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The Impact of the Guided Discovery Strategy on Developing Creative Thinking among Sports Students

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Research Article

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Abstract

Background/purpose. In modern society, the process of shaping students' creative thinking takes on a new and broader dimension. This study aimed to understand ways of forming creative thinking in students by identifying the impact of the Guided Discovery Strategy on developing creative thinking. It is a process in which students are encouraged to invent through the discoveries and inventions of other people. This happens when learners are immersed in authentic situations and are allowed to figure out the solutions and discover knowledge themselves.

Materials/methods. The study employed a quasi-experimental approach. The sample consisted of 60 students taking fitness courses at the faculty of physical education and sports sciences at Hashemite University. The sample was divided into two groups. The first group applied the educational program using the Guided Discovery Strategy. The second group applied the lecture method. All researchers were involved in the design of the teaching units for the Guided Discovery Strategy. A scale was designed to assess creative thinking consisting of 28 items and four dimensions: sensitivity to problems, originality, fluency, and flexibility.

Results. The results indicated differences in the impact of using the Guided Discovery Strategy on the development of creative thinking skills of students between the two groups. The group that used the Guided Discovery Strategy showed better improvement in their critical thinking skills.

Conclusion. The study concludes that using the Guided Discovery Strategy can have a positive effect on developing the creative thinking skills of students, and it can be applied in different learning contexts to test its utility and to develop its application.

1. Introduction

The teaching process contributes to developing students from all aspects (physical, skill-based, mental, psychological, and social), and this depends to a large extent on the good choice of the appropriate teaching strategy that takes into account individual differences between students as well as the nature of the subject being taught and the skill to be learned (Hasoun, 2018). Scientific and cultural progress requires the existence of an educational system that is modern in its organization and authentic in its framework and content (Al-Adili, 2022).

The world has recently witnessed many developments in all aspects of life. The rapid development in technology and knowledge production, as well as the significant increase in population, have had a wide-ranging impact on various aspects of human life (Al-Tahayneh & Oudat, 2018). Thus, modern physical education teaching requires new and better ways of engaging and empowering learners with learning experiences that can help them develop, build, or construct a meaningful understanding of a given task and unleash their curiosity for science and discovery (Gonsalvez, 2020). This underscores the need for innovative teaching methods and suitable instructional materials that promote mutual interaction and active participation of the learners to make learning more interesting, meaningful, and permanent (Mwhoobi et al., 2016).

Creative thinking is one of the finest human activities, as scientific progress cannot be achieved without developing creative abilities. The development of human societies depends largely on the ability to think creatively (Oudat et al., 2023), and the educational process is one of the important processes in developing creative skills. It is also necessary to diversify the use of different educational methods to meet the needs and desires of students (Gonsalvez, 2020). Creative thinking improves performance and excellence in various fields, specializing in physical education and providing appropriate educational means to stimulate and develop creativity and athletic performance among athletes (Qi, 2023; SueSee et al., 2016).

Creative thinking skills are vital in this era of globalization, as they enable one to make decisions independently. Creative thinking skills are cognitive activities that produce new products that others have not considered. Awang and Ramly (2008) agree that creativity makes new things exist. Johnson (2002) states that creative thinking produces original and constructive ideas, emphasizing intuitive and rational thinking. Thus, creativity includes the ability, attitude, process, and potential to understand problems and find solutions through various methods (Neolaka & Corebima, 2018).

There are several cognitive challenges facing learners, and teaching strategies play a vital role in supporting learners' performance. Guided Discovery Strategy, defined as an instruction method in which learners construct essential information for themselves with minimum guidance from the teacher (Spittle et al., 2023), can be one way of helping students acquire challenging skills effectively. Teaching methods play a large and important role in teaching various sports skills, and the more advanced the teaching method used, the better the learning process and the greater the opportunity to advance skill performance. Therefore, scientists' attention has shifted from studying high-achieving students to creative students who rely on critical thinking to solve problems they face in school or real life (Atiyat & Taifour, 2011).

This study was conducted to investigate whether the Guided Discovery Strategy could improve sports students' performance in creative thinking, which requires focusing on developing and mastering basic skills appropriately and supporting creativity in implementing these skills by using innovative teaching methods beyond the traditional ones (Abdel Hamid, 2021). The study particularly addressed the following research question by comparing the performance of control and experiment groups of students:

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RQ: Are there any differences in developing creative thinking skills between the group taught using guided discovery and the group taught using traditional teaching methods?

2. Methodology

This study used a quasi-experimental approach. The study population consisted of 60 students (M/F) registered for fitness courses at the faculty of physical education and sports sciences for the academic year (2023/2024), representing (100%) of the study population.

2. 1. Study Instruments

2. 1. 1. Creative Thinking Scale

The researchers reviewed the theoretical literature and studies by Mansouri and Elwan (2017) and Osborne et al. (2016) to design a scale for assessing students' creative thinking. The scale consisted of 28 items and four dimensions: sensitivity to problems, originality, fluency, and flexibility. In order to verify the face validity of the scale, it was reviewed by five experts specialized in physical education from the faculty members at Jordanian University.

2. 1. 2. Teaching Units

The researchers designed the teaching units for the Guided Discovery Strategy after reviewing the studies by Omar et al. (2018) and Gajda (2016). The program involved lessons spread over six weeks, with two units per week and a total teaching time of 60 minutes per unit.

2. 1. 3. Application of the Guided Discovery Strategy

While applying the Guided Discovery Strategy, the teachers prepared students with appropriate physical and mental warm-up exercises. They asked questions that pushed students to think, research, and discover through movement. The questions extended from easy to challenging to stimulate creative thinking in students. Teachers also paid attention to using terminology that the students were familiar with to ensure students' comprehension. The teachers corrected errors immediately and provided feedback in simple and positive words. In case of any wrong response, the teachers repeated the question to guide the students toward the correct response. The teachers also presented questions in a sequence that pushed students toward discovering the correct response. Thus, the teachers allowed students to iterate their responses and learn from their mistakes.

2. 2. Application of the Instrument

The scale designed to assess students' creative thinking skills was distributed to the sample in the first semester of the academic year 2023/2024 after the educational program prepared using the Guided Discovery Strategy was applied.

3. Results

To address the research question regarding whether any differences existed between the creative thinking scores of students in the two groups, arithmetic averages, standard deviations, and paired sample t-tests were performed. The results are presented in Table 1.

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Table 1. Arithmetic averages, standard deviations, and t-test results regarding differences in creative thinking skills

Domains	Groups	N	Mean	SD	Value (T)	Sig
Sensitivity to Problems	G1	30	4.65	0.74	-3.240	0.000
	G2	30	3.01	0.59		
Originality	G1	30	4.36	0.14	-5.125	0.000
	G2	30	2.80	0.67		
Fluency	G1	30	4.22	0.11	-2.810	0.000
	G2	30	3.17	0.13		
Flexibility	G1	30	4.13	0.06	-2.364	0.000
	G2	30	3.21	0.40		

As shown in Table 1, the results showed statistically significant differences (α≤0.05) between the groups in all dimensions of creative thinking skills (sensitivity to problems, originality, fluency, flexibility). The first group that applied the educational program using the Guided Discovery Strategy had significantly higher scores compared to the group that applied traditional teaching methods.

The results also showed that there were statistically significant differences (α≤0.05) between the groups in the "sensitivity to problems" dimension, considering that t value of -3.240 (α≤0.000). The differences came in favor of the first group with an arithmetic average of (4.65) while the arithmetic average of the second group was (3.01).

There were statistically significant differences (α≤0.05) between the groups in the "originality dimension" considering the t value of -5.125 (α≤0.000). The differences came in favor of the first group with an arithmetic average of (4.36) while the arithmetic average of the second group was (2.80).

The results revealed statistically significant differences (α≤0.05) between the groups in the "fluency" dimension with the t value of -2.810 (α≤0.000). The differences came in favor of the first group with an arithmetic average of (4.22) while the arithmetic average of the second group was (3.17).

Statistically significant (α≤0.05) differences were observed between the groups in the "flexibility" dimension with the t value of -2.364 (α≤0.000). The differences came in favor of the first group with an arithmetic average of (4.13) while the arithmetic average of the second group was (3.21).

4. Discussion

In physical education, various innovative instructional strategies can be used to arouse students' interest and help them understand the subject well. If a proper strategy is chosen and the plan is well executed, students will actively engage in the lesson and derive immense benefits (Husein & Al-

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Hayani, 2019). The results of the current study showed that the "Guided Discovery Strategy" can be one of these effective teaching strategies with the potential to enhance students' creative thinking.

Using the Guided Discovery Strategy, students can be better engaged in the educational process and be motivated to develop new skills and knowledge through creative thinking (Amara, 2017). The Guided Discovery Strategy also contributes to planning and implementing tasks appropriately to achieve the goals of the educational process and helps students evaluate their performance. Results also indicated that the students enjoyed the program, which helped them develop positive attitudes toward the program (Oudat et al., 2023). The Guided Discovery Strategy also transfers information from the teacher to the student by creating the necessary conditions that enable the student to discover performance-related information (Al-Sayid & Abdel Hamid, 2021). Thus, using the Guided Discovery Strategy provides a suitable environment for discovery, experimentation, and application to enhance students' performance (AL-Luwaici & Al-Zoubi, 2020).

Many studies have shown that the guided discovery method enables students to interact with activities and acquire new knowledge and skills (Asad & Ahmad, 2015). If a student receives good training on the concepts and skills that fit his capacities and potential, he can acquire many good skills. Guided discovery is one of the teaching strategies that depends on the learner's activity and the teacher's direction to reach the targeted educational goals. With its focus on problem-solving, the Guided Discovery Strategy can be highly beneficial in teaching skills that are rather challenging for students (Aziz & Amer, 2018).

According to El Khouri et al. (2020), the Guided Discovery Strategy takes into account individual differences among students by establishing active interaction between the student and the teacher and thus increases the student's desire to learn (Casad & Jawaharlal, 2012). It can also contribute to developing creative thinking among students by increasing the motivation of students with low levels, raising students' morale, encouraging them to try to achieve higher outcomes, and creating an atmosphere of fun during learning. As a result, this strategy supports students' understanding, attention, ability to focus, creative thinking, and perception to a significant extent.

Guided Discovery Strategy encourages students to take a more active role in their learning process by solving problems on their own (Al-Sayid & Abdel Hamid, 2021). In the guided discovery process, a student can develop any skill if the instruction is organized appropriately. Unlike the lecture method of instruction, guided discovery is student-centered and activity-oriented, where the teacher assists students in discovering facts about problems and gaining experience. Here, the teacher presents students with information in a form that requires them to identify relationships within the information and to structure and make sense of it (Hayek & Shdeifat, 2018). Learning by discovery is a powerful method for teaching skills and enabling long-term retention (Casolo et al., 2019).

5. Conclusion

The results of the current study indicated that guided discovery strategies help students acquire skills through self-directed learning, which involves taking responsibility for their own learning and exploring content necessary for developing that skill. When the guided learning process is employed in teaching skills, student understanding is reinforced through application and problem-solving. The guided discovery strategy positively affects the development of creative thinking and the learning of some skills. Therefore, it is necessary to direct teachers to use the guided discovery strategy in teaching to develop creative thinking skills.

Declarations

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