



Thinking and Learning the Glide Technique in Shot Put among Students of the College of Physical Education and Sports Sciences

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Abstract: Zahoric's model was employed in this study in order to develop reflective thinking in the students of Physical Education and Sports Sciences as well as to master the glide technique in shot put. The importance of the scientific value of the study is that it keeps pace with the modern tendency to add self-regulated learning in the learning process in order to develop higher mental skills. To reach the goal, the experiment was run with two groups design (experimental and control). The study sample comprised (20) second-year students. The subjects were distributed randomly and equally on two groups. The study was done for 2 months duration which was of 4 units in a week, as the experimental group implemented Zahorik model control group implemented the regular method. After processing the data, the results of the reflective thinking scale and technical performance test show that the experimental group in the post-test for both variables has significant superiority. According to that, it was confirmed that Zahorik model gives a positive contribution to the variables. The overall conclusion of this study indicates that Zahorik's model is an effective educational model for developing reflective thinking and learning shot put glide technique. Moreover, it provides a functional learning situation. This functional learning situation combines cognitive construction and motor application in an integrated manner.

Keywords: Zahorik's Model, Reflective Thinking, Glide Technique, Shot Put, Motor Learning

Introduction

In the subject Physical Education, the learning process has moved away from resorting to strategies based on the transmission of information to other educational models that grants the learner a main role when constructing their knowledge. Studies show that learning movements mechanically does not help the learning to happen, rather conscious understanding and a systematic analysis of performance helps the learning of movements. According to constructivist philosophy, Zahorik Model as an instructional model. It provides the learners with the opportunity to connect newly acquired information with the previously learnt information and helps in achieving cognitive development. Through this process, the student takes an active role in controlling the learning process, which then leads to the development of a higher-order thinking function, namely reflective thinking. A better

way to perform shot put is by execution through cognitive and motor skills integration. When the learner does not grasp the mechanical actions' pattern, the execution will be affected. This necessitates the use of an instructional model that facilitates students in analyzing their performance, identifying errors, and re-organizing their motor experiences in a conscious way.

As such, the present article looks into the effectiveness of the Zahorik instructional model on reflective thinking, and the learning of the glide technique in shot put on the College of Physical Education and Sports Sciences students. Through the article, the author wishes to have a discussion on cognitive and motor integration in learning.

Research Problem

Over the years, physical education has greatly evolved in the field of instructional games and sports, but teaching still follows the age-old tradition of displaying a motor model and repeating the movement. In those settings, subjects do not get to access their performance-level or engage in reflective thinking activities.

The problem appears in the teaching of glide in shot put. The skill process is the awareness of the sequence of technical stages which is controlled by one's body position and the capacity of transferring force. Teaching based only on direct explanation leads to insincerity in learning with deep cognitive scope. Thus, the poor performances keep repeating.

Research issue.

Consequently, the research problem examines how a self-regulated learning instructional model affects one's reflective thinking and technical performance. This study will answer the following question.

Question of research.

What is the impact of using the Zahorik instructive model to enhance reflective thinking skills and learning of gliding method in shot put among the students at College of Physical Education and Sports Sciences?

Research Objectives

1. To create an educational program about the glide technique used in shot put.
2. To discover how much the model affected the development of reflectiveness.
3. thinking
4. The model's effect on improving the technician was found out.
5. To examine the possession test of the experimental and control groups.

Research Hypotheses

1. An analysis showed that the two research groups had the same characteristics at the pre-test. There were no statistically significant differences in reflective thinking or technical performance prior to the experiment.
2. The results of the post test show that both control and experimental groups differ significantly in favor of the experimental groups..

Research Scope

- Human domain Students of the second academic stage at the College of Physical Education and Sports Sciences, University of Al-Qadisiyah.
- Spatial domain The college stadium.
- Temporal domain From 1 December 2025 to 15 February 2026.

Definition of Terms

John Zahorik Model (Yaseen, 2012) A teaching framework based on constructivist theory. The model organizes the process of learning through a sequence of studied stages: from activation of existing knowledge to reflective consideration of information. The purpose is to allow learners to systematically and actively construct knowledge.

Reflective Thinking A deliberate mental operation that involves analyzing, evaluating, and reorganizing learning experiences in order to achieve greater understanding or mastery and enhance performance.

Glide Technique in Shot Put A technical method of performing the shot put which involves a backward sliding movement within the circle prior to the release phase so as to develop the maximum directed force towards the throw.

Methodology

Research Methodology

The study used an experimental design with proper control, which is in the form of two equivalent groups (one experimental one. control). Variables were assessed through pretest and posttest measures.

This design is especially appropriate to investigate the effect of the independent variable, the Zahorik model, on the dependent variables, reflective thinking and technical performance. It facilitates a direct comparison of changes brought about by the educational intervention.

The term experimental method applies to a scientific procedure which involves the introduction of a deliberate and controlled change in an independent variable and controlling for other influence. The changes in the dependent variables will then be observed and interpreted within the causal relationships among the variables (Al-Kadhimi 2012, p.137).

The experimental group received the educational units designed by following the Zahorik model The conventional teaching technique used by the course instructor was used

by the control group. Pre- and post-tests were conducted to measure learning of the glide technique in the shot put and reflective thinking. Using the above measurements the researcher was able to measure the effect of independent variable on learning outcome.

Research Population and Sample

The community of the research is the second year students of college of physical education and sports sciences / university of al-qadisiyah for the season 2025-2026.

The official curriculum includes athletics in these students. The exact identification of the research community is required to ensure the correct generalization of the scientific results (Al-Khuli, 2001, p.58).

The researchers purposely selected the sample from section D because it was suitable for the application. The students were assigned randomly to two equal groups of ten students in each group. It made sure that all of the groups looked the same.

Homogeneity of sample was verified on the basis of pre-tests of the research variables and the statistical analysis of the results. This stage enhanced the dependability of subsequent assessments.

Test Group

- The educational units made by the Zahorik model were received.
- Experimental group.
- Studied using the standard teaching methods used by the course professor.

Research Tools

The researcher utilized various tools and equipment relevant to the shot put event, particularly the glide technique. Ensuring precise result measurement and performance safety during the implementation of the educational program required using these tools.

The success of practical implementation depends on the choice of relevant tools. If the research is properly equipped, then learning will become more safer and accurate. It will also help in controlling the variables. Abu Al-Ala stressed the necessity of utilising suitable tools and equipment that fit the nature of the sports activity used in the learning process and implementation in the field. (Abu Al-Ala, 2012, pp.112–114).

Tests Used in the Research

High Jump Skill Evaluation Test

A technical performance evaluation form is developed based on how technical phases are divided in the World Athletics Guide (World Athletics, 2019) and the reference of Bastawisi Ahmed (1997). The form incorporated preparing, gliding, powering, launching and following through with the court entry.

Technical Performance Evaluation Test for the Glide Technique in Shot Put (Knudson, 2013)

Test Name

Technical performance evaluation test for the glide technique in shot put.

Purpose of the Test

The objective of this research is to measure of the level of learning of the technical performance stages of the glide technique in shot put among students of Physical Education and Sports Sciences.

Equipment Used

- Official throwing circle
- Official shot put (7.26 kg for male students)
- Technical performance evaluation form
- Video camera when needed
- Measuring tape

Performance Procedure

According to the official rules, the student executed the shot put skill with the glide technique. Every student gets a maximum of three chances. When necessary to improve evaluation accuracy, performance may be videotaped.

Evaluation Method

A form of evaluation had been prepared on the basis of division of skill into main technical phases. A committee made up of three athletics specialists conducted the assessment. The evaluators' scores were averaged arithmetically to compute the final score.

Reflective Thinking Scale

In assessing scientific literature on reflective thinking, the Reflective Thinking Scale by Mohammad Muqabalah (2019) has been adapted. The 24 items of the scale are distributed according to a five-point Likert-type scale.

The reflective thinking scale was scientifically adapted according to the needs of the current study. In evaluating the item's suitability for the sample of second-year students, the investigator consulted a panel of experts in sports psychology, athletics and, motor learning. Modifications were made to the scale based on the evaluators' feedback so that it would suit the nature of learning the glide style of shot put technique.

Result and Discussion

Discrimination Indicators

The items of the scale were analyzed using two methods.

Extreme Groups Method (External Consistency)

Upon the completion of applying the Scale to the statistical analysis sample which consisted of the totality of 60 students, their total scores were calculated and were arranged in an ascending order. This was done to determine the extreme groups, the upper and lower

groups, each representing 50 percent i.e. there is a 30-student representation in each of the groups.

The researcher employed the independent samples t-test to assess item discrimination power. The calculated t values are compared with the tabulated value of 2.002 at 0.05 level of significance and 58 degree of freedom. All the items are found to be statistically significant and suitable for measurement.

Internal Consistency

To determine the internal consistency, the Pearson correlation coefficient was calculated between item score and total scale score. According to the tabular value of 0.138, all correlations are significant, thus; it confirms the internal consistency of the scale.

Scientific Foundations of the Scale

First: Validity

Face Validity

The scale was presented to a group of experts and specialists. The results indicated a high level of agreement regarding the suitability of the items. No item was excluded.

Construct Validity

Construct validity was verified through

- The extreme groups method
- Internal consistency between item scores and the total scale score

Second: Reliability

Split-Half Reliability

The correlation coefficient before correction reached 0.838. After correction using the Spearman–Brown formula the coefficient reached 0.912, indicating high reliability.

Cronbach's Alpha

Cronbach's alpha coefficient reached 0.822, which indicates a good level of internal consistency and reliability.

Pilot Study

The researcher implemented the educational program after conducting a pilot experiment. The tests and tools suitability have been determined and by when they should be done by the educational unit. This step, according to Abdul Hamid, is essential in order to prevent mistakes. (Abdul Hamid, 2010, pp.105–107).

Main Experiment of the Study

Educational Program

As a result of studying scientific literature and previous research, the plan for the educational program for the experimental group was developed by the researcher according

to Zahorik's model of self-regulated learning. The aim of the program was to develop reflective thinking and enhance learning of the glide technique in shot put.

The program spanned eight weeks, providing four educational units per week and summing to thirty-two educational units in total. Each educational unit was allotted a duration of 120 minutes to be distributed as follows.

Preparatory section

24 minutes for general and specific warm-up.

Main section

84 minutes including

- Educational part – 30 minutes
- Practical application part – 54 minutes

Final section

12 minutes.

The educational units were designed according to the five steps of the Zahorik model and were implemented practically within the main section of the educational unit as follows.

Steps of Applying the Zahorik Model Within the Educational Unit

Activation of Information – 5 minutes

Discussion of technical performance stages stimulated students' prior experiences related to the shot put skill. This step related the previously learnt knowledge to the new knowledge.

Acquisition of Information – 10 minutes

This skill was first displayed altogether and followed by its parts using visual instructional materials. The glide technique consists of several technical phases which include preparation, gliding movement, power position, release and follow-through.

Understanding Information – 15 minutes

Students discussed the technical performance and analyzed common errors. Small group discussions were used to exchange ideas and enhance understanding and reflective thinking.

Use of Information – 35 minutes

Students applied the skill practically through progressive instructional exercises. Immediate feedback was provided to correct errors and improve performance.

Reflection on Information – 5 minutes

Learning, students were given opportunities to reflect on their performance, assess their clarity over the skill and relate it to real . situations

The educational units were presented to a group of experts and specialists in athletics and motor learning to obtain their opinion regarding the suitability of the content. We made all necessary modifications based on their feedback.

Preparation of Instructional Exercises

In learning the shot put with the glide technique, the researcher developed a set of instructional exercises. The exercises were created with the help of motor learning and athletics specialists, while taking scientific principles for teaching motor skills into account. The exercises were developed on the principle of moving from simple to complex and from completing partial performances to complete performances. The exercises were adjusted according to the physical and motoric qualities of second-year students.

In addition, the workouts consisted of combined trainings with the aim of explosive strength, balance and motor coordination improvement. The essentials require performing the glide technique efficiently while doing shot put.

Moreover, the exercises dealt with correcting usual technical errors which aimed at bridging the gap between theory and practices.

Table 1. Through this method, reflective thinking gets developed and quality of technical performance gets improved.

Week	Educational Objective	Nature of Instructional Exercises	Technical Focus
First	Introduction to the technical phases	Explanation and demonstration of the complete performance, combined with exercises for correct shot holding and the ready position	Understanding the sequence of performance
Second	Mastery of the glide phase	Backward sliding exercises without the shot, followed by practice using a light shot	Balance and smooth movement
Third	Stabilization of the power position	Exercises that require pausing in the power position, followed by standing throws	Proper foot placement and correct rotation
Fourth	Linking the glide with the power position	Gradual partial performance followed by linking the phases together	Motor coordination
Fifth	Performing the skill in a nearly complete form	Execution of the glide technique with emphasis on correcting common errors	Technical accuracy
Sixth	Improving the release and follow-through	Special exercises focusing on the release angle and follow-through movement	Timing and explosive release
Seventh	Stabilization of full performance	Full execution combined with group discussion and performance analysis	Reflective thinking
Eighth	Final performance evaluation	Comprehensive practical performance and simulation of the final test	Technical stability

Pre-Tests

On the 15th of December 2025, pre-tests for both the experimental group and control group were conducted at the stadium of the College of Physical Education and Sports Sciences, University of Al-Qadisiyah. Before implementation, preconditions suitable for testing were prepared. The technical performance test and the reflective thinking scale were hurriedly applied within a minute application for 80 minutes.

Educational Implementation

The educational program designed in accordance with the Zahorik model was implemented by the researcher with the experimental group. The instructional exercises consist of practicing the glide technique in shot put. This exercise was designed based on the nature of the sample and the objectives of the research.

The program started on December 20, 2025 and ended on February 20, 2026, basically lasting two months. Over the course of 8 weeks, the program consisted of 32 instructional units or four a week.

The researcher adheres to the principle of progressive distance in the presentation of exercises from partial performance to complete performance. Instructional exercises three to four in each unit. More attention was focused on the application of Zahorik model stages in the core section of the lesson plan to enhance reflective thinking and improve the technical performance of the pedagogical skill.

Post-Tests

The post-test implementation of the educational program for the research sample was conducted by the researcher on the two groups, experimental and control. The same conditions of location, time, implementation modes and equipment used the same as at pre-tests. It helped in ensuring accurate comparison of values during testing.

Phase One: Reflective Thinking Scale Assessment. On Sunday, 22 February 2026, the post-test for the reflective thinking scale was conducted after the reflective thinking intervention that had taken place in both groups. the scale was distributed to the members of both the groups, their total being 20 students.

The forms that were completed were collected and the required data were recorded in specially prepared forms.

Stage two was the technical performance test of the glide technique experimental group. On Monday 23 February 2026 was conducted post-test for technical performance. The experimental group members performed shot put skill using glide technique according to official rule. The judges were monitoring the event for a precise date in the future.

Stage 3: Measuring technical performance in glide technique – control group.

The control group was given a post-test on Tuesday, 24 February 2026, using the same procedure as of the experimental group. This was done to ensure equality and accuracy of results.

Statistical Methods

The researcher used the statistical software IBM SPSS Statistics Version 26 to analyze the research data.

Table 2. Differences between pre-test and post-test scores in reflective thinking for the control group

No	Variabl e	Unit of Measureme nt	Pre-Test Mea n	Pre-Test SD	Post-Test Mea n	Post -Test SD	Mean Differen ce	SD Differen ce	Calculat ed t value	Significan ce Level
1	Reflective thinkin g	Score	65.167	2.329	77.000	3.861	-11.833	3.243	10.259	0.000

Degrees of freedom: **9**

Significance level: **0.05**

Statistical analysis revealed an improvement in the mean scores of reflective thinking between the pre-test and post-test among members of the control group. This increase reflects the effect of continuous exposure to learning situations, even when traditional teaching methods are used.

Practice and repetition accompanied by classroom discussions can contribute to stimulating processes of mental analysis to a certain extent. However, the nature of this improvement remains limited in depth because it was not based on a deliberate organization of reflective processes or a systematic guidance of thinking stages. Instead, the improvement resulted from general educational interaction.

This improvement may be attributed to the students' continued exposure to learning situations, classroom discussions, and practical applications. These experiences gradually enhanced their ability to analyze and evaluate their own performance even within the framework of traditional teaching methods.

Nevertheless, this development can be considered a natural improvement resulting from general educational interaction. It is expected to be lower than the level of improvement achieved by the experimental group, which was taught using the Zahorik model, a model specifically designed to activate cognitive processes and systematically enhance reflective thinking.

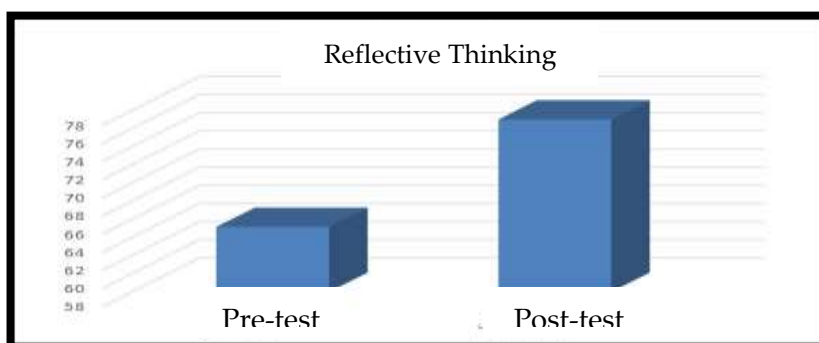


Figure 1. Illustrates the differences between the pre-test and post-test scores of reflective thinking for the control group.

Presentation, Analysis, and Discussion of Reflective Thinking Results for the Experimental Group

Table 3. Differences between the pre-test and post-test scores in reflective thinking for the experimental group

No	Variabl e	Unit of Measureme nt	Pre- Test Mea n	Pre- Test SD	Post- Test Mea n	Post - Test SD	Mean Differen ce	SD Differen ce	Calculat ed t- value	Significan ce Level
1	Reflecti ve thinkin g	Score	65.000	2.256	83.250	3.049	-18.250	3.019	15.512	0.000

Degrees of freedom: 9

Significance level: **0.05**

The results of experimental group criterion showing statistically significant differences in the pre- and post-test scores in reflective thinking are discussed in Table (3). The computed value of t was 15.51, which is higher than the table value at 0.05 level of significance. Therefore, the differences in post-test in favour of post-test are statistically significant.

The findings show that students' reflective thinking improved significantly after the implementation of the program. The post-test scores were higher compared to the pre-test scores which means that the intervention had a significant effect on the development of the students' cognitive abilities related to reflective thinking.

This important improvement can be attributed to educational units that are designed according to the Zahorik instructional model. The model identifies several important learning processes which support higher-order thinking.

Involves processes like.

- The prior knowledge of the student is activated.
- A detailed analysis of technical performance.
- a group discussion among students.
- Self-evaluation and reflection opportunities.

Students were prompted to engage with their evaluation and rethink the technical stages of the glide technique used in shot put through these structured delivery stages. This teaching method organized their minds and led to a greater ability to think about their learning.

The Zahorik based learning strategy contributed to the gradual development of the higher level thinking skill, especially reflective thinking. This factor contributed to the increase of cognitive engagement as well as skill learning in students in the experimental group..

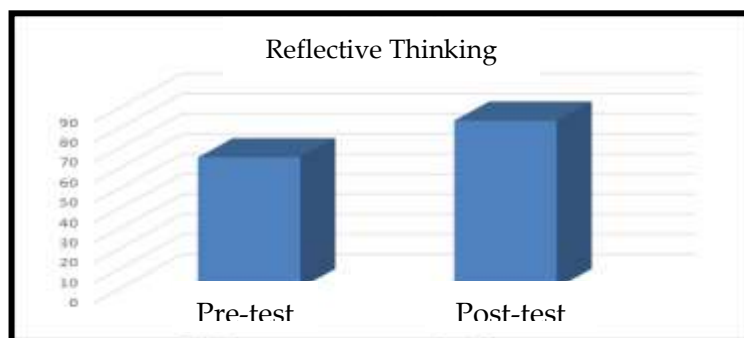


Figure 2. Illustrates the differences between the pre-test and post-test scores in reflective thinking for the experimental group.

Presentation, Analysis, and Discussion of Reflective Thinking Results for the Control and Experimental Groups

Table 4. Differences between the control and experimental groups in the post-test of reflective thinking

No.	Variable	Control Group Mean	Control Group SD	Experimental Group Mean	Experimental Group SD	Calculated t-value	Significance Level
1	Reflective thinking	77.000	3.861	83.250	3.049	4.229	0.000

Degrees of freedom: 18

Significance level: 0.05

The differential post-test analysis detailed in the above Table (4) reveals that the post-test means of the experimental group showed statistically significant improvement as compared with the control group.

The calculated t-value is 4.23 which is greater than table value at 5 per cent level. This indicates that a statistically significant difference exists between the two groups in favor of the experimental group.

The Zahorik instructional model positively impacts students' reflective thinking, as seen from this result. According to the model gave students opportunities to analyse information, link the older knowledge with the newer experiences, and self-evaluate.

Prompting and self-discordance generate deeper cognition and systematic reflection. In contrast, the control group within the traditional teaching approach did not receive the same teaching opportunities as this experimental group.

This makes it evident that the superiority of the experimental group indicates the effectiveness of the Zahorik model in reflective thinking through orderly learning stages that stimulate one's analytical, discussions, and conscious evaluation.

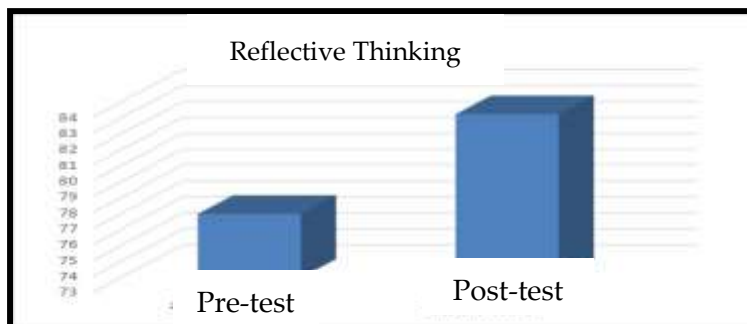


Figure 3. Shows the differences in the post-test of reflective thinking between the control and experimental groups.

Discussion of Reflective Thinking Results

The results of the study suggest that applying the Zahorik instructional model can lead to a real improvement to the reflective thinking ability of students. Statistical analysis showed a significant difference in favour of the post-test results of the experimental group, which was also statistically clearly superior to the control group at the end of the experiment.

These findings provide scientific support to the Zahorik model that contributes to the cognitive dimensions of sports performance and prosaically outreach to the current or wrongly didactic tools in education.

This development is due to the nature of the Zahorik model which depends on self-regulated learning. This model puts the student in the center of the teaching-learning process. The student acquires knowledge, analyzes learning situations, and constantly evaluates performance. The model's stages: activating information, acquiring information, understanding information, using information, and reflecting on information strengthened the relationship between prior knowledge and the new learning experience. The stages also triggered analysis and self-review activities of students and reflected in the improvement of their reflective thinking.

The model created a learning environment that encourages discussion, idea exchange, questioning, and structured feedback, and so on. An environment like this motivates the students to learn and become more involved in a learning situation that boosts cognitive development.

The results are consistent with Taha Bunyan 2019 and Rasool Thamer 2018, as Zahorik is an effective model which develops deep understanding and reflective thinking through the involvement of the learners in the learning/teaching process itself.

Furthermore, information presentations arranged in the model order stages were a reason for this. This organization helped the students in conceptualizing their ideas to build a concrete framework. Consequently, there can be better transference of information from short-term to long-term memory. Students would be able to retrieve and apply knowledge in new learning situations.

The experimental group was better than the control group in the post-test as the characteristics of traditional teaching method is that it only presents the information raised by the teacher who is not giving sufficient time to the students to think, analyze the problem,

and discuss the problems. By contrast, the Zahorik model provided opportunities for students to express reflective thinking in a planned way with better results.

Based on the above analysis, the Zahorik model is able to improve cognitive achievement and at the same time develop higher order mental processes, especially reflective thinking by activating the role of the learner in the learning process, dialogue and linking to practice.

4.2 Presentation, Analysis, and Discussion of the Results of the Technical Performance Test of the Glide Technique in Shot Put

Table 5. Differences between the pre-test and post-test scores of technical performance in the glide technique in shot put for the control group

No.	Variable	Unit	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	Calculated t-value	Significance Level
1	Technical performance	Score	18.40	2.15	24.60	2.48	6.20	0.000

Degrees of freedom = 9

Tabulated t-value at (0.05) = 2.26

Differences between the pre-tests and post-tests are statistically significant, indicating superior post-tests. The students' performance level has improved as a result of the instructional units' participation. With on-going training, students are able to shift from the thinking stage to the mastery stage of movement. This explains the natural improvement in performance.

Table 6. Differences between the pre-test and post-test scores of technical performance in the glide technique in shot put for the experimental group

No.	Variable	Unit	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	Calculated t-value	Significance Level
1	Technical performance	Score	18.70	2.30	30.20	2.60	11.50	0.000

Degrees of freedom = 9

Tabulated t-value at (0.05) = 2.26

The results show large statistically significant differences between the measures before the test and after the test in favour after test. The technical performance of the glide technique for shot put has improved using the instructional units designed based on the Zahorik model according to this finding.

Table 7. Differences between the control and experimental groups in the post-test of technical performance in shot put

No.	Variable	Control Group Mean	Control Group SD	Experimental Group Mean	Experimental Group SD	Calculated t-value	Significance Level
1	Technical performance	24.60	2.48	30.20	2.60	5.11	0.000

Degrees of freedom = 18

Tabulated t-value at (0.05) = 2.10

The analysis of the post-test technical performance scores of the two groups (see Table 7) indicates that the experimental group is far superior to the control group. The experimental group had a mean score of 30.20, with a standard deviation of 2.60. The control group's mean score is 24.60, with a standard deviation of 2.48.

The calculated value of t-statistics = 5.11 which is greater than the table value at 0.05 level of significance confirming these differences. The findings prove that the Zahorik instructional model is effective in improving the mechanics of technical performance in the glide technique of shot put. Furthermore, it is superior to the traditional style of teaching.

Discussion of the Pre-Test and Post-Test Results for the Experimental Group in the Technical Performance Variable

The research revealed variations in the pre-test and post-test of the experimental group in the variable of reflective thinking, and these variations were in favour of the post-test. Moreover, the experimental group's score in the post-test was clearly better than the control group. The Zahorik instructional model was able to develop the reflective thinking of the students of the College of Physical Education and Sports Sciences.

The researcher argues that the Zahorik model, which is based on self-regulated learning, is superior for this reason. In this approach, a student interacts directly with learning situation and plays an active role in the construction, organization, interpretation and evaluating of knowledge. The phase of activating knowledge connects past experiences to the new information. During the various levels, knowledge acquisition and understanding contributed to organizing knowledge coherently and increasing the depth of comprehension and reflective processes.

The Taha Bunyan Al-Qaisi (2019) research found that Zahorik model must be able to place students in authentic learning where they are enabled to adopt self-directed learning. By adopting this approach, learners can identify when they require assistance and when they can learn independently, thus enhancing their cognitive awareness and reflective capacities. In the same context, Rasool Thamer Ta'ma (2018) indicated that the application of the steps of the Zahorik model contributes to the development of the essential deep understanding and reflective thinking.

This is accomplished when the learners getting involved in a structured dialogue and discussion.

The Zahorik model is based on constructivist theory and that would explain this progress as well. According to constructivism, learning is better achieved when the learner actively constructs the knowledge instead of just receiving it. The vital components of reflective thinking are the high level cognitive processes of analysis and evaluation which are stimulated through interaction, questioning, idea exchanges and continuous feedback. Also, presenting cognitive development information according to the stages of the model helped organise cognitive processing. A transfer organization is a strategy for educational material (text, video, audio, or image) which allows an information process to move from the short term memory to the long term memory (Farida Ibrahim, 1987) which makes it clear, faster and better when the material that is learnt is processed through two or more channels (visual, auditory, etc). So, the information can stay longer in memory.

The present results are in agreement with the findings of Ahmed Mahdi Sharif (2022), who stated that organizing and analyzing information can increase the level of thinking about information and encourage learners to search for answers to the posed questions.

Similarly, Yousef Qatami claimed that organizing knowledge and structuring it will help build deeper and stable thought formation.

The reason for the post-test results of the experimental group being better than the control group was ascribed to the features of traditional teaching which tend to be all-content teaching by the teacher and with less chance to participate in analysis and discussion by the students. The Zahorik model, in contrast, resulted in a learning environment based on dialogue and questioning, stimulating thought and self-evaluation. Such conditions led to the organized and purposeful cultivation of reflective thinking.

Thus, one might conclude that conveying information will not lead to the development of reflective thinking. Learning does not just demand an instructional design that activates the learner's role as a knowledge constructor and analyses, reviews, and evaluates. The Zahorik model has provided an effective environment.

The study outcomes also revealed significant differences in favor of the experimental group regarding reflective thinking as well as the technical performance of the glide technique in shot put. The differences are significant in both the pre-test and post-test comparisons and post-test comparison of both the groups. Given that, there's an integrative relationship between the reflective thinking development and the improvement of skill learning.

The Glide technique in shot put is not only determined by an athlete's ability. In addition, it needs to have an accurate knowledge of the manner in which the technical phases and movement control are sequenced based on conscious knowledge of the performance. Thus, reflective thinking allows students to be able to analyze their performance, pinpoint mistakes, and make their adjustments. The quality of technical execution showed a clear improvement.

The Zahorik model was a learning environment that required active cognitive construction. In this stage of activation information, students worked to connect prior experiences with new performance tasks. The three stages of knowing and using the information lead to deeper motor awareness through discussion, feedback and self-assessment. The information review stage is the metacognitive dimension that allows the students to critically assess their performance which is essential in solidifying their skill acquisition.

The results of Taha Bunyan Al-Qaisi (2019) who stated that the Zahorik model places learners in direct contact with learning situations. Besides that, they make learners have a more active role in the construction of knowledge. Thus, students become aware of an event and able to understand deeply. Likewise, Rasool Thamer Ta'ma (2018) stated that the model enhances analytical understanding and reflective thinking through participation by getting learners involved in the educational situation.

According to the view of constructivism, learning happens better when learners are participating in constructing knowledge than receiving it. The results of this study indicates that growth of reflective thinking does not only take place in the cognitive sphere but also in the motor performance itself. As Yousef Qatami points out, organizing and structuring

knowledge helps in building a deeper pattern of thinking that contributes to a stable learning of skill.

In addition, providing and receiving information through the multiple senses is seen by Farida Ibrahim (1987) as strengthening and accelerating the learning process. Through the use of instructional aids, motion analysis, and classroom discussions integrated into the course of the stages of the Zahorik model.

The control group improved slowly because they only relied on practice and repetition of problems without purposeful cognitive organisation, linking understanding to what they did and used to apply. A mere repetition of experience is not sufficient to bring about substantial improvement in skill. Behaviors must be accompanied by this.

In conclusion, the Zahorik model's application succeeded in achieving integration between the cognitive dimension (reflective thinking) and the motor dimension (technical performance). The advancement of reflective thought significantly contributed to enhancing the quality of learning the glide technique in shot put. The nexus among higher mental processes and skill performance in physical education stands confirmed.

Conclusion

Based on the procedures of the study, the statistical analysis of its results, and their presentation and discussion, the researcher reached the following conclusions.

1. The Zahorik model assisted the students of physical education to develop reflective thinking effectively.
2. By applying the model, the glide technique of the shot put was performed technically better than what traditional practice would deliver.
3. Positive relationship between reflective thinking development and skill learning improvement. Jeffrey et al shows the link.
4. When instructional content is organized according to the stages of the model, it helps achieve deep and stable learning..

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