and developing a modern educational framework. This framework must include updated objectives, content, methods, and tools to manage all elements influencing the educational process, ensuring the attainment of intended educational outcomes.

Electronic educational forums serve as key tools for communication and interaction within e-learning environments. These forums allow users to share topics that members can read and respond to, either in a sequential order or through interconnected discussions. Typically, each forum is divided into sections, with each section focusing on a specific subject, resulting in a wide and varied array of discussion topics **(Al-Bata, 2009).** The integration of such forums into educational systems offers a new dimension for fostering collaborative learning, enhancing student engagement, and bridging the gap between theoretical and practical knowledge. **Roberts (2015)** emphasizes that collaborative online platforms facilitate peer-to-peer learning, making them an essential part of modern education.

As one of the most transformative technological advancements, the Internet has had significant impacts across various domains, especially education. It enables learners to access educational resources anytime and anywhere, fostering their engagement in creating and contributing to knowledge. This development redefines learners as active participants rather than passive receivers of information. Supporting this perspective**, Khamis (2015)** describes e-learning environments as "comprehensive educational applications supported by the internet." These environments act as alternatives to traditional physical settings by leveraging information and communication technologies to design, implement, manage, and assess educational processes. **Salmon (2000)** further highlights that effective online moderation, and structured interactions are critical to maximizing the educational benefits of such environments.

The inspiration for this research stemmed from the researcher’s observation of the limited technical skills among female students entering their first year at the Faculty of Physical Education, Arish University. This observation underscored the need to establish proper standards for designing and managing educational forums to enhance specific learning outcomes within the swimming curriculum, rather than leaving these forums unstructured. The researcher believes that when educational forums are thoughtfully designed and effectively implemented, they can play a significant role in overcoming many educational challenges.

Through her role as a swimming instructor, the researcher observed several key issues:

1. Many students struggled to achieve the expected learning objectives in swimming due to limited exposure to effective teaching methods **(Zaki, Nada, & Zaki, 2002).**
2. There was a noticeable decline in both cognitive understanding and practical skill execution among students.
3. Traditional methods, relying on explanation and demonstration, were inadequate to address modern demands and unforeseen challenges like the COVID-19 pandemic **(Al-Hamdani, 2016).**

This study seeks to address these challenges by leveraging modern educational technologies and tools to improve the teaching and learning process. The educational forums are designed to promote interactive learning, foster peer collaboration, and provide access to a variety of resources such as videos, texts, and peer feedback. The use of frameworks like the ADDIE model **(Grafinger, 1988)** ensures a structured approach to content delivery, enabling learners to achieve higher levels of cognitive and practical skill acquisition in swimming. Additionally, **Rateb (2014)** emphasizes the importance of well-designed educational programs in skill development, aligning closely with the goals of this study.

Research Objective:

The research aims to investigate the impact of using educational forums on certain learning outcomes in swimming among first-year female students at the Faculty of Physical Education, Arish University.

Research Hypotheses

H1:"There are statistically significant differences at a significance level of ≤ 0.05 between the mean pre-test and post-test scores of the control group in the cognitive achievement test."

H2:"There are statistically significant differences at a significance level of ≤ 0.05 between the mean pre-test and post-test scores of the control group in the performance level of front crawl swimming."

H3:"There are statistically significant differences at a significance level of ≤ 0.05 between the mean pre-test and post-test scores of the experimental group in the cognitive achievement test."

H4:"There are statistically significant differences at a significance level of ≤ 0.05 between the mean pre-test and post-test scores of the experimental group in the performance level of front crawl swimming."

H5:"There are statistically significant differences at a significance level of ≤ 0.05 between the post-test mean scores of the experimental and control groups in cognitive achievement and skill performance."

Material and Methods:

Sample:

The study was conducted with a sample of first-year female students enrolled in the Faculty of Physical Education at Arish University during the academic year [2023-2024]. The participants were selected using a purposive sampling technique, as the research focused on students exhibiting low technical proficiency in swimming skills and limited cognitive understanding of the swimming curriculum.

The sample consisted of [26] students aged between [18-19] years, who demonstrated comparable baseline characteristics in their physical and cognitive capabilities based on initial assessments. These assessments included pre-tests on swimming techniques, theoretical knowledge, and cognitive retention related to the swimming curriculum.

The inclusion criteria for participation in the study were:

1. Enrollment as a first-year Faculty of Physical Education Arish University student.
2. Demonstrated difficulty in achieving curriculum objectives in swimming techniques.
3. Willingness to participate in the study and engage with the designed educational forums.

Students who had prior training in swimming or extensive experience with e-learning platforms were excluded to ensure uniformity in the sample's learning background. All participants provided informed consent before the study commenced, and ethical approval was obtained from the university's research ethics committee.

Reasons for Choosing the Sample

The selection of first-year female students from the Faculty of Physical Education at Arish University was guided by several key considerations:

1. Observed Deficiencies in Technical Skills.
2. Educational Challenges in Cognitive Retention.
3. Homogeneity of the Learning Stage.
4. Potential for Measurable Impact.
5. Alignment with the Research Context.

Research Methodology

The researcher employed the experimental method, using a quasi-experimental design with two groups: an experimental group and a control group. This approach was chosen for its suitability to the nature of the research.

Research Population and Sample

The research population consists of first-year female students enrolled in the Faculty of Physical Education at El-Arish University during the academic year [2023/2024]. The study focuses on students facing challenges in mastering swimming techniques and meeting the cognitive learning objectives of the swimming curriculum.

Sample

A purposive sample of 26 students was selected from the research population. The sample was divided into two equal groups:

1. **Control Group**: Comprising 10 students, this group followed the traditional teaching methods without any intervention from the designed educational forums.
2. **Experimental Group**: Comprising 10 students, this group participated in the intervention involving the structured use of educational forums designed to improve learning outcomes in the swimming curriculum.

Exclusion Criteria

To maintain the study's integrity and ensure homogeneity among participants, the following exclusion criteria were applied:

- Students with existing injuries or health conditions that could limit their participation.
- Students actively engage in professional or competitive sports, as their prior training could bias the results.

Table 1: Research Sample Description

Group	Number of Participants
Control Group	10
Experimental Group	10
Pilot Study Sample	6
Total	**26**

Tools and Equipment Used in Research

First: Equipment Used

- Portable scale for measuring weight.
- Stadiometer for measuring height.
- Stopwatch.
- Swimming pool.

Second: Data Collection Tools

- Cognitive achievement test.
- Performance evaluation sheet for assessing skill levels.

Instructional Design for Research

The researcher adopted the **ADDIE Model** (1988, Grafinger, D. J.) as the instructional design framework due to its suitability for the research nature and the ease of applying its phases and components. The model comprises the following stages, with details for each:

1. Analysis Phase

In this stage, the following tasks were undertaken:

- **Analysis of Educational Needs**:
  - Identifying the need to enhance basic skills and learning outcomes in swimming.
  - Transitioning from traditional skill acquisition methods to the effective use of modern technology and Web 2.0 tools.
- **Analysis of Learners' Characteristics**:
  - Defining the characteristics of the research sample:
    - Students are proficient in using communication tools, such as social networks and email.
- **Determining Educational Objectives**:
  - A comprehensive list of objectives was developed, including:
    - **General Objectives**: Overall goals of the program.
    - **Procedural Objectives**: Specific, actionable goals for skill improvement.
- **Preparing a List of Basic Swimming Skills**:
  - Identifying the essential skills required for first-year students in swimming.

2. Design Phase

This phase involved the following steps:

- **Designing Educational Content**:
  - The learning content was developed based on the learning outcomes in swimming for first-year students.
  - The content was designed in collaboration with the **Swim Coach Educational Forum** to align with the researcher's program aimed at improving basic skills.
  - Content was uploaded in various formats:
    - **Video Tutorials**: Demonstrating each skill.
    - **Static Images**: Visual representations of skills.
    - **Text Files**: Detailed explanations of each skill.
  - This approach provided students with the flexibility to review and repeatedly access the content, making it a primary source of learning.

- **Content Organization and Delivery Strategy**:
  - The educational content was made accessible via the **Swim Coach Forum**.
  - The delivery utilized multiple formats:
    - Text documents for theoretical learning.
    - Videos for practical demonstrations.
    - Static images for visual reinforcement.
  - These resources were systematically uploaded and made available to students.

Cognitive Test: Steps and Design

1. Determining the Purpose of the Test

The primary purpose of the cognitive test was to assess the students' knowledge acquisition related to basic swimming skills covered in the first-year curriculum. The test was administered as both a pre-test and a post-test to evaluate changes in cognitive understanding before and after the intervention.

2. Determining Test Items and Their Format

- The test was structured in a **multiple-choice format** with 15 questions.
- Questions were designed to assess core cognitive learning outcomes related to swimming techniques.
- Immediate feedback was provided to learners upon completing the test to reinforce learning.

3. Writing Test Instructions

The test instructions were carefully crafted in simple, clear language appropriate for the students' academic level. The instructions included:

- The **objective** of the test.
- The **total number of questions** (15 items).
- The **time limit** for test completion.
- Emphasis on reading each question thoroughly before answering.

4. Producing the Electronic Test

- The test was created and hosted on **Google Forms**, ensuring accessibility and ease of use.
- It was distributed to the research sample via the **Google Classroom platform**, allowing seamless integration with the students' existing e-learning tools.

5. Grading and Scoring Method

- Each question was assigned **1 point**, making the total score for the test 15 points.

- **Scientific validation** methods, including reliability and validity checks, were conducted before the final implementation to ensure the test's credibility.
- The scoring was performed electronically with Google Forms automatically calculating percentage scores for each student.

6. Pilot Study for the Test

- A pilot study was conducted with a group of **6 students** drawn from the research population but excluded from the main sample.
- The objectives of the pilot study included:
  - Testing the **validity** and **reliability** of the cognitive test.
  - Analyzing the **difficulty** and **discrimination indices** of the test items to ensure a balanced question design.
  - Determining the **optimal duration** for test completion, ensuring all students could complete the test within the allocated time.

This structured approach ensured the cognitive test was scientifically sound, user-friendly, and effectively aligned with the research objectives.

Table 2: Correlation with Internal Consistency Validity

Item	Axis 1	Axis 2	Axis 3
1	0.745	0.926	0.737
2	0.745	0.875	0.813
3	0.718	0.911	0.774
4	0.728	0.731	0.993
5	0.723	0.861	0.813
6	0.623	0.845	0.774

- **Significance Levels**:
  - *p < 0.05 (marked with *).
  - **p < 0.01 (marked with **).

This table confirms the statistically significant correlations between each item's score and its respective axis, indicating the validity of the test structure.

Cognitive Test Discrimination and Difficulty Coefficients (N=6)

Table 3: Discrimination and Difficulty Coefficients

Axis	Item	Difficulty	Discrimination
Axis 1	1	0.3	0.4
	2	0.5	0.5
	3	0.6	0.4
	4	0.6	0.4
	5	0.4	0.4

Axis 2	1	0.7	0.4
	2	0.6	0.4
	3	0.7	0.5
	4	0.5	0.4
	5	0.6	0.4
Axis 3	1	0.4	0.5
	2	0.4	0.7
	3	0.8	0.9
	4	0.4	0.7
	5	0.6	0.5

Interpretation:

1. Criteria for Acceptance:
   - Discrimination Coefficient: Must exceed 0.4.
   - Difficulty Coefficient: Should range between 0.3 and 0.7.
2. Items Not Meeting Criteria:
   - Review the items with:
     - Difficulty coefficients outside the range of 0.3–0.7.
     - Discrimination coefficients below 0.4.

Test Reliability Calculation Using Cronbach's Alpha

Table 4: Cronbach's Alpha Coefficients for Test Reliability (N=6)

Item	Number of Items	Cronbach's Alpha
Familiarization with the Water Stage	5	0.330
Alternating Leg Kicks	5	0.311
Arm Strokes for Front Crawl	5	0.660
Overall Test Reliability	-	**0.564**

Interpretation:

1. **Cronbach's Alpha Range**:
   - The reliability coefficients for the individual axes ranged between **0.311** and **0.660**.
   - The overall reliability of the test was **0.564**.
2. **Conclusion**:
   - The calculated reliability values, particularly the overall score of **0.564**, indicate an acceptable level of reliability for the test.
   - This demonstrates that the test is consistent and reliable for assessing the cognitive domains related to the swimming curriculum.

Equivalence of Research Groups in the Variables Under Study

Table 5: Equivalence of the Experimental and Control Groups in Cognitive Achievement and Skill Performance ($N_1 = N_2 = 10$)

Variable	Experimental Group	Control Group	Calculated U Value	Significance Level (p)	Statistical Significance
	Mean Rank	Sum of Ranks	Mean Rank	Sum of Ranks	
Cognitive Achievement	12.20	122.00	8.80	88.00	33.00
Skill Performance	9.15	91.50	11.85	118.50	36.50

1. Mann-Whitney Test Results:
   - For cognitive achievement, the p-value = 0.179.
   - For skill performance, the p-value = 0.30.
   - Both p-values are greater than the significance threshold of 0.05.
2. Conclusion:
   - There are no statistically significant differences between the experimental and control groups in the pre-test measurements of cognitive achievement and skill performance.
   - This indicates that the two groups are equivalent in the studied variables before the intervention.

Main Experiment Procedure

A. Pre-Test Measurements

- The researcher conducted pre-test measurements to assess the baseline levels of the research variables on Tuesday and Wednesday, October 5-6, 2023. These measurements provided a reference point for evaluating the effectiveness of the intervention.

B. Implementation of the Main Study

- The main study was carried out over eight weeks, starting on Monday, February 7, 2023, and concluding on Thursday, April 7, 2023.

Study Framework

The study was designed to foster active learning and collaboration among participants. Students were informed that the program's success depended on their engagement and cooperation with their peers. The framework emphasized:

1. Discussions and Peer Interactions: Encouraging open dialogue and collaboration to enhance learning outcomes.
2. Continuous Updates by Participants: Allowing learners to contribute to and modify content throughout the study period.
3. Constructive Criticism: Promoting mutual respect and a positive learning environment through the exchange of constructive feedback.

Steps Taken During the Study

1. **Student Registration**
   - The researcher collected email addresses from all participants.
   - Unique codes were assigned to each learner to ensure secure access to the platform.
   - The designated platform used for the study was Forum Link.
2. **Guidance on Joining the Forum**
   - Participants received detailed instructions on how to join the forum.
   - Invitations were sent to their respective email addresses, and students were guided through the registration process.
3. **Uploading Educational Content**
   - Content related to basic swimming skills, including scheduled activities and supplementary materials, was uploaded in line with the study timeline.
   - The content was structured to align with the program's objectives and foster interactive learning.

C. Post-Test Measurements

- The researcher conducted post-test measurements to evaluate the outcomes of the intervention on Tuesday and Wednesday, April 12-13, 2023. These measurements were compared with the pre-test data to assess the program's impact on the research variables.

Result

Presentation and Discussion of Results for the First Hypothesis

H1:"There are statistically significant differences at a significance level of ≤ 0.05 between the mean pre-test and post-test scores of the control group in the cognitive achievement test."

Table 6: Results Overview: Wilcoxon Test Results for Cognitive Achievement (Control Group)

Variable	Number of Signs	Mean Rank	Sum of Ranks	Calculated Z Value	Significance Level (p)	Statistical Significance
Negative (-)	0		0			
Positive (+)	10	5.50	55.00	2.91	≤ 0.05	Significant

Key Findings

1. **Test Results:**
    - The calculated Z value of 2.91 is less than the critical Z value of 8 at a significance level of 0.05.
    - This demonstrates statistically significant differences in cognitive achievement between the pre-test and post-test scores of the control group, favoring the post-test.
2. **Interpretation:**
    - The significant improvement in post-test scores reflects substantial cognitive development among the control group participants regarding swimming-related knowledge and understanding.

Reason for Improvement

- **Structured Instruction:**
  The improvement can be attributed to the clarity and systematic nature of the instruction provided during the study, which included:
    1. Clearly define the skills to be taught to the students.
    2. Offering targeted guidance for practicing those skills effectively.
    3. Monitoring students' performance closely and providing immediate, constructive feedback.
- **Active Monitoring:**
  The consistent presence of the instructor to supervise and correct mistakes contributed significantly to the student's cognitive gains.

Role of the Instructor

- The instructor's direct involvement in the learning process played a pivotal role in ensuring the effectiveness of the traditional teaching methods.
- The ability to provide real-time feedback and tailored instruction helped reinforce understanding and skill development, emphasizing the importance of structured, instructor-led teaching.

Presentation and Discussion of Results for the Second Hypothesis

H2:"There are statistically significant differences at a significance level of ≤ 0.05 between the mean pre-test and post-test scores of the control group in the performance level of front crawl swimming."

Table 7: Results Overview: Wilcoxon Test Results for Front Crawl Swimming Performance (Control Group)

Variable	Number of Signs	Mean Rank	Sum of Ranks	Calculated Z Value	Significance Level (p)	Statistical Significance
Negative (-)	0		0			
Positive (+)	10	5.50	55.00	2.82	≤ 0.05	Significant

Key Findings

1. **Test Results**:
   - The calculated Z value of **2.82** is less than the critical Z value of **8** at a significance level of **0.05**.
   - This result demonstrates statistically significant differences in the performance level of front crawl swimming between the pre-test and post-test scores of the control group, favoring the post-test.
2. **Interpretation**:
   - The significant improvement in post-test scores indicates enhanced proficiency in front crawl swimming among the control group participants.

Reasons for Improvement

1. **Structured Instruction and Demonstration**:
   - The use of clear and systematic instruction, along with effective demonstrations of front crawl swimming techniques, played a critical role in improving performance.
2. **Consistent Monitoring and Feedback**:
   - The instructor's active involvement in observing, monitoring, and correcting errors ensured continuous improvement during training sessions.
3. **Guidance on Technique**:
   - The repeated emphasis on correct techniques, combined with clear instructions, reinforced the proper execution of front crawl swimming skills.

Role of the Instructor

- **Direct Supervision**:
  The instructor's consistent presence ensured adherence to proper swimming techniques and provided a supportive environment for skill development.
- **Immediate Corrections**:
  The ability to identify and address errors promptly during practice sessions significantly contributed to the student's progress.

Presentation and Discussion of the Results for the Third Hypothesis

H3:"There are statistically significant differences at a significance level of ≤ 0.05 between the mean pre-test and post-test scores of the experimental group in the cognitive achievement test."

Table 8: Wilcoxon Test Results for Cognitive Achievement (Experimental Group)

Variable	Number of Signs	Mean Rank	Sum of Ranks	Calculated Z Value	Significance Level (p)	Statistical Significance
	Negative (-)	Positive (+)	Negative (-)	Positive (+)		
Cognitive Achievement	0	10	0	5.50	0	55.00

Key Findings:

1. **Test Results**:
   - The calculated **Z value** is **2.83**, which is less than the critical Z value of **8** at a significant level of **0.05**.
   - This indicates statistically significant differences in cognitive achievement between the pre-test and post-test scores of the experimental group, favoring the post-test.
2. **Interpretation**:
   - The improvement in cognitive achievement scores highlights the effectiveness of using the experimental intervention (educational forums) in enhancing students' cognitive learning.
3. **Reasons for Improvement**:
   - The researcher attributes this improvement to:
     - The use of educational forums, which facilitated:
       - Active participation and collaboration among students.
       - Continuous updates and interactive discussions that enriched the learning process.
       - Access to diverse learning resources, including videos, texts, and peer feedback.
     - The structured design and delivery of content aligned with modern educational strategies.
4. **Role of Educational Forums**:
   - The forums provided a flexible, engaging platform that supported self-paced learning and encouraged deeper understanding through interaction and discussion.
   - This approach emphasized active, rather than passive, learning, resulting in higher cognitive achievement levels.

The researcher attributes this improvement to the significant role of the educational forum in enhancing interaction and supporting the exchange of experiences among learners. This

had a substantial impact on improving the cognitive achievement of the research sample. The forum also facilitated the exchange of viewpoints within the platform, the formation of ideas, and the acquisition of knowledge from others, enabling learners to benefit from and apply these insights in their educational processes.

Presentation and Discussion of the four Hypothesis

H4:"There are statistically significant differences at a significance level of ≤ 0.05 between the mean pre-test and post-test scores of the experimental group in the performance level of front crawl swimming."

Table: Wilcoxon Test Results for Front Crawl Swimming Performance (Experimental Group)

Variable	Number of Signs	Mean Rank	Sum of Ranks	Calculated Z Value	Significance Level (p)	Statistical Significance
	Negative (-)	Positive (+)	Negative (-)	Positive (+)		
Front Crawl Swimming	0	10	0	5.50	0	55.00

Key Findings:

1. **Test Results**:
   - The calculated **Z value** is **2.80**, which is less than the critical Z value of **8** at a significance level of **0.05**.
   - This indicates statistically significant differences in the performance level of front crawl swimming between the pre-test and post-test scores of the experimental group, favoring the post-test.
2. **Interpretation**:
   - The significant improvement in the post-test scores highlights the effectiveness of the experimental intervention in enhancing the skill performance of front crawl swimming.
3. **Reasons for Improvement**:
   - The researcher attributes this improvement to the use of the educational forum, which provided:
     - Interactive learning opportunities that emphasize practical application.
     - Continuous feedback and peer collaboration.
     - Access to diverse instructional materials, including videos and text, that allowed students to review and refine their techniques repeatedly.
4. **Role of the Educational Forum**:
   - The forum acted as a dynamic learning tool, enabling students to learn at their own pace and engage actively in the process of skill acquisition.
   - The structured content delivery and emphasis on collaboration and feedback made the learning process more effective and enjoyable.

Presentation and Discussion of the fifth Hypothesis

H5:"There are statistically significant differences at a significance level of ≤ 0.05 between the post-test mean scores of the experimental and control groups in cognitive achievement and skill performance."

Table: Mann-Whitney Test Results for Post-Test Scores

Variable	Experimental Group	Control Group	Calculated U Value	Significance Level (p)	Statistical Significance
	Mean Rank	Sum of Ranks	Mean Rank	Sum of Ranks	
Cognitive Achievement	15.40	155.00	5.50	55.00	3.82
Front Crawl Swimming	15.50	155.00	5.50	55.00	3.79

Key Findings:

1. **Test Results**:
   - For both cognitive achievement and front crawl swimming, the calculated **U values** (3.82 and 3.79) are statistically significant at **p = 0.001**, which is less than the threshold value of **0.05**.
   - This confirms significant differences between the experimental and control groups in both variables, favoring the experimental group.
2. **Interpretation**:
   - The experimental group outperformed the control group in both cognitive achievement and skill performance, highlighting the effectiveness of the educational forum intervention.
3. **Reasons for Improvement**:
   - The researcher attributes the improvement in the experimental group to the advantages provided by the educational forum, such as:
     - **Self-Directed Learning**: Learners actively constructed their own knowledge by interacting and collaborating with peers.
     - **Contextual Learning**: Players were able to build meaning through personal experiences and connections with others, enabling them to understand and apply new knowledge effectively.
     - **Continuous Feedback**: The forum provided a platform for the exchange of insights, skills, and experiences, helping learners integrate new information with existing knowledge.
4. **Significance of Educational Forums**:
   - The forum fostered an environment where students could engage deeply with the content, apply critical thinking, and develop their skills collaboratively.

- This approach empowered learners to take ownership of their educational journey, resulting in superior outcomes compared to traditional teaching methods.

Conclusion

This study aimed to investigate the impact of using educational forums on cognitive achievement and skill performance, specifically in front crawl swimming, among first-year female students at the Faculty of Physical Education, Arish University. The findings revealed significant improvements in both cognitive and skill-based learning outcomes for the experimental group compared to the control group, highlighting the effectiveness of integrating modern educational technologies into the learning process.

The results demonstrated that educational forums provide a dynamic platform that fosters collaboration, interaction, and self-directed learning. By allowing students to construct their own knowledge, exchange experiences, and receive continuous feedback, these forums proved to be a powerful tool for enhancing the educational experience. The experimental group significantly outperformed the control group in both cognitive and practical assessments, indicating the superiority of the forum-based learning approach over traditional methods.

The study concludes that the integration of educational forums into teaching can effectively address the limitations of conventional teaching methods, particularly in skill-intensive domains like swimming. These forums not only promote deeper understanding and retention of knowledge but also facilitate the development of practical skills through peer interaction and real-time feedback.

Recommendations

Based on the findings, the study recommends:

1. Incorporating educational forums as a complementary tool in teaching practical and theoretical courses, especially in physical education.
2. Designing structured and interactive online platforms to support student engagement and collaboration.
3. Providing training for educators and students to maximize the benefits of technology-enhanced learning.

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