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The effect of educational exercises using a self-regulated learning strategy on learning the performance phases of the triple jump activity for female students

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Abstract

Studi purpose. This study seeks to explore how educational tasks performed by self-regulated learning strategy can be used to master the stages of the triple jump among physical education students of the female gender. The research is dealing with the performance variability in these technical stages and aims at improving learning efficiency in a quantitative and qualitative way.

Materials and Methods. The experimenters used a sample size of 24 second-stage female students (Section A), half of them experimental (n=12) and half of them control (n=12). The experimental group completed a 6-week program with the use of the self-regulated learning method, which implied two instructional units per week. Evaluation was done according to the stages of the triple jump.

Results. Evaluations at the end of the post-test showed that the technical performance of the triple jump phases of experimental and control groups significantly improved. The evidence indicates that self-regulated policy enabled students to internalize the motor skills enhancing the jump sequences better.

Conclusions. The paper concludes that self-regulated learning based educational exercises have a specific positive impact on learning to triple jump. This plan is more effective than the conventional ones in minimizing the performance variation and hastening the learning of skills among female learners.

Keywords: Educational activities, self-regulated learning strategy, triple jump.

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Introduction

The focus of physical education colleges and departments is on preparing and teaching their students throughout their studies by providing them with information and knowledge about various sports, as well as teaching them the specific skills of these sports and activities. The learning process requires the teacher to be a good role model in demonstrating basic skills when teaching or training them, in addition to using effective strategies and methods that accelerate the learning process both quantitatively and qualitatively. Furthermore, the diversity

of practice in any sport is important because it helps the learner raise their ability and capacity to perform skills in situations they encounter with a high degree of competence and effectiveness. It is known that there are many strategies from which the teacher can choose the most suitable one for the students, provided that this choice is based on scientific principles so that we can achieve the set goals (Müller et al., 2025). One of these strategies is the self-regulated learning strategy, as this approach takes into account the needs and requirements of each learner when designing the educational unit, its materials, and its objectives. The triple jump is an important individual sport characterized by its sequential performance phases with regular motor skills. The significance of this study is that it is a contribution to offering the educational exercises basing on the self-regulated approach of learning (Cleary & Zimmerman, 2004a). This plan entails distribution of the tasks and roles to students in the learning process, and not just being passive receivers of information but an active participant in the knowledge acquisition process in relation to the three-step performance element of the student activity, which ultimately result in optimum performances.

The exercises would be aimed at enabling students to realize their potential. The significance of self-regulated learning strategies and the significance of their role in the educational process. It is well established that academic success and the quality of performance is directly proportional to the preparedness and capability to self-regulate behavior, mental functions, inspiration, and the surroundings in respect to the requirements of the learning scenario. Moreover, the quality of the triple jump is defined by the skills that are obligatory to be carried out to achieve the best results during the chain of technical operations (Alshawi & Salih, 2022). The students have to be conversant with the technicalities and level of performance, which they have to master and learn. The researchers through their field experience noticed differences in the phases of the entire motor chain of triple jump that influences performance of students in terms of their best performance. Hence, the researchers were determined to come up with educational exercises that would be based on a self-regulated learning strategy. This strategy not only gives the learners enough and required repetitions but also, a feeling of enjoyment and comfort in the process of attaining their best technical performance in this activity.

This study aims to design educational activities that integrate a self-regulated learning strategy to teach female students the performance stages of the triple jump and to examine the effect of these activities and the strategy on improving their mastery of each phase of performance. The study hypothesizes that implementing educational activities based on the self-regulated learning strategy will produce a positive effect on female students' learning of the triple jump performance stages. The research is limited to second-year female students in the 2024–2025 academic year, conducted from October 27, 2024, to December 18, 2024, and carried out at the Scouts' playground.

Materials and methods

Study participants

The research sample consisted of second-year female students in section (A) at the College of Physical Education and Sports Sciences for Girls, University of Baghdad, for the academic year 2024-2025. The sample comprised (24) students and was divided into two groups: an experimental group (12) students and a control group (12) students, using a lottery system.

Sample Homogeneity:

Table 1. Homogeneity of the Research Sample

Variables	Units	Mean	Median	Std	Skewness*
Height	**Meter**	158.131	158.000	0.321	0.536
Weight	**Kilogram**	56.267	56.000	0.357	0.189
Age	**Year**	20.231	20.000	0.691	0.431

*The value of the skewness coefficient is within ±1, indicating a normal population distribution.

Equivalence:

Table 2. shows the equivalence of the sample in the research variables

Variables	Units	Experimental group		Control group		Calculated value of (t)	Error level	Statistical significance*
		Mean	Std	Mean	Std			
The trot	**degree**	5.611	0.744	5.152	0.892	0.729	0.065	**Non-Sig.**
The hop	**degree**	6.221	2.912	5.155	1.453	1.865	0.334	**Non-Sig.**
The step	**degree**	4.529	3.498	4.021	0.126	0.193	0.169	**Non-Sig.**
The leap	**degree**	4.571	0.922	4.018	0.865	0.539	0.455	**Non-Sig.**

*Significant under a significance level ≤ 0.05 and under 22 degrees of freedom.

Study organization

Indicate methods and the purpose of their use; research procedures and an algorithm for conducting a pedagogical experiment.

1. **Research Methodology**

   The researchers used the experimental method with a two-group equivalent design (experimental and control) as it was suitable for the nature of the problem.

2. **Methods and tools used for data collection:**

   - Arabic and foreign sources and references.
   - The internet.
   - Observation.
   - Tests and measurement.
   - Triple jump pit.
   - (5) weight scales.
   - (4) measuring tapes.
   - Dell portable electronic calculator.
   - Japanese-made Casio stopwatches.
   - whistles.

3. **Performance Evaluation of the Triple Jump**

   The researchers prepared a form to evaluate the technical performance level according to expert opinion, specifying the score for each phase of the triple jump movement, as shown. This was done to determine the score for each phase of the complete movement sequence of the event, with each phase scoring out of (10) points. The research sample was then videotaped for the purpose of showing the footage to the evaluators.

4. **Pilot Study**

   On October 27, 2024, the researchers conducted a pilot study with four female students from the research sample. The purpose of the pilot study was as follows (Cleary & Zimmerman, 2004b):

1-To determine the time required to administer the tests.

2-To confirm the suitability of the tests for the sample group and the appropriate sequence of the tests.

3- To discover challenges and barriers that have arisen in the process.

4- To ensure that the test is scientifically valid.

Field Research Procedures

5. **Pre-tests:**

The researchers had a technical performance test on October 31, 2024, on the triple jump phases.

6. **Curriculum Design:**

The training exercises would start on November 1, 2024, and end on December 15, 2024.

The training activities were carried out in six weeks, one unit in a week, and a total of twelve units of training. Each unit of training was to last 120 minutes. The preparatory section was split into two sections, which included a 25 minutes preparatory section, a main section of 90 minutes and a concluding section of 5 minutes. The processes of self-managed learning plan are based on socialization. In the instructional component, the students repeat the content through reading the video assignment on the activity sent to them earlier (Yahya et al., 2024). They then go further by writing some information regarding the activity and hand it over to the teacher. The practical component is based on the self-monitoring that consists of applying the exercises. Educational process implies the feedback of the instructor, observation of the next stage of the strategy implementation (Feletti & Ryan, 1994). These involve self-rewarding in terms of encouragement, motivation as well as engagement. The last step, which is also used in the final part, is a self-dialogue regarding the performance, performance review, and ascertaining what had been learned in the core part (Chamov, 2018).

7. **Post-Tests:**

The researchers conducted the post-tests under the same conditions as the pre-tests, on December 18, 2024, in the athletics classroom at the College of Physical Education and Sports Sciences for Girls, University of Baghdad.

Statistical analysis

The researchers used the Statistical Package for Social Sciences (SPSS).

Results

The study results should be presented in tables and described in a logical sequence.

- **Presentation and Analysis of the Differences Between the Pre-Test and Post-Test for the Control Group**

Table 3. This section presents the results of the differences between the pre-test and post-test for the control group

Variables	Pre-test		Post-test		Std diff.	Calculated value of (t)*	Error level	Statistical significance
	Mean	Std	Mean	Std				
The trot	4.553	0.553	6.383	0.772	0.664	4.997	0.001	**Sig.**
The hop	5.155	0.895	6.562	0.734	1.134	3.984	0.002	**Sig.**

The step	4.476	1.098	5.034	2.175	1.525	6.503	0.002	**Sig.**
The leap	4.018	0.871	4.596	1.191	1.056	2.822	0.003	**Sig.**

*Significant under a significance level ≤ 0.05 and under degrees of freedom 11

- **Presentation and Analysis of the Differences Between the Pre-Test and Post-Test Results for the Experimental Group**

Table 4. Shows the differences between the pre-test and post-test results for the experimental group

Variables	Pre-test		Post-test		Std diff.	Calculated value of (t)*	Error level	Statistical significance
	Mean	Std	Mean	Std				
The trot	5.611	2.861	6.632	1.932	1.233	3.988	0.001	**Sig.**
The hop	6.221	3.826	7.511	1.172	3.578	2.657	0.001	**Sig.**
The step	4.529	1.722	5.388	1.735	4.431	4.453	0.000	**Sig.**
The leap	4.571	1.544	5.679	1.854	6.291	3.871	0.004	**Sig.**

*Significant at a level ≤ 0.05 and with 11 degrees of freedom

- **Presentation and Analysis of the Differences Between the Experimental and Control Groups in the Post-Test:**

Table 5. shows the results of the differences between the experimental and control groups in the post-test

Variables	Experimental group		Control group		Calculated value of (t)*	Error level	Statistical significance
	Mean	Std	Mean	Std			
The trot	7.349	1.833	6.384	2.051	1.569	0.000	**Sig.**
The hop	8.010	0.912	7.474	0.623	3.010	0.002	**Sig.**
The step	6.778	1.056	5.623	0.924	3.621	0.004	**Sig.**
The leap	6.548	2.749	5.591	3.652	2.933	0.001	**Sig.**

*Significant under a significance level ≤ 0.05 and under 22 degrees of freedom

Discussion

Briefly present the core results of the research, then discuss based on relevant studies, to position the research results in the latest research scene / last 10 years), the citations used must be related to the research results. show the position of the research results in the face of previous research.

Table 5 shows that there are statistically significant differences between the experimental and control groups in the post-test in the complete motor sequence of the triple jump. The researchers attribute the positive effect of self-organized instructional exercises on the students' learning of the triple jump performance phases to the fact that the exercises were based on sound scientific principles (Ameti et al., 2022), taking into account the individual differences of the research sample and the actual time spent on exercises within the training unit. A successful teacher (Abdullah & Kat'aa, 2025) knows the objectives that can be achieved by giving each type of exercise and is fully aware of the time allotted for each exercise in the daily training unit and its duration.

The results of the study (Muis, 2007) indicate that "performance development depends on muscle strengthening and the athlete's ability to execute a suitable motor path. In addition, organized learning and skill performance using simple instructional exercises are followed by a gradual increase in the speed and power of the movement (Wang et al., 2024)." The triple jump leads to the acquisition, mastery, and development of new learning skills. The primary goal of learning the phases of the triple jump is to acquire a set of skills that can be used with high precision and in various ways (Winne & Perry, 2000). This is achieved through the use of

a self-regulated learning approach (Kolovelonis et al., 2012). The self-regulated learning strategy contributes to acquiring the technical aspect with complete accuracy. Furthermore, the development of students' technical performance is facilitated by providing opportunities to increase the number of repetitions, as well as offering feedback to address errors during performance (Artino Jr & Jones II, 2012). Similarly, in a study by (Rizki et al., 2022), significant differences were found between the experimental and control groups in the post-test (Tay, 2015). The educational exercises were used according to a strategy in the triple jump, which helped develop technical performance and achievement (Huang et al., 2024). The learning, understanding, and comprehension of the students' motor performance, which in turn supports the current study in terms of the results regarding differences, as well as the prepared educational exercises, where the group used a self-regulated learning strategy, effectively utilized individual differences (Azevedo & Cromley, 2004). These differences became a contributing factor to learning through the teacher's monitoring and observation of the students' performance (Cheng et al., 2024). The frequent observation and recording of performance levels, in order to evaluate performance levels, contributed to a new learning dynamic (Wiemeyer, 2007). Furthermore, the organization of the exercises, which followed a sound scientific and applied framework, and the teacher's explanation and application of the exercises as an ideal performance model (Khoiriyah & Roberts, 2025), provided a clear picture of the correct motor path from the beginning to the end of each stage. This also led to an understanding and comprehension of performance requirements and knowledge of the relationship between the parts of the movement (Abd & Muhammad, 2024). The organization of the exercises, which followed a scientific and applied approach, and the teacher's explanation and application of the exercises as an ideal performance model, further supported this (Azevedo et al., 2004).

Conclusions

The outcomes of the research revealed that the application of educational exercises through self-regulated learning strategy had a concrete positive effect on the learning of the technical side of the triple jump among the students. This was shown by the obvious advantage of the experimental group who adopted this strategy compared to the inhibitory group who adhered to the conventional approach. It means that the provision of an active role of the learners in monitoring and evaluation of their performance increases faster the mastering of complex motor skills.

The researchers attribute this enhancement to the fact that the self-managed learning plan took into account the individual differences in the students and used the available time allocated to the learning units in the best way. Moreover, the presentation of pre-learning activities (watching videos and making notes) supported the cognitive knowledge in students prior to the practice, which formed the atmosphere of learning, which was pleasurable, relaxed, and allowed to make mistakes and improve them via constant feedback.

The paper advises the use of the self-managed learning approach at physical education academic institutions, particularly considering imparting athletic-related activities, which involve accurate motor patterns, e.g., triple jump. Enabling the application of assistive tools and the use of modern technologies (video recording and analysis) to facilitate the student in the process of self-dialogue and performance review, hence the persistence of learning and the quality of education results.

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Conflict of interest

"The authors declare that there is no conflict of interest.

References

Abd, H., & Muhammad, Z. (2024). The Effect of the Self-Regulated Method on Learning the High Dribbling (Fast) Skill Basketball for First-Year Intermediate Students. *International Journal of Disabilities Sports and Health Sciences*, *7*(Special Issue 2): The Second International Scientific Conference: Sports for Health and Sustainable Development, (SHSD, 2024)), 314–322. https://doi.org/10.33438/ijdshs.1425806

Abdullah, W. S., & Kat'aa, A. J. (2025). The Effect of Instructional Exercises Using Auxiliary Aids on Learning the Technical Execution of the Triple Jump for Female Students. *Modern Sport*, *24*(1), 46–53. https://doi.org/10.54702/2708-3454.1006

Alshawi, H. N. H., & Salih, Z. M. M. (2022). The effect of special exercises using (Dynafoot3) to develop the step and achievement in the triple jump for students of the college of physical education and sports sciences. *International Journal of Health Sciences*, *6*(S6), 6086–6093 https://doi.org/10.53730/ijhs.v6nS6.11181

Ameti, V., Iseni, A., & Memishi, S. (2022). The effect of the plyometric program in the long jump and triple jump at students. *International Journal of Sport Sciences and Health*, *9*(17–18), 222–228. https://eprints.unite.edu.mk/1001/

Artino Jr, A. R., & Jones II, K. D. (2012). Exploring the complex relations between achievement emotions and self-regulated learning behaviors in online learning. *The Internet and Higher Education*, *15*(3), 170–175. https://doi.org/10.1016/j.iheduc.2012.01.006

Azevedo, R., & Cromley, J. G. (2004). Does training on self-regulated learning facilitate students' learning with hypermedia? *Journal of Educational Psychology*, *96*(3), 523 https://doi.org/10.1016/j.iheduc.2012.01.003

Azevedo, R., Guthrie, J. T., & Seibert, D. (2004). The role of self-regulated learning in fostering students' conceptual understanding of complex systems with hypermedia. *Journal of Educational Computing Research*, *30*(1–2), 87–111. https://doi.org/10.2190/DVWX-GM1T-6THQ-5WC7

Chamov, I. (2018). *Triple Jumpers: The Different Characteristics of Male and Female Jumpers*. Techniques.

Cheng, G., Zou, D., Xie, H., & Wang, F. L. (2024). Exploring differences in self-regulated learning strategy use between high-and low-performing students in introductory programming: An analysis of eye-tracking and retrospective think-aloud data from program comprehension. *Computers & Education*, *208*, 104948 https://doi.org/10.1016/j.compedu.2023.104948

Cleary, T. J., & Zimmerman, B. J. (2004a). Self-regulation empowerment program: A school-based program to enhance self-regulated and self-motivated cycles of student learning. *Psychology in the Schools*, *41*(5), 537–550 https://doi.org/10.1002/pits.10177

Cleary, T. J., & Zimmerman, B. J. (2004b). Self-regulation empowerment program: A school-based program to enhance self-regulated and self-motivated cycles of student learning. *Psychology in the Schools*, *41*(5), 537–550 https://doi.org/10.1002/pits.10177

Feletti, G., & Ryan, G. (1994). The triple jump exercise in inquiry-based learning: A case study showing directions for further research. *Assessment & Evaluation in Higher Education*, *19*(3), 225–234 https://doi.org/10.1080/0260293940190306

Huang, J., Cai, Y., Lv, Z., Huang, Y., & Zheng, X.-L. (2024). Toward self-regulated learning: effects of different types of data-driven feedback on pupils' mathematics word problem-solving performance. *Frontiers in Psychology*, *15*, 1356852 https://doi.org/10.3389/fpsyg.2024.1356852

Khoiriyah, U., & Roberts, C. (2025). Investigating the role of self-assessment in enhancing self-regulated learning amongst medical students in problem-based learning. *BMC Medical Education*, *25*(1), 780. https://doi.org/10.1186/s12909-025-07359-5

Kolovelonis, A., Goudas, M., & Dermitzaki, I. (2012). The effects of self-talk and goal setting on self-regulation of learning a new motor skill in physical education. *International Journal of Sport and Exercise Psychology*, *10*(3), 221–235. https://doi.org/10.1080/1612197X.2012.671592

Muis, K. R. (2007). The role of epistemic beliefs in self-regulated learning. *Educational Psychologist*, *42*(3), 173–190 https://doi.org/10.1080/00461520701416306

Müller, M., Drašinac, G., & Jakšić, D. (2025). The impact of coordinative abilities on the development of self-regulated Learning. *Journal of Physical Education & Sport*, *25*(1) https://doi.org/10.7752/jpes.2025.01018

Rizki, P. N. M., Handoko, I., Purnama, P., & Rustam, D. (2022). Promoting self-regulated learning for students in underdeveloped areas: The case of Indonesia Nationwide Online-Learning Program. *Sustainability*, *14*(7), 4075 https://doi.org/10.3390/su14074075

Tay, H. Y. (2015). Setting formative assessments in real-world contexts to facilitate self-regulated learning. *Educational Research for Policy and Practice*, *14*(2), 169–187. https://doi.org/10.1007/s10671-015-9172-5

Wang, T., Ruiz-Segura, A., Li, S., & Lajoie, S. P. (2024). The relationship between students' self-regulated learning behaviours and problem-solving efficiency in technology-rich learning environments. *Journal of Computer Assisted Learning*, *40*(6), 2886–2900 https://doi.org/10.1111/jcal.13054

Wiemeyer, J. (2007). Self-Regulated Multimedia Learning of Biomechanical Principles In Sport Science. *On Computer Science in Sport June 3–June 6, 2007 Calgary, Alberta, Canada*, 186. https://www.researchgate.net/profile/Larry-Katz-2/publication/373576814_Proceedings_of_IACSS2007/links/64f1e253fa851147de08d2b4/Proceedings-of-IACSS2007.pdf#page=195

Winne, P. H., & Perry, N. E. (2000). Measuring self-regulated learning. In *Handbook of self-regulation* (pp. 531–566). Elsevier https://doi.org/10.1016/B978-012109890-2/50045-7

Yahya, D. G., Jaleel, A., & Kalaf, H. W. (2024). The effect of educational exercises according to the mind mapping strategy on the artistic performance of the triple jump event for students. *Modern Sport*, *23*(5), 82–90. https://doi.org/10.54702/fg9mnk20

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