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Educational leadership of teachers in the self-regulation learning process of university students

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Abstract.- This study investigated the influence of teachers' educational leadership on the self-regulation learning process of the first semester university students of the Social Communication and Journalism program in a higher education institution in Colombia. Nonexperimental quantitative methodology and transactional correlational design were employed wherein the MLQ and the Motivated Strategies for Learning Questionnaire were used. The data collected were analyzed, thus revealing that for the educational leadership variable, the transformational leadership style presented the highest percentage of participation among teachers, and for the self-regulation learning variable, it was found that students do use self-regulation strategies.

Keywords:. Self-regulated learning, educational leadership, transformational leadership theory, academic achievement

El liderazgo educativo de los docentes en el proceso de autorregulación del aprendizaje de los estudiantes universitarios

Resumen.-Este estudio tuvo como propósito determinar la influencia del liderazgo educativo docente en el proceso de autorregulación del aprendizaje de los estudiantes universitarios de primer semestre de la carrera de Comunicación Social - Periodismo en una institución de educación superior de Colombia. Se empleó una metodología cuantitativa no experimental y un diseño transeccional - correlacional en el que se utilizó el MLQ y el Cuestionario de Estrategias Motivadas para el Aprendizaje. Los datos recolectados fueron analizados, revelando que para la variable liderazgo educativo, el estilo de liderazgo transformacional presentó el mayor porcentaje de participación entre los docentes, y para la variable autorregulación del aprendizaje, se encontró que los estudiantes sí utilizan estrategias de autorregulación.

Palabras clave: Autorregulación del aprendizaje, liderazgo educativo, teoría de liderazgo transformacional, rendimiento académico

II. Introducción

For students, learning self-regulation means being aware of their own academic goals and the path they need to follow to achieve them. For teachers, sharing the classroom with self-regulated students means becoming a guide and an educational leader. For the school, in addition to achieving high scores on standardized tests, the self-regulation learning process means forming an academic community with high values in terms of human quality. Moreover, for the society, it would mean having citizens capable of making responsible decisions. Thus, learning self-regulation offers multiple benefits and is influenced by diverse factors.

The existing literature on this topic state that various internal and external elements affect students' self-regulation process during their developmental stages, as highlighted by Zimmerman [1]. In this sense, their relationship with the teacher during the teaching and learning process is a part of their development such as giving instructions for assignments, evaluations, and self-regulation. Considering the abovementioned aspect, the need to determine whether teachers' educational leadership exerts any kind of influence on self-regulation of learning in university students emerged. A quantitative nonexperimental methodology was applied, and it focused on a cross-sectional correlational design to achieve this purpose. The Multifactor Leadership Questionnaire (MLQ) and the Motivated Strategies for Learning Questionnaire (MSLQ) were applied, and the data collected for each variable was analyzed in Excel.

A. Leadership in Education

Within the framework of teaching and learning processes, the academic performance and the self-regulation learning (SRL) are placed opposite to educational leadership. This leadership, which has been present in education, is the result of multiple research studies. These studies borrowed leadership theories to explain its development in schools and understand the influence of teachers and school authorities in students' school performance and the success or failure of school organization. Vela et al. [2] conducted a review, and they found several leadership models, namely, ethical, strategic, sustainable, emotional, and servant.

There is another trend that justifies the existence of a type of leadership having characteristics inherent to the school environment; this is distributed leadership, which is distributed among all members of the school and is very different from instructional leadership; it is director-centered where teachers are just followers. Heck and Hallinger [3] believed that the effect of distributed leadership is a collective activity, and it is mediated by means of communicating the mission and objectives and aligning resources to help students. According to this factor, teachers are perceived to be experts to be a part of school improvement.

Contributions to leadership for learning (LfL) are found in recent theories on educational leadership and provided with other leadership theories. In this respect, Heck and Hallinger [3] stated that this emerged in the United States as a reaction to perceived limitations in educational leadership. In addition, these authors explain that LfL focuses on learning, teaching, school programs and on ensuring that all education levels function to facilitate students' learning.

Although leadership exercised at schools is affected by several disciplines, the job of a teacher in the classroom led to the development of educational leadership as a key answer to face current challenges in education. Leadership assumed by teachers requires the contribution of competences inherent to effective leadership that enables the strengthening of meaningful learning by students, instigating change, innovation on educational institutions, and above all the promotion of work teams that make consistency, point of view coherence, motivations, and commitment of its participants possible [4].

In addition, educational leadership is borrowed from other styles wherein the transformational leadership theory emerged focusing on followers' self-esteem. Leithwood and Sun [5] explained that some leadership models such as service and strategic ones have been considered promising for educational leaders. However, the authors highlighted that these models were limited in terms of tests and adjustment to specific situations of the school context. Therefore, they stated that the transformational leadership theory is the most tested and applied model.

According to Ninković and Knežević [6], transformational leadership is focused on increasing the commitment of members of the organization to reach their goals. Within the context of higher education, this aspect is perceived in a teacher capable of providing guidance and accompaniment to the students during their training process. In the same line, Meza and Flores [7] highlighted that a transformational leader should aspire to become an agent of change that influences students to reach the established goals.

According to Leithwood and Sun [5], the transformational leader should foster their followers in aspects related to interest toward continuous achievement and training. A leader also encourages them to go beyond work toward the common good. This leader is charismatic, intellectually encourages followers, and provides inspiration. Additionally, this leader is characterized by showing individual consideration and being psychologically tolerant. This leadership theory states the following:

A relatively small number of leadership behaviors or practices are capable of increasing commitment and effort in the members of the organization toward achieving the objectives of this organization. Values and aspirations of the leader and the followers are reinforced by these practices [5].

B. Learning Self-regulation

Zimmerman explained that SRL refers to the "self-directive processes and self-beliefs that enable learners to transform their mental abilities, such as verbal aptitude, into an academic performance skill, such as writing" [8]. According to Rosário et al. [9], SRL is defined as a process that is active, controlled, and monitored according to the goals that guide learning. Thus, SRL becomes a predictive factor in academic achievement [10].

Considering the definitions provided in other studies such as Boekaerts et al. [11], a wider concept of SRL defines it as a set of strategies that students use to reach their academic objectives, which are related to controlling aspects such as behavior, motivation, cognition, and emotions. In a research focusing on objective guidance, three main aspects were identified: learning, performance, and avoidance. Panadero and Tapia [12] explain that self-regulation has been historically shaped as a process wherein students use several positive strategies that facilitate their learning. However, they stated that there are

students who can hamper their learning by using detrimental strategies such as pretending to be ill or cheating during exams. Therefore, it is essential to promote learning spaces wherein the students feel safe and can achieve their academic objectives. Here is where the role of teachers is crucial because they help create safe learning spaces, thus facilitating SRL [13].

According to Panadero and Tapia [12], Zimmerman's SRL model is one of the most complete models; however, they disagree with some aspects, for example, they mention that some processes are not included in this model. Additionally, they noted that the phases are not properly defined, and finally, they mentioned the absence of several emotional aspects that are included in the Kuhl model.

IIn addition, within the process of learning, self-regulation awareness emerges as a fundamental characteristic from the emotional, cognitive, and behavioral aspects [14]. The concept of self-efficacy then emerges, which is coined by Bandura [15], and explains one of the driving forces to perform tasks successfully. When defining it, the author presents it as perceived self-efficacy, which is a person's belief regarding his or her own ability to organize and perform all necessary actions to achieve the set objectives. In Covarrubias et al.'s words, this aspect refers to an ability inherent to all human beings to judge in terms of skills and the performance required by the environment where they are developed. The relationship between self-efficacy and self-regulation results in maintaining a student's commitment and learning. A higher level of self-efficacy perception, such as trust in abilities, enables individuals to choose difficult challenges, persist despite of difficulties, and seek learning strategies to face frustrating situations. According to Bandura, self-efficacy assessment is conducted through different levels of performance that each person believes they can reach.

Within the context of higher education, the use of SRL strategies is fundamental for students to have control over the management and monitoring of their academic goals According to Cazan there is a close relationship between inappropriate academic development and failure in the use of SRL strategies. Therefore, this factor is considered a variable to prevent academic failure. As previously mentioned, students that self-regulate their learning use SRL strategies. Moreover, one of the objectives set by educational institutions is to have first-year programs that include SRL strategies and complement the transition from middle to higher education. An example of this is evidenced in the results of Acosta et al. research in which an agroecological engineering student managed to make scientific contributions thanks to his self-regulation process. These students manage to balance their learning with activities inherent to their lives [8]. Although being self-regulated is a characteristic of each individual, it is not a natural characteristic. In fact, learning self-regulation involves self-awareness, self-motivation, and behavioral skills.

II. Methodology

The research was performed in the Social Communication and Journalism Program conducted in the municipality of Zipaquirá, Colombia. To do so, a quantitative nonexperimental methodology was applied following a cross-sectional causal correlational design, as the relationship between the two variables was analyzed at a specific point in time.

The study sample was divided in two groups. Group 1 constituted seven teachers (six male and one female) who were in charge of teaching the seven courses in the first semester of 2020. From the initial sample, five teachers participated. In Group 2, intentional sampling was used to select 19 students attending the first semester of the study program during the same period, from which 11 individuals participated.

The instrument Multifactor Leadership Questionnaire (MLQ) 5X Form was applied to Group 1, that instrument obtained a reliability index of 0.97 using Cronbach's Alpha correlation coefficient.

The Motivated Strategies for Learning Questionnaire (MSLQ) was applied to the second group and their reliability index of 0.85 using Cronbach's Alpha correlation coefficient and was translated from English to Spanish and vice versa by Sabogal, Barraza, Hernández y Zapata.

III.Results

The data collected through the Motivated Strategies for Learning Questionnaire Short Form (MSLQ-SF) and the MLQ 5X Short [24] were analyzed in Excel with descriptive statistic. Finally, the chi-square test was applied to assess the possible relationship between the two variables. The self-regulation strategies used by the group of students will be described first and the leadership styles developed by the teachers will be described second.

The results obtained in the MSLQ-SF demonstrated which cognitive and metacognitive strategies were used in Group 2. In this sense, the analysis was performed considering the trial subscales, production, organization, critical thinking, and metacognition regulation. Based on the abovementioned information, it was concluded that the most used strategies were metacognition regulation, followed by trial subscale and production, while the organization and critical thinking strategies presented a similar characteristic.

Furthermore, as already mentioned, the MLQ 5X Form was applied to Group 1. The results showed that this group has a marked tendency toward transformational leadership. However, behaviors and attitudes complementing this style such as those related to transactional and corrective avoidant leadership were found.

The following two hypotheses were formulated to determine whether the leadership styles developed by teachers contribute to strategies of learning self-regulation in students attending the first semester of the Social Communication and Journalism Program at a higher education institution in the municipality of Zipaquirá, Colombia:

Null hypothesis (H0): There is no significant relationship between the leadership styles developed by the teacher and the learning self-regulation strategies of students attending the first semester of the Social Communication and Journalism Program at a higher education institution in the municipality of Zipaquirá, Colombia.

Alternative hypothesis (Ha): There is a significant relationship between the leadership styles developed by the teacher and the learning self-regulation strategies of students attending their first semester of the Social Communication and Journalism Program at a higher education institution of the Zipaquirá municipality, Colombia.

Table 1. self-regulation knowledge strategies students

self-regulation knowledge strategies	
Students	
Significance level	0,05
liberty grades	30
Chi Square	5,3417
P-value	1,0000
critical value	43,7730

The chi-square statistic test is used to assess hypotheses regarding the relationship between two categorical variables. Thus, its verification will be explained in the following order with p-value 0,99999984 and 0,05 significance: variable of learning self-regulation strategies in students and variable of leadership styles in teachers. Excel was used for this verification process.

Table 2. Cognitive and metacognitive strategies professors.

Cognitive and metacognitive strategies	
Professors	
Significance level	0,05
liberty grades	12
Chi Square	125,3321
P-value	5,32E-21
critical value	21,0261

According to the results obtained through the hypothesis confirmation, it was identified that the calculated chi-square is higher than the chi-square of the chi-square distribution table. Therefore, the H0 is rejected, and the Ha is accepted. The existence or nonexistence of a significant relationship between the variables of learning self-regulation in students and leadership styles developed by teachers were sought to be proven by means of this test. It was concluded that there is no significant relationship between the two variables.

Conclusions

Empirical evidence is found on the influence of the teacher–student relationship when referring to academic performance and the effect that multiple external and internal factors produce leading to success or failure. In addition, empirical evidence is found on the importance of knowing students' learning styles and on how the teacher leadership styles intercede in the learning environment. Although a significant relationship between the two variables could not be statistically proven in this study, the findings in each one was used to establish an assessment (1) on how each teacher perceives him or herself as educational leader, the extent of the role, and the effects produced on students and (2) the understanding of their strengths and weaknesses in self-learning.

There is a strong difference between the perceptions the participants have in contrast to the leadership styles that each one develops in his or her role as a teacher, as can be observed in the results obtained in the variable on leadership styles. According to the results, transformational leadership is the most common, followed by transactional and corrective avoidant leadership. Thus, these findings confirm that there is no specific recipe for effective leadership in education or at least in the academic scenario considered in this study. However, these findings identify the strong aspects of Group 1. These circumstances will thus be the contributing factors when deciding on training, courses, or certification programs that teachers undertake.

Another aspect considered from these results is the association between the teacher leadership style and the teaching style deeply rooted in each teacher. A teacher that perceives him or herself as an agent of change and who can influence the academic improvement of his or her students, both being aspects limited to transformational leadership, is more prone to adapt his or her methodology and instructions according to the group and individual learning needs. Therefore, knowing the leadership styles of a teacher would serve him or her, the academic program and the institution as a compass through the teaching and learning processes. In this aspect and based on this scenario, it is clear that teachers have the final word on deciding whether to modify their teaching styles to effectively have an impact on students' learning. In other words, and according to the popular expression, this would be a win–win situation, as when perceiving improvements on academic performance, the decision of adjusting a teacher's style would be made with a higher degree of certainty.

The discussion on the results obtained in relation to cognitive and metacognitive strategies for learning self-regulation starts with the following question: Where is the value of these results for the academic community? The answer to this is accurate; they mark the starting point for the path to academic improvement. If leadership styles work as a compass, then knowing how students learn establishes the path. This study was applied to Group 2 during their first semester, which is the perfect time to establish a path that can have an impact on their academic training and adjust the learning environment.

The abovementioned aspect was used to understand which cognitive and metacognitive self-regulation strategies the participants use and how much they use them when learning. First, the results showed that there is a general average use of trial production, organization, critical thinking, and metacognition regulation strategies. This finding is valuable to prove that there is, in fact, learning self-regulation.

In this sense, another finding that would contribute to the improvement of academic performance and probably to strengthen competences related to self-employment is the results of the critical thinking subscale. Although the scores obtained are within the mean, its usage can be increased inside and outside the classroom. This strategy allows students to apply prior knowledge to new situations for the purposes of solving problems or making decisions.

In Group 1 that participated in this study, the characteristics related to transformational leadership were most common in contrast to the other two styles. In particular, the transformational leadership style has very specific characteristics that foster teaching and learning. These characteristics have been widely studied by Leithwood and Sun [5], thus stating that this is an inspiring and charismatic style wherein interest toward achievement is exhibited. These characteristics were shown when analyzing the data collected through the MLQ 5X Form instrument wherein five teachers stated they have mostly developed these practices. In addition, González (2008) explained that there are higher chances of accepting mistakes and listening and communicating when a teacher exhibits these transformational behaviors.

In turn, Hallinger claimed that there is no accurate formula for transformational leadership style to apply on schools. However, at the same time, he asserted that leadership strategies should be developed considering the schools' needs. Then, what are these needs in the academic scenario that is the focus of this study? According to the evidence found with the MSLQ-SF instrument, an identified need is to increase the use of cognitive and metacognitive strategies in students, which was shown on the average of such strategies. Although these scores prove that participants do self-regulate their learning, its usage can be increased from the classrooms. Paris et al. [13] contributed to this aspect by claiming that the promotion of learning environments in which students feel safe and are capable of achieving academic goals is needed. Here, the role of the teacher is important to foster these environments.

Another aspect limited to the study findings is related to the cognitive and metacognitive strategies found in the SRL performance phase. According to Zimmerman [1], it is vital for students to be concentrated in this phase and make the correct use of the strategies considering two objectives: (1) maintain motivation levels and (2) monitor the development of activities. The value of the evaluation criteria provided by the teacher is important here. If the students ignore these criteria, then they would not be able to compare what they are doing to what has been requested for an assignment. In addition, Panadero and Tapia [14] claimed that during this phase when the assignment is performed, students find it difficult to remain focused and interested. After analyzing and interpreting the results from both variables in the study, the most challenging implication within the context of this study is to focus the teaching and learning processes on the student.

In the same manner, university teaching requires the promotion of comprehensive student training, as stated by Pérez et al. who claimed that the teacher–student relationship in the teaching and learning processes enables comprehensive development. Thus, this development should be SRL related to autonomous learning it should become the competence of learning to learn. This competence goes beyond students' professional training and enables a style of teaching in accordance with the group and individual learning needs. The role of the teacher would assume an effective school leadership, and transformational leadership style would focus on the teacher–student relationship.

In this sense, the implications of this study would obey to changes in the traditional practices in higher education such as the use and application of evaluation rubrics, effective feedback, and collective construction of knowledge through strategies based on students' learning styles.

The study results were limited to Groups 1 and 2, that is, the group of students and teachers who were a part of the first semester of the Social Communication and Journalism Program at a higher education institution in the municipality of Zipaquirá, Colombia. In addition, the fact that no significant relationship was statistically proven between the two variables impeded highlighting whether influence is present. However, the results obtained through the instruments enabled further inquiry into the current situation of the variables at a specific point in time. This factor suggests that, having no evidence of the existence of a relationship, the variables' behavior detected in the instruments confirmed the criteria previously determined by the specialized literature. Such is the case of the transformational leadership style in education and the importance of learning self-regulation in students. In this sense, the results herein presented could not be extrapolated to other populations, and the same instruments cannot be applied to the same samplings through a different academic period, as the variables' characteristics can change over time.

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