MLS - EDUCATIONAL RESEARCH

http://mlsjournals.com/Educational-Research-Journal

ISSN: 2603-5820

How to cite this article:
Diaz Amado, S., Porcar Gómez, M.L., & Aguirre, J.I. (2023). El caso del rendimiento académico y la autorregulación del aprendizaje en estudiantes de secundaria. *MLS-Educational Research, 7*(1), 111-130. 10.29314/mlser.v7i1.947

THE CASE OF ACADEMIC PERFORMANCE AND SELF-REGULATION OF LEARNING IN HIGH SCHOOL STUDENTS

Salvador Diaz Amado
Santo Tomé Technical Institute (Colombia)
diamador@gmail.com - https://orcid.org/0000-0001-5799-0744
María Luisa Porcar Gómez
National University of Cuyo (Argentina)
mporcar@gmail.com - https://orcid.org/0000-0002-5845-8431
Jimena Isabel Aguirre
National University of Cuyo (Argentina)
aguirrejimena1978@gmail.com · https://orcid.org/0000-0001-8681-247X

Abstract. This study analyzes the extent to which academic performance is a complex and multicausal phenomenon of research interest over the years. Within this frame of reference, the objective of the research is to analyze the academic performance of basic subjects with self-regulated learning in secondary school students in Colombia. It is delimited by the line of research in: learning and education. Associated factors and strategies. Educational psychology. A mixed sequential methodology is used with equal research weight for both approaches. This is a descriptive-correlational design, whose sample was composed of a N=395 students aged 10 to 17 years. The results obtained show that the students' mastery of fundamental competencies for the acquisition of basic skills is low. On the other hand, the use of cognitive strategies and academic performance allows validating that students with higher and high value judgments develop more motivating and autonomous modes of involvement, which correlates with successful academic performance. It is concluded that it is imperative to prioritize the improvement of educational quality in secondary education oriented to proactive learning, to be a social learner, to strengthen emotional development, to strengthen continuous evaluation and to promote student self-regulation in order to improve learning. Likewise, the development of self-regulation skills as a teacher-researcher-innovator is proposed as a challenge for the teacher.

Key words: academic performance, self-regulation of learning, education secondary.

EL CASO DEL RENDIMIENTO ACADÉMICO Y LA AUTORREGULACIÓN DEL APRENDIZAJE EN ESTUDIANTES DE SECUNDARIA

Resumen. Este estudio analiza en qué medida el rendimiento académico es un fenómeno complejo y multicausal de interés en la investigación a lo largo de los años. Dentro de este marco de referencia, el objetivo de la investigación plantea analizar el rendimiento académico de las asignaturas básicas con el aprendizaje autorregulado en las estudiantes y los estudiantes de educación secundaria en Colombia. Está delimitado por la línea de investigación en: aprendizaje y educación. Factores y estrategias asociados. Psicología educacional. Se utiliza metodología mixta secuencial con igual peso investigativo para ambos enfoques. Se trata de un diseño

descriptivo-correlacional, cuya muestra estuvo compuesta por un N=395 estudiantes con edades entre los 10 y 17 años. Los resultados obtenidos evidencian en los estudiantes, el bajo dominio de competencias fundamentales para la adquisición de habilidades básicas. Por otra parte, el empleo de estrategias cognitivas y el rendimiento académico permite validar que los estudiantes con juicios valorativos superiores y altos desarrollan modos de implicación más motivante y autónoma, lo cual se correlaciona con el rendimiento académico exitoso. Se concluye que es imperativo priorizar la mejora de la calidad educativa en la educación secundaria orientado al aprendizaje proactivo, para ser un aprendiz social, afianzar el desarrollo emocional, fortalecer la evaluación continua y promover la autorregulación del estudiantado con miras a mejorar el aprendizaje. Asimismo, se propone como un desafío para el docente, el desarrollo de las habilidades de autorregulación como profesor-investigador-innovador.

Palabras clave: rendimiento académico, autorregulación del aprendizaje, educación secundaria.

Introduction

Today's society is in constant change, the Educational Institution is the natural environment that generates learning, its dynamics makes it complex and has a direct impact on it; in fact, what happens in the school is influenced by the policies, resources and practices generated in the structure of the educational system. Improving the academic performance of a system involves transforming the learning experience of its student body[1]. The main and ultimate goal of the educational institution is to ensure that its students reach quality educational levels.

The study is expected to rethink pedagogical practice in order to redefine learning, a permanent advance of construction underlying the teacher-learner relationship. Therefore, having the conviction that the educational process should focus today on the learning of students and young people and not only on the work of the teacher, it is justified to open the possibility of changing such practices that we have traditionally lived.

In terms of knowledge generation, it is intended that teachers, through reflection and questioning of teaching, assume an authentic commitment to relearn the mastery of their discipline, contribute to the integral formation of students through contextualized educational processes, direct strategies to improve classroom planning and cultivate meaningful teaching practices; a self-managed goal to increase learning in all curricular areas that require more improvement, and involves the realization of holistic research proposals that allow the school to attest to an effective change and continuous improvement.

This is achieved by taking into account the unique histories of students, making visible what they have to say in each of the scenarios that affect them when learning, analyzing their attitudes, dispositions, beliefs, family environment and their school and learning experiences. In short, to enrich the educational relationship between teachers, students, classroom climate and the institution in which the educational process takes place in order to achieve fundamental, humanistic competencies and their full participation in society.

The study of academic performance and self-regulation of learning is one of the many constants to be clarified in the field of pedagogical research, in relation to the purpose of this research, are delimited by the line of research in: learning and education. Associated factors

[1] In the case of Colombia, the state has legislated on inclusive language. There are several laws, agreements and policies in favor of inclusive education. "In this article the feminine and masculine gender was used simultaneously, without closing the current debate on the subject. For this reason we believe it is pertinent to emphasize that there is no political intention to exclude those who do not identify with a binary logic"

and strategies. Its novelty and innovation lie in the realization of a new theme in a new context of continuous improvement of the teaching-learning process.

The concept of academic performance is highly complex due to its multifactorial nature. It has been a recurring theme in research; arguments about the relevance of education justify its importance and explain the interest in continuing research to reverse the factors that produce differences in performance. There are studies that highlight the problem faced by educational institutions in their mission to educate due to the low level of learning among their students and to redirect the educational process.

Based on empirical evidence, explanatory models of teaching-learning and school performance in Educational Psychology: they are a conceptual structure halfway between the theoretical explanation and the description offered by the empirical data (Miñano et al., 2012).

The studies and theoretical contributions between academic performance and self-regulation can be considered one of the most fruitful lines of research in the field of learning about the factors that affect it. Recent research in this field has found singularities that correlate school performance with self-regulation of learning. Academic goals, learning strategies and academic performance (Rodriguez et al., 2014); High and low performance in self-regulated learning variables. Learning and individual differences (DiFrancesca et al., 2016); Attributional style and academic performance (Houston, 2016); Academic performance and homework involvement (Valle et al., 2018); Self-efficacy and the utility between self-regulated learning strategy knowledge and use (Cerezo et al., 2019). For this reason, these results provide empirical evidence to improve the teaching-learning processes from the students' point of view.

In the field of research on self-regulation of learning, it is a cyclical process because it emphasizes the interaction between personal, behavioral and environmental factors. Zimmerman's model (Zimmerman, 2000) is based on the socio-cognitive theory that explains the self-regulation of learning through an active, strategic, cyclical and recurrent model, a process developed by students when they are aware of their own cognitive, socio-affective and motivational processes (Zimmerman and Moylan, 2009).

Since the empirical review of the literature, self-regulation of learning (SRL) has attracted the attention of researchers. The vast majority of correlational studies agree that differences in academic performance, learning strategies and self-regulation can be explained, to some extent, by the multiple goals of young women and men students. Academic goals, cognitive and self-regulation strategies, motivational profiles (Valle et al., 2018); Goal orientation and self-concept profiles (English et al., 2015); Perceived support, resilience, goals and self-regulated learning (Gaxiola and Gonzalez, 2019); Academic goals, strategies and self-efficacy (Barca et al., 2020).

This research work seeks to support the need and interest in improving academic performance through self-regulated learning as an object of study. Based on these theoretical elements, an exploratory, descriptive-correlational, mixed descriptive-correlational study is proposed, whose general objective is to analyze the academic performance of basic subjects with self-regulated learning in secondary school students. The central hypothesis implies that the quality of school performance is related to the capacity for self-regulation; that is, the higher the level of self-regulation, the higher the academic performance.

Method

Design

The exploratory research had a mixed approach with equal research weight for both approaches (qualitative and quantitative). Its descriptive, correlational and sequential methodology; between the variables academic performance and self-regulation of learning, in accordance with the problem statement and theoretical framework defined.

Participants

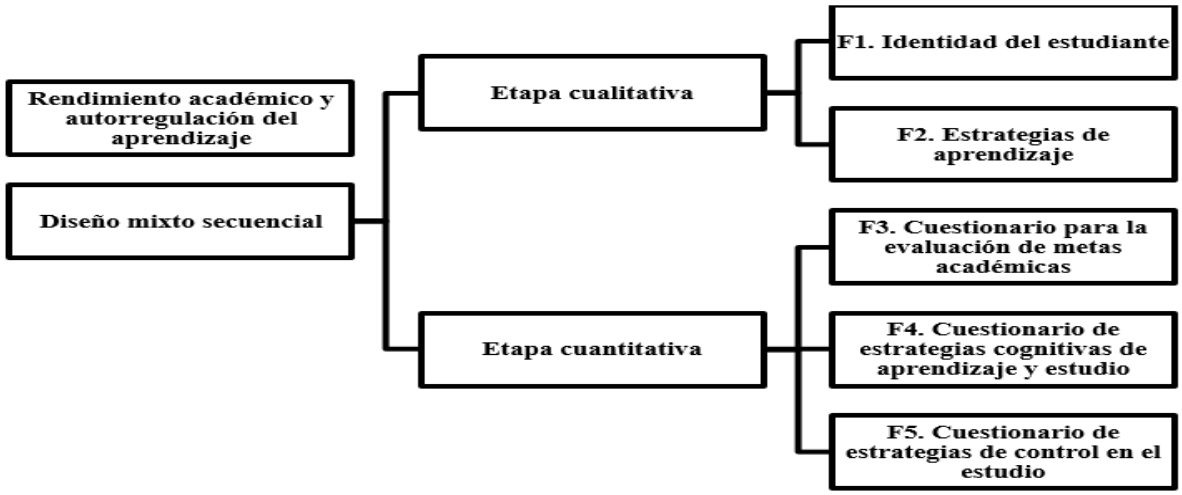
We worked with a probability sample composed of 395 students, 208 males and 187 females, with a mean age of 14.6, SD = .69, confidence level of 95% and margin of error of 3%; which are part of the population universe of 627 people of school age in public secondary education at the basic and middle vocational levels of the Santo Tomás Technical Institute, municipality of Zapatoca, Santander/Colombia.

Instruments

The research is composed of two stages and five phases, in which five instruments were used, two semi-structured interviews for the qualitative approach and three questionnaires for the quantitative approach. As presented graphically in Figure 1.

Figure 1

Mixed methodological design phases: qualitative-quantitative



Procedure

Before administering the tests, the necessary permissions were obtained both from the institution's management team and from the fathers, mothers and/or guardians of the participants, in compliance with current regulations on informed consent, in a conscious and voluntary manner. A survey validated through two specific processes was used: expert judgment (who evaluate the internal consistency and corresponding contextual adequacy).

Data analysis

For data collection, qualitative research techniques were used, such as: field diary, formal and informal dialogues, participant observation, review of sources and semi-structured interviews. One of the fundamental principles was to know one's own reality from the perspective of the participants, this analytical process allowed visualizing the emergence of

meanings, logics, patterns and atypical cases, quotes, descriptive and analytical memos that were configured in previous, aprioristic, emergent and axial categories during the processing of information collected through the various instruments used and in confrontation with the theoretical foundation.

The information obtained was analyzed based on a process of temporal, spatial and speculative dialectical triangulation, established from the problem and structured the research object of study through the use of Atlas.ti version 8 software.

In the first stage of a qualitative nature, phase one, a semi-structured interview, Adaptive Learner Identity Test (LIQ), was applied. Its purpose was to define a group of statements with open-ended answers referring to their learning inclinations and their identity as learners (conceptions, strategies and feelings).

During phase two, a semi-structured interview on learning styles was applied. It explored the way in which students carry out all their learning. It is made up of four aspects: cognitive aptitudes and abilities; school motivation; learning skills and study techniques.

On the other hand, in the quantitative stage, an exploratory factor analysis was performed in order to evaluate the degree to which these items measured multidimensional constructs, using principal component analysis as the extraction method and Varimax Normalization as the rotation method; its purpose was to establish with greater precision the underlying dimensions, constructs or latent variables of the observed variables, with the help of SPSS 25 software.

The KMO sample adequacy measure, represented with averages between .920 and .950, and Bartlett's test of sphericity, whose resulting significance level is .000, support the appropriateness of factoring the variables in each of the questionnaires.

Pearson's correlation coefficient is an indicator that made it possible to establish the joint covariation of the two variables and, on the other hand, to obtain sufficient universality to be able to establish comparisons between different cases. The relationship between the different subscales of the questionnaires was studied, a process by which the mean, standard deviation, skewness and kurtosis were calculated: the results showed favorable trends. (In the case of the mean, there was a positive correlation $r > +1$)

In this exploratory study, one of the objectives was to evaluate the correlation of academic performance in the subjects of mathematics, Spanish, natural sciences, social sciences and English, with the response categories grouped in the respective factors. The Tau Kendall bivariate correlation coefficient was applied.

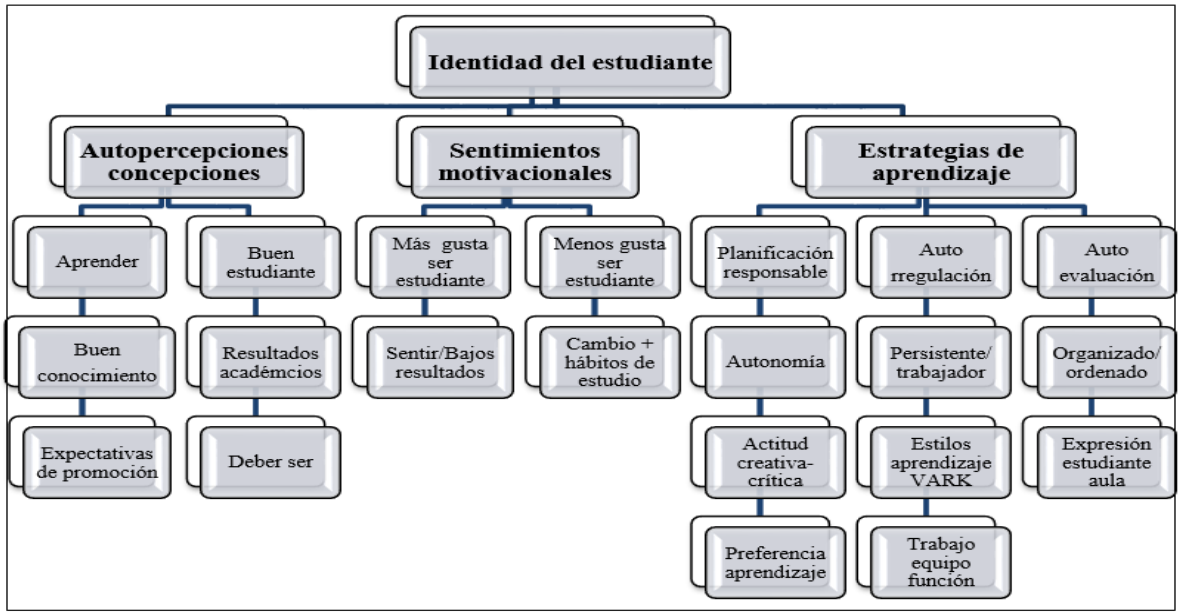
To analyze the results of each questionnaire, a classification of the questionnaire responses was performed using Multiple Correspondence Factor Analysis (MCA), followed by a classification analysis (CA) applied on the MCA coordinates, using SpaD-N software.

Results

The results of the qualitative stage, phase one, guaranteed the diagnosis of self-perceptions about academic performance, learning styles and strategies in students and students. Figure 2, shows graphically the core category student identity with its respective sub-categories (See link Figure 2).

Figure 2

Core category student identity with its respective sub-categories (conceptions, strategies and feelings)



Note. Source: own elaboration.[2]

From the data obtained in Figure 2, it was possible to observe that the conceptions, support strategies and motivational feelings allowed the adolescents and young people to maintain a mental state conducive to learning, improve their self-concept, reduce anxiety, direct attention to homework, change study habits and implement a school adjustment to improve their academic expectations.

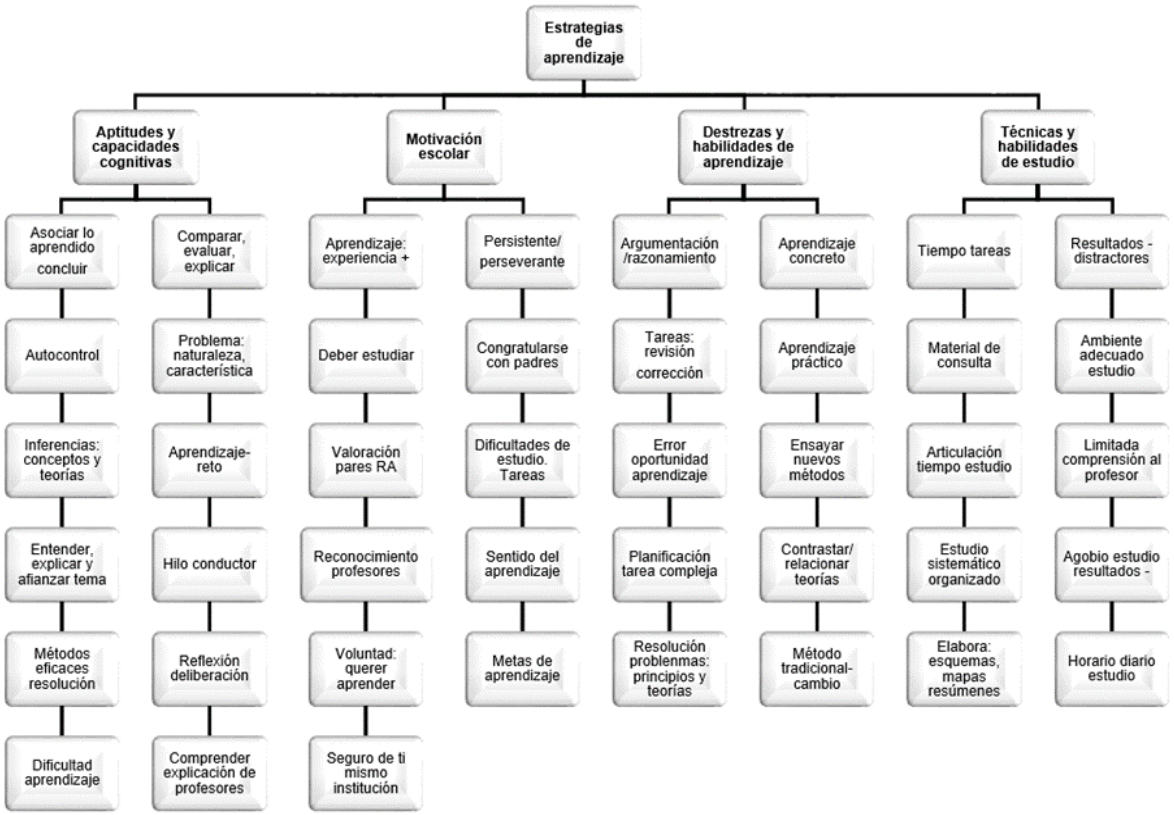
The sequence of analysis carried out so far with all the above information, evidences the dimensions related to attitudes towards study; learning strategies and support.

Along the same lines, the qualitative results of phase two are configured with the dimensions of analysis. The following image shows the integration of the core category learning styles. Subcategories (attitudes and cognitive abilities, school motivation, learning skills and abilities, study skills and techniques) (see Figure 3).

Note:[2]Figures two (2) and three (3) are the result and construction of previous, aprioristic, emergent and axial categories in the qualitative phase elaborated with Atlas.ti software software (Version 8) Link: core category Student Identity.

Figure 3

Core category learning styles. Subcategories (attitudes and cognitive abilities, school motivation, learning skills and abilities, study skills and techniques)



Note. Source: own elaboration.[3]

Based on the data obtained in Figure 3, it is possible to understand how learning styles, together with other variables, are closely related to academic performance. Different factors are involved, such as intellectual level, personality, self-esteem, motivation, aptitudes, interests, study habits, and teacher-student relationships. (See link Figure 3). The integration of the mixed methodological process led us to holistically correlate the emerging results.

On the other hand, data related to academic performance and self-regulation of learning were collected throughout the quantitative stage. *In phase three, the questionnaire for the evaluation of academic goals CEMA II,* Nuñez (1997) was applied.

It allowed us to know the main motives through which students strive for academic performance, centered on four categories: (a) task-related, (b) self-esteem, (c) social valuation and (d) achievement of external rewards (a) task-related, (b) self-esteem, (c) social valuation and (d) achievement of external rewards.

Correlation matrix analysis

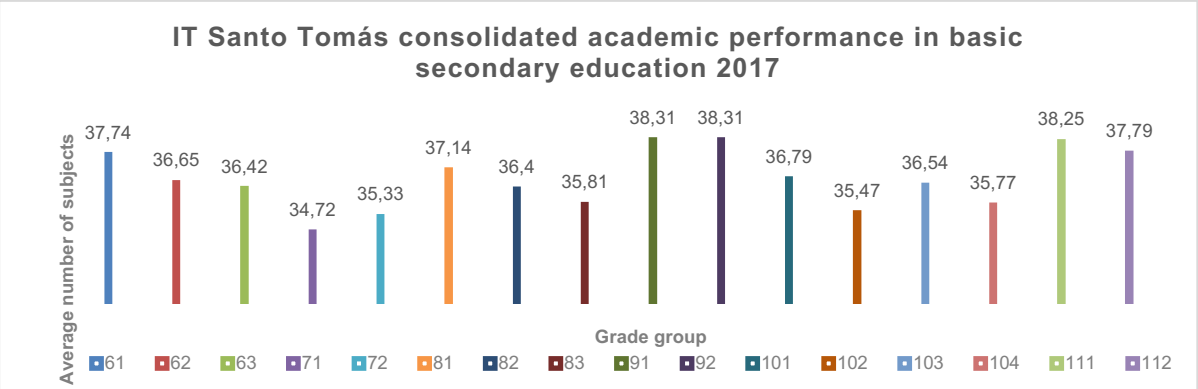
Since the CEMA II questionnaire has qualitative variables and one of the objectives was to verify whether or not there is a correlation between the answers to each of the components of the questionnaire and the academic results in the subjects, the Tau Kendall coefficient was applied. Under this conceptual and procedural premise, the consolidation of grades on academic

Note:[3] Link: core category learning styles.

performance in secondary education was referenced, with basic assessment indicators, according to the institutional evaluation system in all subjects of the curriculum. (See Figure 4).

Figure 4

Consolidated academic performance in basic secondary education



Note. Source: Prepared by the authors based on information obtained from the institutional platform.

The methodological process involves finding the matrix of correlations between the categories of the CEMA II, with the academic performance in the stipulated subjects.

The information contained therein allowed us to differentiate the following types of goals: achievement or reward, learning-oriented, as shown in Table 1.

Table 1

Correlation results: Components CEMA II and Mathematics, Language Arts, Natural Sciences, Social Sciences and English

Correlation results: CEMA II components and mathematics, language, natural sciences, social sciences and English		
Component	**Appearance**	***p-value* Tau-Kendall**
Decent future	32. I work hard in my studies because I want to get a good job in the future.	0.041
Competence and control	9. I work hard in my studies because the more I know, the more I feel in control.	0.039

With the purpose of advancing in the understanding of the results, it can be affirmed that the academic performance in the described areas presents correlation, but not as revealing as the degree to which the items (32 and 9) do, p-value Tau-Kendall represents a very significant correlation close to $p<.05$, on the contrary, the correlation with the other components: punishment avoidance, interest, defensive involvement, social and improvement is low or weak.

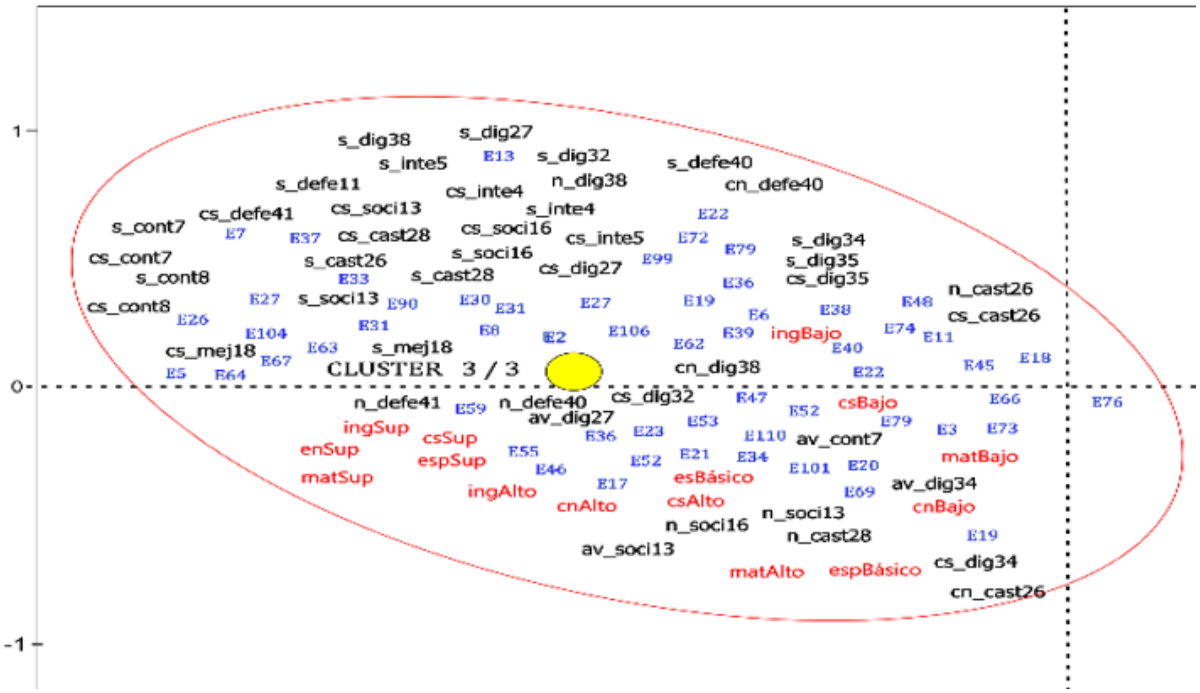
Multivariate analysis

Figure 5 shows graphically the Multiple Correspondence Analysis (MCA) factorial plane.

Three groupings of students obtained from a classification analysis applied on the MCL coordinates are identified in the figure. To identify the students, the letter E was used as a code, where E1 represents student one and so on from i = 1, 2, 3, ...n in each of the clusters.

Figure 5

ACM factorial plan with response categories - CEMA II



Note. Source: own elaboration.[4]

The factorial plane was able to define a CEMA II factor indicator that distinguishes three groups of students. In this order of ideas, cluster three is related to the highest representative percentage with 78.75% of the total, composed of 63 students.

A group of students with higher level academic ratings, respond always and almost always in the factors of involvement for improvement, control, worthy future, interest, social, defense and punishment; in general the characterization establishes that:

Students always and almost always make an effort to study because it is in their parents' interest to value them positively. Similarly, they show interest in being independent and autonomous.

They are apprentices who are concerned about their future because they do not want to be unemployed and want a well-paid position. They make an effort not to fail evaluations, they almost always make an effort to study when they like the subject matter and enjoy what they learn, they are interested in the point of view of the people important to them about their academic performance.

Another collective, within this map, is characterized by the fact that they are not interested in being autonomous or independent. It is inferred that academic performance is

Note:[4] Link for more information: factorial plane Multiple Correspondence Analysis CEMA II. ACM-CEMA II.pdf

lower to the same extent that negative attitudes are higher, on the one hand, the negative evaluation of themselves as students when approaching study and learning tasks.

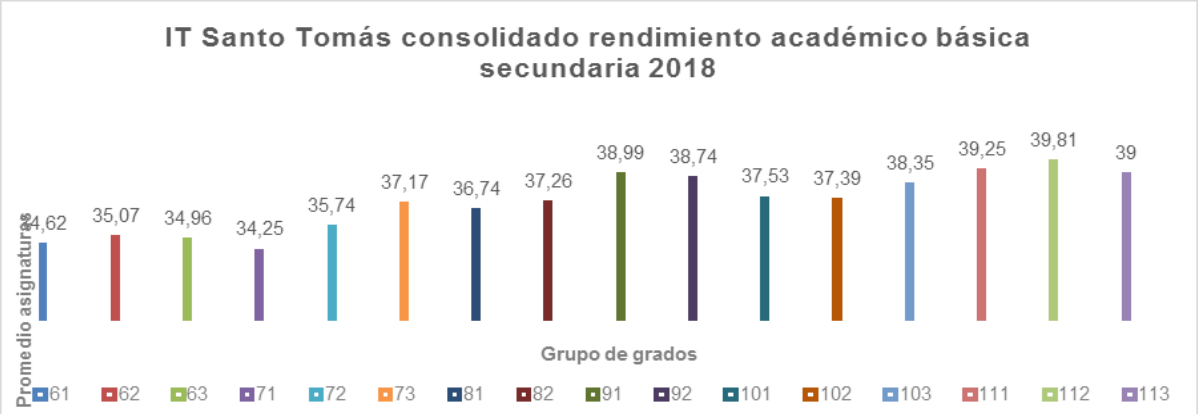
In the second quantitative stage. Phase four. The CECAE Cognitive Strategies for Learning and Study Questionnaire (Weinstein et al., 1987) was applied. The items are distributed in four dimensions: (Valle et al., 2006). These strategies are: a) selection, b) organization, c) elaboration and, d) memorization.

Correlation matrix analysis

This work aims to change an undeniable reality and seeks to motivate students to improve their academic performance, in this sense, the management and teaching staff must generate a great commitment to systematically and rigorously develop teaching situations so that students learn in context and overcome learning difficulties. The above argument is based on the consolidated grades for the 2018 school year, where no significant improvements in their training can be seen; as evidenced in Figure 6.

Figure 6

Consolidated academic performance for the 2018 school year



Note. Source: Prepared by the authors based on data obtained from the institutional platform.

The methodological sequence involves finding the correlation matrix between the CECAE categories. The results obtained document significant correlations in particular items (7, 19) whose Tau-Kendall p-values are close to $p < .05$, as detailed in Table 2.

Table 2
Correlation results: CECAE and Mathematics, Language Arts, Natural Sciences, Social Sciences and English components

Correlation results: CECAE components and mathematics, language, natural sciences, social sciences and English		
Component	**Appearance**	***p-value*** **Tau-Kendall**
Organization-planning.	7. I have little ability to summarize what I read and/or hear.	0.040
Control-consolidation strategies.	19. While reviewing the materials for a class, I am doing the practical work or assigned activities.	0.021

The study analyzed up to this point allows us to identify a series of general tendencies in the understanding of the results, it can be affirmed that the academic performance in the mentioned areas reflects a positive correlation, however, it is not as significant as the items (7 and 19).

Multivariate analysis

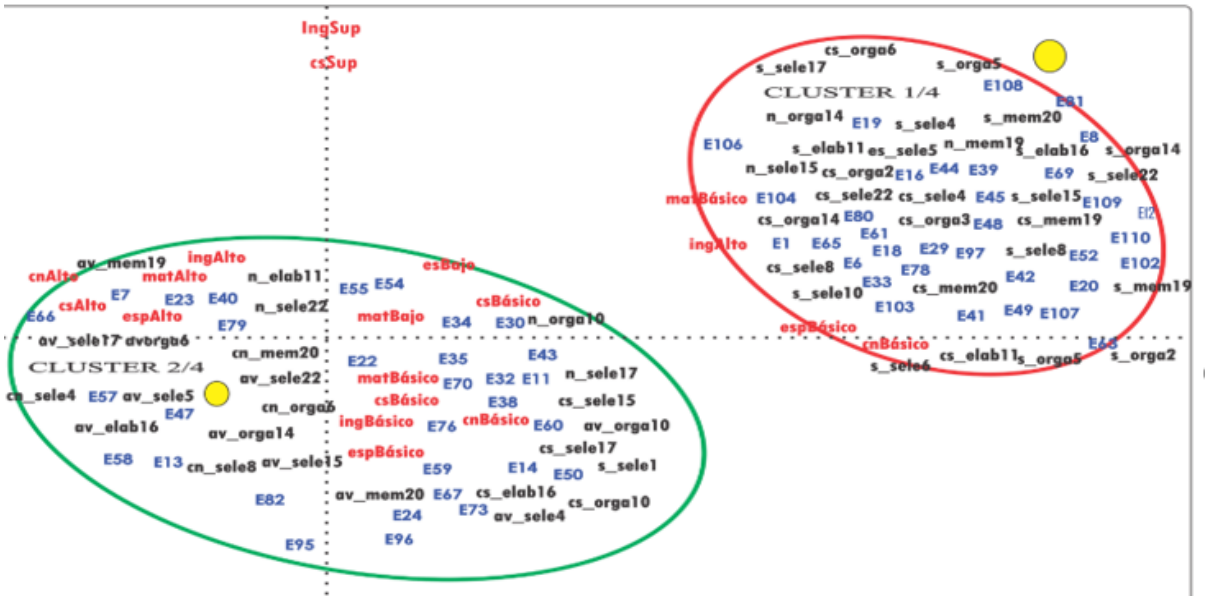
Figure 7 graphically represents the Multiple Correspondence Analysis (MCA) factorial plane applied to the response categories of the aforementioned factors. Four clusters of students were identified from a classification analysis applied to the MCL coordinates.

In the factorial map, the interpretations of the two axes are combined, showing a positioning of the students, forming four groupings, which is determined by an association between the response categories on the factors contemplated by the CECAE questionnaire and the answers given.

Next, the clusters with the highest representative percentage are listed. Cluster one accounts for 48.75% of the total, comprising 49 students. Regarding the organization factor they almost always find it difficult to organize, plan how to study and comply, they always have difficulties to understand the questions in the evaluations.

In contrast to the above, it can be indicated that this group of students always read at home the texts suggested to them in class. They almost always make diagrams, graphs and concept maps to summarize the contents of a subject. A large majority of this group has basic academic performance in the different subjects and high performance in English.

Figure 7
ACM factorial map with response categories - CECAE



Note. Source: own elaboration.[5]

Cluster two represents 28.75% of the total, composed of 23 male and female students. They stated that they almost never finish something that is boring. When studying, they sometimes fixate on the important concepts of the subject. They recognize that they find it difficult to organize and plan how to study and follow through.

Finally, in the third stage of a quantitative nature, phase five; the control strategies questionnaire was applied in the ECE study Hernández, and García, 1995. It consisted of determining whether they are in correspondence with the strategies used, both at the beginning of the study, during the study and at the end of the study.

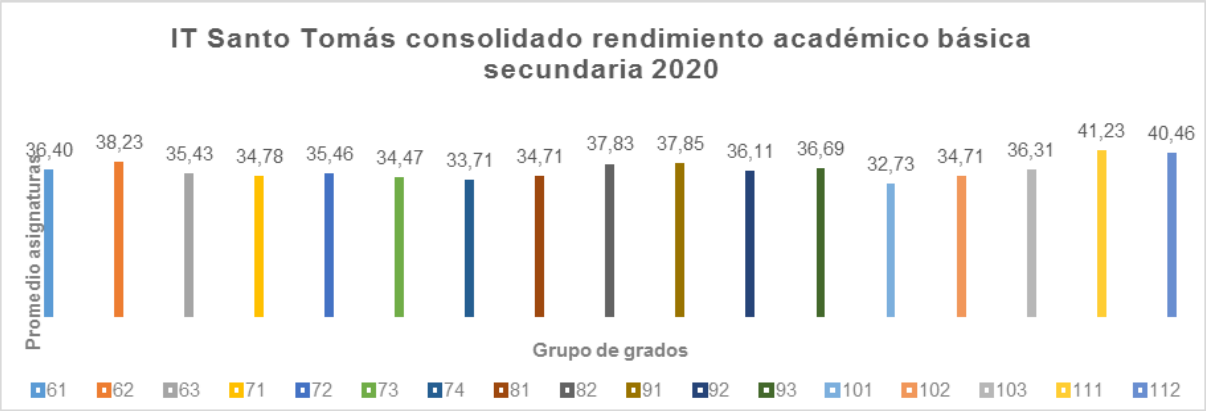
It focuses on three types of self-regulation strategies: a) supervision, related to monitoring the study process; b) planning study activities; and c) revision.

Correlation matrix analysis

If we take as a reference the academic history of the institution, quadrennium 2017-2020; it is important to note that, a good number of students, especially those who obtain a basic and low performance, claim to find it difficult to study and, in addition, the vast majority of their teachers usually agree with this problem. It is important to mention that there was an increase in school dropouts and grade loss due to Covid 19. See Figure 8.

Note:[5] Link for more information: factorial plane Multiple Correspondence Analysis CECAE. ACM-CECAE.pdf

Figure 8
Consolidated academic performance school year 2020



Note. Source: Prepared by based on information obtained from the institutional platform.

The methodological progression involves finding the correlation matrix between the categories of the ECE questionnaire. The results obtained show significant correlations, especially for items (4, 16 and 10) whose Tau-Kendall p-values are close to $p < 0.5$. As specified in Table 3.

Table 3
Correlation results: Components ECE and Mathematics, Language Arts, Natural Sciences, Social Sciences and English.

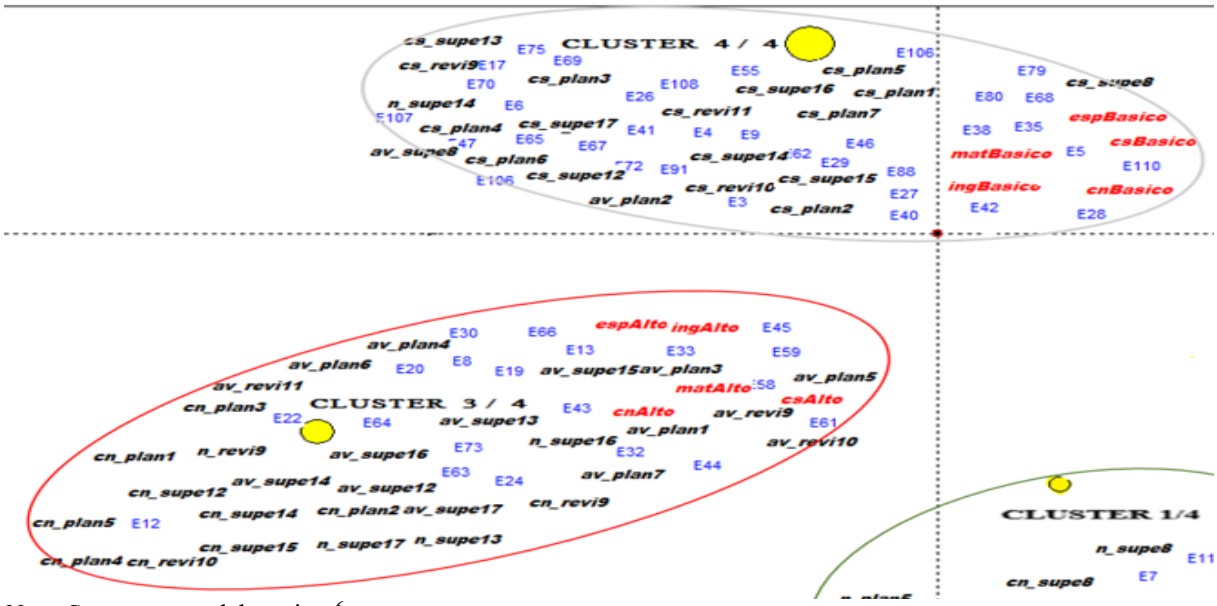
Correlation results: ECE components and mathematics, language, natural sciences, social sciences and English.		
Component	**Appearance**	***p-value* Tau-Kendall**
Planning.	4. When studying I usually establish a study planning and method.	0.037
Supervision.	16. When I have finished studying, I try to relate what I have studied to the exam or to what the teacher asks me to do.	0.039
Review.	10. When I am faced with a problem, I try to find a solution as a matter of priority.	0.033

These results are consistent and support the urgent need for educational intervention to improve academic performance through self-regulation of learning.

Multivariate analysis

Figure 9 graphically represents the Multiple Correspondence Analysis (MCA) factorial plane applied to the response categories of the aforementioned factors. Four groupings of students obtained from a classification analysis applied on the MCL coordinates are identified in the scheme.

Figure 9
ACM factorial plane with response categories - ECE



Note. Source: own elaboration.[6]

The following lines explain the relationship of the clusters with the highest representative percentage. Cluster four represents 47.50% of the total and is made up of 38 students. In this grouping, the three factors of ECE, i.e. planning, review and supervision, are present.

Regarding the planning factor. Almost always before starting to study, they consider the aspects to study, they distribute the time in priority order to do the school activities, they supervise their learning by consulting new sources to make it easier for them to understand the subject. Regarding the review factor, almost always when they do not understand a topic they move on to try to clarify the topic for themselves.

Corresponding to cluster three characterizes 31.25% of the total, composed of 25 students. The characterization of the group is as follows: regarding the planning factor, this group states that sometimes when they study they take into account what is important. Regarding the supervision factor, sometimes he reviews what he does not understand to try to learn it well, at other times, when he does not succeed, he consults the opinion of peers to see if he is doing the right thing and he usually makes a general review to detect errors.

Discussion

In recent decades, a solid body of research has addressed the relationship between how students manage their learning process and academic outcomes (Schelfhout, 2006; Rosário, 2010a, 2013a). This relationship implies the set of beliefs manifested by the learner about his or her capacity to correctly apply the knowledge and skills he or she already possesses and about his or her position in relation to new learning.

The results found in relation to the purpose of the research are in line with the theoretical contributions between academic performance and self-regulation of learning. In particular,

Note:[6] Link for more information: factorial plane Multiple Correspondence Analysis ECE. ACM-CECE.pdf

there is agreement on the predictive capacity of the former with respect to the latter (Gaxiola and González, 2019) Academic goals, cognitive and self-regulation strategies, motivational profiles (Valle et al., 2018); Academic goals, learning strategies and academic performance (Rodríguez et al., 2014); Goal orientation and self-concept profiles (Inglés et al., 2015). These types of goals are nowadays considered as dependent and interrelated variables, which are predictors of school success.

In this sense, it is important to propose to the students a horizon of commitment to the activities developed in their school context, without forgetting an attitudinal change, both in their expectations and academic goals as well as in the organization and planning of study with their areas of training. These aspects are fundamental given the cognitive, socioemotional and motivational demands involved in the formative process at the Secondary Education stage.

From the foregoing, concordances are found with the study conducted by Houston (2016), with 957 secondary school students in high and low performing schools in the General Certificate of Secondary Education (GCSE) in the United Kingdom. It confirms that a stable and controllable internal attributional style of success and failure outcomes is related to good academic performance.

On the other hand, the scope would be on the side of teachers because they have the co-responsibility of increasing their personal and social formation, since they must face problems of behavior, attitudes and relationships, which are intertwined in the evolution of the student's life and the classroom. Consequently, teachers must be aware that, beyond teaching, the priority is learning. It involves focusing more on what the student learns than on what the teacher teaches.

The results of the qualitative stage indicate that the first objective of the research was oriented to diagnose the self-perceptions about academic performance, learning styles and strategies in young women and students. Their findings provide additional support to the hypothesis posed at the beginning of this study, where students manifest multiple factors and causes that affect their academic performance with respect to their capacity for autonomous study, due to personal and family circumstances, as well as others associated with the educational system itself.

In the following section, the results of the quantitative stage are discussed. Indeed, relevant authors in the research on academic goals and causal attributions state that the goals pursued by students in their teaching/learning processes are of different types and can be considered from different perspectives depending on the differentiated optics of the authors researching in the field. (Barca-Enriquez et al., 2015; Pintrich, and Schunk, 2006; Ramudo et al., 2017 as cited in Barca et al., 2020, p. 10)

With reference to learning goals, it is essential to point out that students orient their learning style towards the development of their own competencies; thus, they are motivated by the act of learning and, as a consequence, improve their knowledge and skills.

This research presents similar results, with the uses reported by the students considered positive for their future, since a greater self-management of high expectations in their academic training can be expected, according to a study by Pérez et al., (2009).

The findings presented up to this point show the concordance of the academic goals in relation to the first hypothesis, in the sense that the students manifest multiple conditioning factors that affect their academic performance with respect to their capacity for autonomous study, due to personal, social and scholastic factors.

Classroom experience with students with basic and low performance shows that, in most cases, these students are unmotivated to study, do not know how to study, present learning difficulties, show little efficient use of study time, lack study habits and methods, goals and learning strategies.

It is evident that some have a specific way of learning that is linked to their personal characteristics and the motivation they have to achieve academic objectives, in that order of ideas, the strategies used must be adapted to the needs, resources and capabilities that the subjects have, this will involve the development of different cognitive and meta-cognitive processes (Visbal, et al., 2017).

In general, students, young people with low and basic academic performance have a negative self-concept and assume that they are not "smart", their peers are "better" than them and the self-fulfilling prophecy occurs: "why study if in the end I am not capable". In fact, it minimizes their expectations of school success; it is proven that, if they do not learn strategies, how do they make use of them, to improve their learning.

According to the above, to achieve strategic and autonomous learning based on the concept of learning some educational institutions have opted for the implementation of learning strategies which are intentional in nature and involve a plan of action through which the cognitive operations that are employed when a subject has to face the task of learning are strengthened (Gasco, 2017).

The present study confirms the previous findings and contributes to the evidence by suggesting a probable explanation in accordance with the second hypothesis; to the extent that learning strategies are incorporated, students will be able to learn and substantially improve their academic formative process.

Students say that they sometimes prioritize the different activities in order to establish an order of priority. Almost never, they distribute the time for each of the aspects in question before getting ready to study.

High-achieving young men and women students, as compared to basic and low-average students, show a more strategic and adaptive learning approach during all phases of their learning process. They orient themselves and plan more strategically and effectively, combine different cognitive strategies, and adopt self-assessment to regulate their learning process (DiFrancesca et al., 2016).

According to different theoretical approaches, the use of self-regulated learning should favor better learning and academic achievement (Zimmerman, 2013a). Successful students and adolescents are generally described as "self-regulated learners" because they are able to generate a series of thoughts, feelings, and actions on their own, systematically oriented toward achieving their goals. (Cerezo et al., 2019, p. 2)

This strategic action at the academic level is the one that can guarantee significant improvements in the academic performance of the different subjects to the extent that the teachers in class work with the students on the declarative, procedural and conditional knowledge of learning strategies, explicitly and intentionally teaching a wide range of strategies and practicing them in the specific context of the different subjects.

The key is how to help students cope with their learning in an intentional, autonomous and effective way, a process called "self-regulation of learning" (Panadero and Alonso-Tapia, 2014).

Therefore, the large amount of research developed on self-regulated learning in students, together with the new way of understanding the way in which teachers develop their educational task, constitute the basis for research on self-regulated learning in teachers.

Consequently, the research approach supports the idea that the expected change in students' self-regulated behavior is not domain-specific, but transcends domains and learning agents. The results obtained support and validate the proposed hypothesis that the quality of school performance is related to the capacity for self-regulation; that is, the higher the level of self-regulation, the higher the academic performance.

Conclusions

In line with the above, we propose greater efficiency, both in terms of student learning and teacher teaching: prioritizing the improvement of educational quality in secondary education means placing students at the center of learning. In other words, to promote and build a wide range of strategies, taking into account that students and teachers are social learners. Likewise, recognizing individual differences, fostering emotional development, strengthening continuous assessment, and encouraging student self-regulation are key to improving learning.

The research has some limitations, which should be taken into consideration for future research. First, it is considered interesting to extend the study of academic performance to students at other educational levels. Similarly, it would be relevant to consider other related variables such as gender, school type, as well as other social and cultural aspects.

The implications and recommendations of this study suggest that: learning is building horizontal connections. The proposals for improvement require that the agents involved in the educational community commit themselves to tasks such as: at the institutional level, the academic component must prioritize a pedagogical self-diagnosis of the teaching staff; it requires the creation of interdisciplinary structures to improve the culture of institutional self-evaluation; a school open to the environment and permeable to updated knowledge.

From an ethical perspective, the teaching manager should be the key actor in the process of transforming the management of the educational institution through continuous improvement plans on the quality of education and that in sum, the teacher increases the quality of his teaching and in practice is the engine that achieves this change, as a community of lifelong learning. It is about advancing and maturing as a collective, from a horizontal, non-hierarchical vision of continuous improvement.

References

Alonso-Tapia, J., Huertas, J. A., & Ruiz, M. A. (2010). On the nature of motivational orientations: Implications of assessed goals and gender differences for motivational goal theory. *The Spanish journal of psychology, 13*(1), 232-243. https://doi.org/10.1017/S1138741600003814

Barca Lozano, A., Peralto Esquiando, M., Porto Robo, A. M., Marcos Malhiera, J. L., & Breílla Blanco, J. C. (2011). Metas académicas del alumnado de Educación Secundaria Obligatoria (ESO) y Bachillerato con alto y bajo rendimiento escolar. *Revista de educación*, *354*, 341-368.

Barca-Lozano, A., Almeida, L. S., Porto-Robo, A. M., Peralbo-Uzquiano, M., & Breílla-Blanco, J. C. (2012). Motivación escolar y rendimiento: impacto de metas académicas,

de estrategias de aprendizaje y autoeficacia. *Anales de Psicología/Annals of Psychology, 28*(3), 848-859. https://doi.org/10.6018/analesps.28.3.156101

Barca-Enriquez, E., Brenlla, J. C., Peralbo, M., Almeida, L. S., Porto, A., & Barca, A. (2015). Habilidades cognitivas, autoeficacia y estrategias de aprendizaje: indicadores y determinantes del rendimiento académico en el alumnado de educación secundaria. *Revista de estudios e investigación en psicología y educación*, 083-089. https://doi.org/10.17979/reipe.2015.0.01.460

Barca, E., Breílla, J., Mascarenhas, S., & Barca, A. (2020). Metas académicas, estrategias y autoeficacia: un análisis diferencial entre el rendimiento académico alto y bajo del alumnado de educación secundaria. *Reh-Revista Educação e Humanidades, 1*(1), 8-37. https://doi.org/10.17979/reipe.2015.0.01.460

Cerezo, R., Fernández, E., Amieiro, N., Valle, A., Rosário, P., & Núñez, J. C. (2019). Mediating role of self-efficacy and usefulness between self-regulated learning strategy knowledge and its use. *Revista de Psicodidáctica, 24*(1), 1-8. https://doi.org/10.1016/j.psicoe.2018.09.001

DiFrancesca, D., Nietfeld, J. L., & Cao, L. (2016). A comparison of high and low achieving students on self-regulated learning variables. *Learning and Individual Differences, 45*, 228-236. https://doi.org/10.1016/j.lindif.2015.11.010

Gaxiola, J., & González, S. (2019). Apoyo percibido, resiliencia, metas y aprendizaje autorregulado en bachilleres. *Revista electrónica de investigación educativa, 21*. https://doi.org/10.24320/redie.2019.21.e08.1983

Gasco, J. (2017). Diferencias en el uso de estrategias en el aprendizaje de las matemáticas en enseñanza secundaria según el sexo. *Cuadernos de Investigación Educativa, 8*(1), 47-59. https://doi.org/10.18861/cied.2017.8.1.2638

Hernández, P., & García, L. A. (1995). *Cuestionario de Estrategias de Control en el Estudio (ECE)*. Departamento de Psicología, Evolutiva y Psicobiología. Universidad de La Laguna.

Houston, D. M. (2016). Revisiting the relationship between attributional style and academic performance. *Journal of applied social psicología, 46*(3), 192-200. https://doi.org/10.1111/jasp.12356

Inglés, C. J., Martínez-Monteagudo, M. C., García-Fernández, J. M., Valle, A., & Castejón, J. L. (2015). Perfiles de orientaciones de metas y autoconcepto de estudiantes de Educación Secundaria. *Revista de Psicodidáctica, 20*(1), 99-116. https://doi.org/10.1387/RevPsicodidact.10023

Miñano Pérez, P., Castejón Costa, J. L., & Gilar Corbí, R. (2012). An explanatory model of academic achievement based on aptitudes, goal orientations, self-concept and learning strategies. *The Spanish journal of psychology, 15*(1), 48-60. https://doi.org/10.5209/rev_SJOP.2012.v15.n1.37283

Núñez, J. C., González-Pienda, J. A., González-Pumariega, S., García, M., & Roces, C. (1997). *Cuestionario para la evaluación de metas académicas en Secundaria (CEMA-II)*. Departamento de Psicología, Universidad de Oviedo.

Panadero, E., & Alonso-Tapia, J. (2014). ¿Cómo autorregulan nuestros alumnos? Modelo de Zimmerman sobre estrategias de aprendizaje. *Anales de Psicología/Annals of Psychology, 30*(2), 450-462. https://doi.org/10.6018/analesps.30.2.167221

Pekrun, R., Elliot, A. J., & Maier, M. A. (2009). Achievement goals and achievement emotions: Testing a model of their joint relations with academic performance. *Journal of educational Psychology, 101*(1), 115. https://doi.org/10.1037/a0013383

Pérez Villalobos, M. V., Díaz Mujica, A., González-Pienda, J. A., Núñez Pérez, J. C., & Rosário, P. (2009). Escala de metas de estudio para estudiantes universitarios. *Revista Interamericana de Psicología, 43*(3), 449- 455.

Pintrich, P. R., Schunk, D. H., & Luque, M. L. (2006). *Motivación en contextos educativos: teoría, investigación y aplicaciones*. Pearson educación.

Rodríguez, S., Piñeiro, I., Regueiro, B., Gayo, E., & Valle, A. (2014). Metas académicas, estrategias de aprendizaje y rendimiento académico en educación secundaria. *Magister, 26*(1), 1-9. https://doi.org/10.1016/S0212-6796(14)70012-X

Rosário, P., Núñez, J.C., González-Pienda, J.A., Valle, A., Trigo, L., & Guimarães, C. (2010). Enhancing self-regulation and approaches to learning in first-year college students: A narrative-based program asesad in the Iberian Peninsula. *European Journal of Psychology of Education, 25*, 411-428. https://doi.org/10.1007/s10212-010-0020-y

Rosário, P., Núñez, J. C., Valle, A.; González-Pienda, J. A., & Lourenço, A. (2013b). Grade level, study time, and grade retention and their effects on motivation, self-regulated learning strategies, and mathematics achievement: a structural equation model. *European Journal of Psychology of Education, 28*, 1311-1331. https://doi.org/10.1007/s10212-012-0167-9

Schelfhout, W., Dochy, F., Janssens, S., Struyven, K., Gielen, S., & Sierens, E. (2006). Educating for learning-focused teaching in teacher training: The need to link learning content with practice experiences within an inductive approach. *Teaching and Teacher Education, 22*(7), 874-897. https://doi.org/10.1016/j.tate.2006.04.003

Valle, A., Cabanach, R., Núñez, J., & González, J. (2006). Metas académicas, estrategias cognitivas y estrategias de autorregulación del estudio. *Psicothema, 18*(2), 165-170.

Valle, A., Regueiro, B., Núñez, J., Piñeiro, I., Rodríguez, S., & Rosário, P. (2018). Niveles de rendimiento académico e implicación en los deberes escolares en estudiantes españoles de Educación Secundaria. *European Journal of Education and Psychology 11*, 19-31. https://doi.org/10.30552/ejep.v11i1.183

Visbal, D., Mendoza, A., & Díaz, A. (2017). Estrategias de aprendizaje en la educación superior. *Sophia, 13* (2), 70-81. https://doi.org/10.18634/sophiaj.13v.2i.461

Weinstein, C., Schulte, A., & Palmer, D. (1987). *Learning and Study Strategies Inventory (LASSI).* Clearwater: H & H Publishing.

Zimmerman, B. J., & Moylan, A. R. (2009). Self-regulation: Where metacognition and motivation intersect. *In Handbook of metacognition in education* (pp. 311-328). Routledge.

Zimmerman, B. J. (2013). Theories of self-regulated learning and academic achievement: An overview and analysis. *Self-regulated learning and academic achievement*, 1-36. https://doi.org/10.4324/9781410601032

Date received: 02/12/2021
Revision date: 04/04/2022
Date of acceptance: 03/05/2022