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Learning strategies to improve study habits in seventh-grade athletes

[Estrategias de aprendizaje para mejorar los hábitos de estudios en deportistas de séptimo grado]

[Estratégias de aprendizagem para melhorar hábitos de estudo em atletas do sétimo ano]

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ABSTRACT

Introduction: Learning strategies are used to improve study habits with a set of techniques, methods or approaches designed to optimize the way in which a person organizes, processes and retains information, so in the case of student athletes, specific strategies are required according to their needs and possibilities.

Aim: Select the most effective learning strategies to improve study habits in seventh-grade student athletes.

Methods: applied research, which studies 100 7th level athletes classified in two independent samples, assessing several study patterns directly related to learning strategies to improve study habits, for this purpose the survey and questionnaire were used, which includes 55 elements, in relation to the dimensions and indicators that have been taken into account throughout the process.

Results: In both groups, the highest scores on the subject were found to be "unsatisfactory" (pretest); in the control group, 32% were found; and in the experimental group, 40%. The second range was known as "minimally satisfactory" (Control: 28%; Experimental: 24%). The posttest results indicate that the experimental group has improved significantly. Currently, 48% of the students who participated in the experience were found to be "satisfactory"; 40% were found to be "moderately satisfactory"; and the remaining 12% were found to be "minimally satisfactory."

Conclusions: The implemented strategy shows notable improvements, being effective in improving the study habits of athletes.

Keywords: learning strategy; study habits; athletes

RESUMEN

Introducción: las estrategias de aprendizajes se utilizan para mejorar los hábitos de estudio con un conjunto de técnicas, métodos o enfoques diseñados para optimizar la manera en que una persona organiza, procesa y retiene la información, por lo que en el caso de los estudiantes deportistas se requieren estrategias específicas acordes a sus necesidades y posibilidades.

Objetivo: seleccionar las estrategias de aprendizaje más eficaces para mejorar los hábitos de estudio en estudiantes deportistas de séptimo grado.

Métodos: investigación aplicada, que estudia a 100 deportistas de 7.º nivel clasificados en dos muestras independientes, valorando varios patrones de estudio relacionado directamente con estrategias de aprendizaje para mejorar hábitos de estudio, para ello se utilizó la encuesta y el cuestionario, que incluye 55 elementos, en relación con las dimensiones e indicadores que se han tenido en cuenta en todo el proceso.

Resultados: en ambos grupos se resalta que las calificaciones más altas en el tema se sitúan en el nivel "insatisfactorio" (pretest); en el grupo control se registra un 32%; y en el grupo experimental se reporta un 40%. El segundo intervalo se conoce como: "mínimamente satisfactorio" (Control: 28%; Experimental: 24%). Los resultados del postest indican que el grupo experimental han mejorado significativamente. Actualmente, se conoce que el 48% de los alumnos que participaron en la experiencia se ubican en el intervalo "satisfactorio"; un 40% se sitúa en el intervalo "medianamente satisfactorio"; y el 12% restante se encuentra en el intervalo "mínimamente satisfactorio".

Conclusiones: la estrategia implementada evidencia mejoras notables, siendo efectiva para mejorar los hábitos de estudio de deportistas.

Palabras clave: estrategia de aprendizaje; hábitos de estudios; deportistas

RESUMO

Introdução: Estratégias de aprendizagem são utilizadas para aprimorar hábitos de estudo por meio de um conjunto de técnicas, métodos ou abordagens desenvolvidas para otimizar a maneira como uma pessoa organiza, processa e retém informações. Portanto, no caso de estudantes atletas, são necessárias estratégias específicas, adaptadas às suas necessidades e capacidades.

Objetivo: Selecionar as estratégias de aprendizagem mais eficazes para aprimorar hábitos de estudo em estudantes atletas do sétimo ano.

Métodos: Pesquisa aplicada, que estudou 100 atletas do sétimo ano, classificados em duas amostras independentes, avaliando diversos padrões de estudo diretamente relacionados a estratégias de aprendizagem para aprimorar hábitos de estudo. Utilizaram-se um questionário e um survey, que incluiu 55 itens, em relação às dimensões e indicadores considerados ao longo do processo.

Resultados: Em ambos os grupos, as maiores pontuações na disciplina foram no nível "insatisfatório" (Pré-teste); 32% foram registradas no grupo controle; e 40% no grupo experimental. A segunda faixa é conhecida como "minimamente satisfatória" (Controle: 28%; Experimental: 24%). Os resultados do pós-teste indicam que o grupo experimental

apresentou melhora significativa. Atualmente, 48% dos alunos que participaram do experimento se enquadraram na faixa "satisfatória"; 40% se enquadraram na faixa "moderadamente satisfatória"; e os 12% restantes se enquadraram na faixa "minimamente satisfatória".

Conclusões: A estratégia implementada apresentou melhorias significativas, sendo eficaz na melhoria dos hábitos de estudo dos atletas.

Palavras-chave: estratégia de aprendizagem; hábitos de estudo; atletas

INTRODUCTION

Balancing academic performance with sports practice is a constant challenge for student athletes at all levels. Between the ages of 12 and 13, young people experience physical, emotional, and cognitive changes that can influence their physical/academic performance and their commitment to sports activities. (Navarrete *et al.*, 2024; Calero-Morales *et al.*, 2024). However, by developing effective learning strategies, it is possible to improve study habits and ensure that students achieve adequate performance in both areas (Asqui Luna *et al.*, 2017; Mendoza *et al.*, 2024; Cárdenas *et al.*, 2016).

Nowadays, education faces a dynamic context in which motivation and organization play a crucial role in academic success (Rodríguez Torres *et al.*, 2017; Mahdavi Student athletes often face a demanding schedule that combines training, competitions, and classes, which can lead to difficulties managing their time efficiently. (Mendoza *et al.*, 2024) Additionally, physical fatigue and stress can affect their concentration and retention capacity, negatively impacting their academic performance (Charest & Grandner, 2022; Dambroz *et al.*, 2022) This is why it is essential to design and implement learning strategies that promote discipline, planning and time management effectively (Calero *et al.*, 2019; Torres *et al.*, 2017).

Learning strategies have proven to be key tools for optimizing academic performance, as they allow students to develop cognitive, metacognitive, and organizational skills. These include techniques such as study planning, the use of concept maps, self-assessment, and the implementation of structured study habits (García *et al.*, 2021; Morales *et al.*, 2023).

By adapting these strategies to the specific needs of athletes, both their academic development and their athletic performance can be enhanced, thus **promoting** autonomous and meaningful learning (Mendoza *et al.*, 2024).

The study of this topic gains relevance in the current educational context, where more and more institutions promote the integration of sports as a fundamental part of students' comprehensive development (Bernate & Fonseca, 2022). However, it is essential to ensure that this practice does not interfere with academic performance, but rather complements it. Previous research has indicated that sports practice can enhance cognitive skills such as concentration, discipline, and resilience (Flores *et al.*, 2018; McManama O'Brien *et al.*, 2021), suggesting that adequate learning planning could maximize the benefits in both the academic and sports settings.

Furthermore, the influence of external factors such as family support, the role of teachers and coaches, and the use of educational technologies also impact the development of effective study habits. (Sáenz *et al.*, 2018) Therefore, this study will not only focus on individual strategies that students can apply, but also on the importance of generating a favorable learning environment that fosters the development of their academic and athletic abilities, which must be managed based on individualized pedagogical analysis (Morán-Pedroso *et al.*, 2024)

The theoretical foundations related to learning and the acquisition of study habits depend on various factors or key elements (Fernández Lorenzo *et al.*, 2018; Lorenzo *et al.*, 2015), as well as specific strategies that have proven effective in students who combine their education with sports training or specialized physical activity (Morales *et*

al., 2023). In addition, intervention proposals will be presented, and the importance of pedagogical support to optimize results will be highlighted.

Improving the study habits of seventh-grade athletes is a challenge that requires the application of innovative teaching strategies adapted to their specific needs. New technologies can be extremely useful, although not without limitations (Uribarri *et al.*, 2024; Rojo-Ramos *et al.*, 2024). Education should focus on providing tools that allow them to develop self-management, planning, and concentration skills, thus ensuring a balance between academic success and athletic performance.

Through this research, we hope to contribute to the design of methodologies that foster the comprehensive education of these students and, in this way, **promote** their well-being and excellence in both areas. In this regard, the purpose of the research is to analyze the most effective learning strategies to improve study habits in seventh-grade student athletes. Techniques that promote concentration, memory, and time management were analyzed, with the goal of providing practical tools that allow them to balance their academic and athletic responsibilities.

MATERIALS AND METHODS

This research is classified as applied because it seeks to solve a practical problem and improve the conditions identified in the research diagnosis. To this end, the entire procedure is thoroughly examined. The variables involved in the development of this study are learning strategies and the learning process.

Participants and procedures

The population of this study refers to a group of student athletes from various disciplines at a school, with 100 students enrolled in seventh grade. To this end, four parallel classrooms were established, with a total of 25 students per section.

The requirements for working with students involved in the educational intervention are that they be enrolled in the aforementioned seventh grade; that they maintain consistent attendance; and that they must also provide informed consent, which communicates the purpose of the research. Exclusion criteria are established to ensure that students maintain consistent attendance throughout the intervention; they also offer the opportunity to communicate that if they do not wish to continue with the experience, they may request exclusion.

To classify the sample, a control group and an experimental group were chosen from the four sections corresponding to the students enrolled in the seventh year. The sample is divided among the four sections, corresponding to twenty-five students per class; the distinction lies in the distribution of the letters: "A"; "B"; "C" and "D"; this categorization is provided by the institution, and the researcher has chosen classes "C" as the control group and classes "D" as the experimental group.

Tools

The measurement scale for both variables is provided by an ordinal scale; this same scale is based on the Lickert grading proposal, taking into account five grading criteria, from which the final weighting of the submitted questionnaires will be determined; the interpretation of which is found in the section detailing the study techniques.

The research techniques are provided by the survey and its operational component, the questionnaire, which includes 55 items related to the dimensions and indicators considered in the process of operationalizing the variables; this instrument requires a period of 340 minutes to complete.

A pilot test was conducted on the instrument to determine the reliability factor of the instruments used. For the study habits questionnaire, a score of 0.825 points was achieved on Cronbach's alpha. Regarding the second instrument, which refers to the learning strategies questionnaire, the value, which aligns with the Cronbach's alpha

from the pilot test, indicates a value of 0.812 points. Both scores demonstrate a high level of reliability in the measurement of the variables addressed.

Data analysis

Kolmogorov-Smirnov test was applied to determine the normality of the data, which shows a normal distribution. The Pearson test was applied to determine a statistical relationship between two continuous variables, using SPSSv26, and a pivot table designed in Microsoft Excel 2021 for data tabulation.

RESULTS AND DISCUSSION

Identifying the study habits (pre-test) of seventh-grade student athletes at an educational unit in Guayaquil constitutes the first step of the research, whose methodological elements are described below.

An analysis of the study patterns (Table 1) was conducted using the questionnaire, which shows the evaluations of the two groups: control and experimental, considering the four corresponding levels of interpretation. As can be seen in Table 1, the initial results show a notable similarity; it is notable that the highest ratings on the topic are at the "unsatisfactory" level; 32% for the control group and 40% for the experimental group. The second most notable interval is "minimally satisfactory." 28% in the control group and 24% in the experimental group report this type of satisfaction (Table 1).

Table 1. - General result of the questionnaire, study habits, dimension, habits to know how you study, and dimension, habits to know how you do your homework: pretest

Study habits questionnaire				
LEVELS	CONTROL GROUP		EXPERIMENTAL GROUP	
	F	%	F	%
Satisfying	4	16%	4	16%

Moderately satisfying	6	24%	5	20%
Minimally satisfying	7	28%	6	24%
Unsatisfactory	8	32%	10	40%
TOTAL	25	100%	25	100%
Habits dimension to know how you study				
LEVELS	CONTROL GROUP		EXPERIMENTAL GROUP	
	F	%	F	%
Satisfying	5	20%	6	24%
Moderately satisfying	5	20%	4	16%
Minimally satisfying	7	28%	8	32%
Unsatisfactory	8	32%	7	28%
TOTAL	25	100%	25	100%
Habits dimension to know how you do your tasks				
LEVELS	CONTROL GROUP		EXPERIMENTAL GROUP	
	F	%	F	%
Satisfying	6	24%	5	20%
Moderately satisfying	5	20%	5	20%
Minimally satisfying	7	28%	8	32%
Unsatisfactory	7	28%	7	28%
TOTAL	25	100%	25	100%

Likewise, each of the dimensions comprising the variable was assessed; the first, called "habits for understanding how students study," also involves assessing the same ranges. The behavior of the values is quite similar, but it emphasizes that both groups lack specific knowledge of how they carry out their tasks, as it is essential to plan their tasks. It is essential for students to have a reading and discussion environment to enhance their critical analysis and reasoning skills; the findings for this dimension are reflected in Table 1.

The second dimension, called "homework habits," suggests that students should organize their time more accurately, as well as read and understand what they read. It is essential to more thoroughly organize their academic tasks; complete assignments

despite their complexity; and thus perform activities that require greater management of complexity. The implementation of an intervention will contribute to improving the conditions exhibited by seventh-grade students; the findings are described in Table 1.

The next dimension is provided by "exam preparation habits." Most students do not display clear strategies that promote meaningful learning; in other words, they mostly study to seize the moment, having to manage their time to study consistently and complete scheduled assignments. The results are concentrated in both groups within the "minimally satisfactory" and "unsatisfactory" rating ranges (Table 2).

Table 2. - Result of the dimension, habits to know how you prepare to take exams, Habits to know how you listen to your classes, and Habits to know what accompanies your study moments: pretest

Habits to know how to prepare for exams				
LEVELS	CONTROL GROUP		EXPERIMENTAL GROUP	
	F	%	F	%
Satisfying	5	20%	4	16%
Moderately satisfying	5	20%	6	24%
Minimally satisfying	7	28%	7	28%
Unsatisfactory	8	32%	8	32%
TOTAL	25	100%	25	100%
Habits to know how you listen to your classes				
LEVELS	CONTROL GROUP		EXPERIMENTAL GROUP	
	F	%	F	%
Satisfying	6	24%	6	24%
Moderately satisfying	5	20%	6	24%
Minimally satisfying	7	28%	7	28%
Unsatisfactory	7	28%	6	24%
TOTAL	25	100%	25	100%
Habits to know that accompany your study moments				
LEVELS	CONTROL GROUP		EXPERIMENTAL GROUP	
	F	%	F	%

Satisfying	5	20%	5	20%
Moderately satisfying	5	20%	5	20%
Minimally satisfying	7	28%	7	28%
Unsatisfactory	8	32%	8	32%
TOTAL	25	100%	25	100%

The fourth dimension encompasses the so-called "habits of listening to lectures." This includes common behavior in lectures, manifesting as: failure to write down key ideas; explanation of terms or words not understood; distractions in lectures; and the need to prioritize developing and analyzing thoughts and ideas, as illustrated in Table 2.

The fifth dimension addresses the development of: "Habits to know that accompany your study time." This also involves habitual behavior to define actions such as study time; avoiding distractions such as television, music, and other circumstances; staying focused on the teaching-learning process; maintaining a healthy diet; completing pressing tasks; and refraining from excessive use of social media (Table 2).

Measuring the study habits (post-test) of seventh-grade students at an educational unit in Guayaquil constitutes the second step of the research, whose methodological elements are described below.

Following the implementation of the intervention program, an evaluation was conducted using Vicuña's (2005) study habits questionnaire. The findings indicate that, unlike the control group, the experimental group has made significant progress. This is due to changes in the interval grades. Currently, 48% of the students who participated in the program fall within the "satisfactory" range; 40% fall within the "moderately satisfactory" range; and the remaining 12% fall within the "minimally satisfactory" range. In conclusion, the comparative values reveal significant variation within the experimental group. This variation is also compared with the results of the first measurement in the well-known pretest, as illustrated in Table 3.

Likewise, a new assessment was conducted for each dimension of the variable; the first is "habits for understanding how students study." Seventh-grade students in the experimental group showed a new distribution of scores. Thus, 48% were in the "satisfactory" range; 48% were in the "moderately satisfied" range; and the remaining 4% were in the "minimally satisfactory" range. This situation demonstrates that, through the development of the intervention, overall study patterns have been strengthened.

The next dimension, "habits for understanding how to perform tasks," also reveals significant variations in the experimental group; 44% of students gave a "satisfactory" rating; another 44% were in the "moderately satisfactory" range; and the remaining 12% were in the "minimally satisfactory" range (Table 3).

Table 3. - General result of the questionnaire, study habits, habits dimension to know how you study, and habits dimension to know how you do your homework: pretest

Study habits questionnaire				
LEVELS	CONTROL GROUP		EXPERIMENTAL GROUP	
	F	%	F	%
Satisfying	5	20%	12	48%
Moderately satisfying	5	20%	10	40%
Minimally satisfying	7	28%	3	12%
Unsatisfactory	8	32%	0	0%
TOTAL	25	100%	25	100%
Habits dimension to know how you study				
LEVELS	CONTROL GROUP		EXPERIMENTAL GROUP	
	F	%	F	%
Satisfying	6	24%	12	48%
Moderately satisfying	5	20%	12	48%
Minimally satisfying	8	32%	1	4%
Unsatisfactory	6	24%	0	0%
TOTAL	25	100%	25	100%
Habits dimension to know how you do your tasks				
LEVELS	CONTROL GROUP		EXPERIMENTAL GROUP	
	F	%	F	%
Satisfying	6	24%	11	44%
Moderately satisfying	5	20%	11	44%
Minimally satisfying	8	32%	3	12%

Unsatisfactory	6	24%	0	0%
TOTAL	25	100%	25	100%

The "test preparation habits" dimension (Table 4) also shows considerable progress among students in the experimental group; 48% obtained "satisfactory" post-test scores; 40% were "fairly satisfactory," and the remaining 12% were "minimally satisfactory." This situation corroborates that the educational intervention has created opportunities for improvement among students; these are evident in greater control over overall study patterns.

Table 4. - Result of the dimension, habits to know how you prepare to take exams, Habits to know how you listen to your classes, and Habits to know what accompanies your study moments: post-test.

Habits to know how to prepare for exams				
LEVELS	CONTROL GROUP		EXPERIMENTAL GROUP	
	F	%	F	%
Satisfying	5	20%	12	48%
Moderately satisfying	6	24%	10	40%
Minimally satisfying	6	24%	3	12%
Unsatisfactory	8	32%	0	0%
TOTAL	25	100%	25	100%
Habits to know how you listen to your classes				
LEVELS	CONTROL GROUP		EXPERIMENTAL GROUP	
	F	%	F	%
Satisfying	6	24%	13	52%
Moderately satisfying	6	24%	11	44%
Minimally satisfying	6	24%	1	4%
Unsatisfactory	7	28%	0	0%
TOTAL	25	100%	25	100%
Habits to know that accompany your study moments				
LEVELS	CONTROL GROUP		EXPERIMENTAL GROUP	
	F	%	F	%
Satisfying	5	20%	13	52%

Moderately satisfying	6	24%	12	48%
Minimally satisfying	6	24%	0	0%
Unsatisfactory	8	32%	0	0%
TOTAL	25	100%	25	100%

The next dimension, "Habits for understanding how students listen to their classes," like the other dimensions, shows notables progress; this is reflected again in the post-test results of the experimental group. Currently, 52% of students are rated "satisfactory," 44% are rated "moderately satisfactory," and the remaining 4% are rated "minimally satisfactory," as evidenced in Table 4. The implementation of the workshops has helped students improve their learning and study methods; this implies the adoption of strategies with greater results for strengthening their cognitive skills.

Finally, in the "Habits to know that accompany their study time" dimension (Table 4), it was observed that the variations are evident compared to the experimental group, which modified its score, focusing more on the "satisfied" rating at 52%, followed by the "moderately satisfied" rating at 48%; in contrast to the control group, which did not undergo intervention and its scores remained unchanged.

The verifiability of the hypotheses is based on the analysis of the normality test performed through the application of parametric statistics, which is conditioned by the Pearson correlation test (Table 5). This is because it refers to a linear measurement between the same quantitative variable, the measurement of which is constant throughout the development of the intervention strategy. The findings are presented in Table 5. The correlation between the first and second editions of the pre- and post-questionnaire on study habits registered a value of 0.794 points; this value indicates a positive, direct, and significant correlation between both measurements.

Similarly, this value is characterized by a high positive correlation, thus demonstrating the formulation of the hypothesis: the implementation of a program of effective strategies related to study patterns will effectively enhance the learning of seventh-grade athletes in an educational institution (Table 5).

Table 5. - Pearson hypothesis test

Pearson		Pre-test study habits	Post-test study habits
Pre-test study habits	Correlation coefficient	1,000	0.784
	Sig. (bilateral)		0.000
	Number	25	25
Post-test study habits	Correlation coefficient	0.784	1,000
	Sig. (bilateral)	0.000	
	Number	25	25

According to the results obtained from the use of instruments that assess the study patterns of the athletic students participating in the intervention program in the experimental group, it can be deduced that, after implementing the hypothesis test, the experience has produced a very positive change in the students. This is statistically evidenced by the Pearson correlation coefficient, which reaches 0.784 points.

The aforementioned state determined a correlation between study patterns and academic performance at an educational institution, working with second-year high school students.

On the other hand, Cárdenas *et al.* (2016) evaluated the effects of the sport practice of Taekwondo on the academic performance of students between 6 and 15 years of age, concluding that, the older the athlete, the more necessary it is to systematically practice a sport, and in the case of taekwondo, under the educational training conditions of Ecuador, it favors the learning of content in the subjects taken.

Regarding the values obtained in the same report, in relation to one dimension: "study methods," it shows that study habits are beneficial and crucial to improving students' academic performance in general. To achieve this, it is necessary to master the fundamental study techniques that students must apply in order to more effectively process the information and knowledge they acquire in the learning process.

Therefore, developing reading habits, time management, and fostering cognitive factors, interest, and motivation all positively promote progress in curriculum (Rosales *et al.*, 2022) .

These allow for the control and focus of attention on the object of study. It is important to consider that the infrastructure also promotes the development of detailed characteristics. Therefore, it is necessary to find and provide a distraction-free space with adequate lighting that simplifies note-taking, helping students properly assimilate information. This strengthens cognitive structures and contributes to the correct use of logical connections, **supported by** the implementation of assessment strategies that aid in exam preparation.

Establishing a study habit means addressing a particular situation where individuals display a set of behavioral traits (Padilla *et al.*, 2022).

Under this approach, the analysis of a specific condition and its behavioral characteristics is not based on trial and error or accidental success. Rather, it focuses on the impact of behaviors on interactions within the educational community, especially with teachers.

These, through their methods linked to the teaching-learning process and strengthened by assessment processes, guide the systematization of all the fundamental processes for creating so-called study habits; the application of appropriate techniques; time management; organization; and distraction.

Therefore, Hernández *et al.* (2018) argue that study patterns are part of the intellectual work that is related to the development of physical factors, interest and motivation, fundamental instrumental skills for studying, and components that provide students with a behavioral profile in the performance of the educational task and the personal environment.

Mira and López, (2020); argue that the teacher's work focuses on providing students with the necessary guidelines to carry out tasks related to paying attention to study activities; they achieve Establish the proposed objectives for the educational process. Motivation is essential for the initiation of learning activities, provided the student understands the motive and purpose of said activities.

CONCLUSIONS

An analysis was conducted of the specifics of the study patterns in the pretest for seventh-grade students . It was concluded that in both the control and experimental groups, the highest scores on the subject were at the "unsatisfactory" level; 32% in the control group and 40% in the experimental group.

The second range is known as "minimally satisfactory"; 28% of the control group and 24% of the experimental group report this level of satisfaction.

The results of the post-test, which specifies the experimental group as opposed to the control group, have improved significantly, given that the interval rating values have changed.

Currently, it is known that 48% of the students who participated in the experiment fell within the "satisfactory" range; 40% fell within the "moderately satisfactory" range; and the remaining 12% fell within the "minimally satisfactory" range. In conclusion, the comparative values reveal significant variation within the experimental group. This condition is also compared with the results of the first measurement in the so-called pretest.

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The authors declare no conflicts of interest.

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The authors have participated in the writing of the work and analysis of the documents.



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