Effectiveness of Learning Strategies in University Students: A Review of the Literature

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Learning strategies are procedures that should be applied depending on the characteristics and needs of students in order to facilitate the transfer of learning. The purpose of the study is to evaluate the effectiveness of learning strategies in university students in order to identify the main strategies that are most effective in higher education work, providing predictive standards that contribute to the educational process. In this way, a contribution is given to the academic entities so that students have greater effectiveness and productivity in learning. For the study, the method of argumentative criticism was used through the compilation of different current articles on learning strategies that accredit relevant results. According to the review, it was evidenced that there are academic, methodological and attitudinal aspects that influence the effectiveness of learning strategies, providing a greater application in the educational organization. In this sense, learning strategies should be designed according to the spaces and priorities of the students. Likewise, technological tools should be involved in order to dynamize the educational challenges.

Keywords: learning strategy, study skills, effective learning, cognitive strategies, meaningful learning

INTRODUCTION

Learning strategies are resources that optimize the acquisition of knowledge by students; in this regard, teachers are responsible for designing and implementing strategies that facilitate the construction of knowledge. Nowadays, following the continuous social, technological and environmental changes in different sectors, education needs better strategies to optimize its results. According to Robinson (2018) the traditional education system needs to be transformed to adapt to the changing needs of students and prepare them for an uncertain future. Therefore, there is a need to advocate for a more creative, personalized and relevant approach to education. He stated that technological advances, economic changes and growing environmental awareness require a more personalized, creative education focused on the development of skills such as critical thinking, problem solving and collaboration, so the implementation of learning strategies should be a priority in the education system. In a similar way, Sugata (2022) demonstrated how students can learn autonomously and collaboratively using technology. He defends the idea that education should take advantage of technologies and encourage self-directed learning; thus, it is necessary to recognize the importance of learning strategies in students.

For this reason, this study aims to evaluate the effectiveness of learning strategies in university students in order to analyze the main strategies that can be employed in academic contexts depending on the characteristics of the students, the professional profiles and the competent tools that dynamize the educational process. In view of this, the general problem is: What is the effectiveness of learning strategies in university students?

CONCEPTUALIZATION OF LEARNING STRATEGIES

The strategies refer to different aspects that offer an effective and original development, accompanied by a complete group of actions and behaviors aimed at a specific objective (Vásquez, 2006). In this way, learning strategies in higher education are tools and approaches that improve the ability to acquire, retain and apply new knowledge (Ramos et al., 2020), they are fundamental because they allow making the most of cognitive skills and optimizing the learning process (Camargo, 2018).

According to Estela et al. (2022), learning strategies self-regulate the knowledge process and are therefore a set of cognitive actions that are taken consciously to meaningfully relate information and facilitate its recall. Self-regulation of learning, according to Rangel and Hernández (2021), involves the student being an active agent who adjusts his behavior and actions to the demands of the activities or tasks, being aware of his/her purposes and capable of reorienting and regulating his/her action. On the other hand, Camizán et al. (2021) determined that through self-regulation, conscious procedures are used for students to form and organize their knowledge. As such, they are able to respond to the demands and conditions of educational knowledge. When there is evidence that the student continually adjusts to the changes that

occur in the academic activities, he/she is considered to be in the process of acquiring a learning strategy. Vera et al. (2019) states that their focus on metacognition and self-regulation of learning provides a solid theoretical basis for understanding how to optimize the way we learn and think. Learning strategies are not simply isolated techniques, but are rooted in a deeper metacognitive understanding of how we learn and process information. These strategies involve planning, monitoring and evaluating our own learning, allowing us to make adjustments and adaptations as we go along.

Costa and Garcia (2017) specified that learning strategies require procedures focused on the development of cognitive and behavioral capabilities guiding the student to academic success. To that extent, they are enhanced through collaborative work; therefore, they are related to the ability to develop a paidocentric education which allows identifying the capabilities of students in order to promote an enriching process of strategies that benefit them (Carvajal et al., 2019). According to the aforementioned, they can be defined and applied in different contexts with the purpose of acquiring knowledge and a change in the cognitive aspect (Del Valle and Urquijo, 2015). This means that they refer to changes that allow the coordination of knowledge in order to develop an adequate cognitive process.

IMPORTANCE OF LEARNING STRATEGIES IN HIGHER EDUCATION

Some of the important reasons why learning strategies are relevant is that they improve comprehension; that is, learning strategies help to understand and assimilate information more effectively. They provide structured methods to organize and process information, identify key concepts and establish meaningful connections between different knowledge elements (Estela et al., 2022). On the other hand, they encourage long-term retention. By using appropriate learning strategies, the ability to retain information in the long term can be increased. These strategies involve techniques such as spaced repetition, summarizing and elaboration, which strengthen the neural connections associated with information retention (Bjork and Bjork, 2020). They also promote the transfer of knowledge. Learning strategies demonstrate how to apply knowledge in different contexts and situations. They allow recognition of underlying principles and transferable skills that can be used in various areas of knowledge and problem solving (Valverde and Solis, 2021).

Another important reason is that they develop metacognitive skills, i.e., they help knowledge and awareness of one's own thinking processes (Dangremond et al., 2021). According to Casasola (2022), strategies teach how to plan, monitor and evaluate one's own learning, which allows identifying and addressing possible deficiencies and improving one's effectiveness as a student. Finally, they increase motivation and confidence. By using effective learning strategies, we experience a greater sense of accomplishment and success in our learning process (Benavides & Flores, 2019). This in turn increases both intrinsic motivation and our confidence in our abilities to tackle new challenges and acquire new knowledge (Llanga et al., 2019).

MAIN LEARNING STRATEGIES APPLIED IN HIGHER EDUCATION

The learning strategies can be developed through cognitive, metacognitive, affective or social processes. Therefore, for Cerezo et al. (2015), cognitive strategies respond to the different activities that students develop to achieve the acquisition and organization of information, while metacognitive strategies involve a mastery of the knowledge that is developed within the process.

Regarding cognitive learning strategies that allow understanding and retaining information by developing thinking skills, we have the elaboration and organization of activities such as concept maps, underlining, summaries, examples, analogies, mnemonics, etc. (Lugo et al., 2020). These cognitive strategies can be applied by students autonomously and can also be taught and promoted by teachers to improve learning and academic performance.

Regarding the meta-cognitive strategies, they are focused on active monitoring and self-reflection of the students about the process (Otondo and Torres, 2020). These strange co-creations in effective decision

making that can benefit the activities. Thus, there is planning, monitoring, self-evaluation, self-regulation, feedback, collaborative, reflective and experiential work, among others.

DEVELOPMENT

To be effective teachers must consider what learning strategies benefit students by obtaining effective results. The characteristics of the learning strategies differ according to the courses developed, whether they are language courses or technological courses, so there must be a constant variation in the choice of the most efficient strategies. In accordance with the search for information Boude (2021) considered that higher education institutions should have different systems that allow them to adapt to the changes generated in society allowing them to improve the competencies and skills of students. Therefore, according to Bjork and Bjork (2020), there is a supervision of academic practices that should be used through information technology resources in order to channel learning and strengthen students' skills that allow them to effectively adapt to the educational process.

In this sense, active learning encourages cooperative student participation and the need for innovation in teaching (Enriquez, 2021). The active learning becomes meaningful when it is based on the student's previous experiences and when the student participates in activities that establish relationships between what is new and what he/she already knows (Dangremond et al., 2021). From this it is understood that the learning experience must be capable of transforming both the student's abstract knowledge and the concrete reality. Thus, for Herrera and González (2019), higher education must build autonomous students who manage their own meta-cognitive learning for a good academic performance. To this extent, the processing and use of information requires a context control strategy where the functions of a changing knowledge are evidenced.

According to Estela et al. (2022), the use of learning strategies improves the quality of student performance, but their effectiveness is based on a conception of collaborative learning. In the context of university education, it is relevant to educate students to face challenges in a constantly changing world of knowledge and this involves working in teams (Camizán et al., 2021). This is the way in the research of Veronica Benavidez and Ramón Flores (2019), Llanga et al., (2019), Sugata (2022) it is considered that to strengthen the construction of learning it is necessary for the student to be a strategic learner, using different resources and learning strategies. However, studies suggest that university students do not use all learning strategies optimally, showing low acceptance in the use of cognitive and learning control strategies. In this regard, as Rangel and Hernández (2021) state, self-regulation of learning should be considered as a strategy that allows independent and active learning guided by educational objectives and goals where mastery and application are required to adapt the resources, processes and metacognitive strategies.

According to Mogollón et al. (2017) the role of teachers is to personalize strategies so that students can obtain better results. Thus, virtual education must be considered as a learning medium as a necessity for students. Virtual learning environments as learning strategies offer teaching resources and accessibility guides that contain information in an important way that meets the needs of the content and ensures an effective learning experience through usability and accessibility. In turn, Valverde et al. (2021) emphasizes the importance of virtual teaching strategies in higher education, highlighting the critical role of teachers and the need to adapt to the demands of the virtual environment in order to provide quality education.

Concerning the contributions of Sanchez et al. (2019) they specified that it is essential to develop new techniques and technological skills to involve and motivate students in the virtual learning context, and thus promote the development of cognitive and soft skills. On their part, Marelys and Mulford (2021) emphasized the importance of transversality and curriculum as learning strategies in higher education institutions, particularly in the development of entrepreneurial skills in students, which focuses on offering quality education with limited resources. It highlights the need to do more with less and to promote innovative, prudent and bold changes in the training of students.

In terms of Carvajal et al. (2019) the implementation of learning strategies will allow optimizing communication and the development of students' learning; in such sense, the educational construction is developed through the competence that allows undertaking and reflecting regarding the dynamic skills and

competences that students possess in order to offer adequate solutions to their learning. In this way, the role of students as active agents to build their knowledge through a holistic approach must be transformed. In accordance with Apridayani (2021) learning strategies can be applied in all subjects to optimize results by achieving more effective and enjoyable learning that responds to competencies.

CONCLUSIONS

The learning strategies are critical to optimize the knowledge acquisition process, improve long-term retention, promote knowledge transfer and develop metacognitive skills. By using the strategies effectively, more efficient and autonomous learners can be obtained. Through appropriate learning strategies it is possible to obtain ideal results where there is a quality construction. Thus, it has been evidenced that the effectiveness of learning strategies is achieved through active, collaborative, self-regulated and experiential learning, which allow maintaining an interaction between the teacher, the student and the information media, generating that learning is progressively evidenced in the evaluations.

ACKNOWLEDGEMENT

Translated & edited by American Publishing Services (https://americanpublishingservices.com).

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