

The importance of teachers' leadership in shaping students prepared for the challenges of the technology-driven society of tomorrow

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Abstract.

This paper analyzes the role of teacher leadership and its impact on the development of the skills students need to face the challenges of a technology-driven society of tomorrow. The literature review section presents various studies examining the influence of teacher leadership on students' skill development, while the empirical part presents the results of a survey conducted in a private high school in Bucharest, Romania, where teachers benefit from ongoing training and leadership support. The study results are relevant for teachers, school principals, and other stakeholders in teacher education. Additionally, fostering effective leadership within teaching teams and encouraging student leadership in the classroom can enhance student motivation and resilience, both of which are essential for adapting to the ever-evolving demands of the labor market. This research brings a new perspective on teacher leadership, especially because there are no well-defined leadership programs in schools, and their benefits are not well known by teachers, principals, or other educational actors. The paper proposes a model of educational leadership that combines change management with the development of 21st-century skills and real connection between teachers and students.

Keywords: educational leadership, 21st century skills, innovation in education, change management, private high school.

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Introduction

Many of the current studies focus on the idea that the teacher is the key factor who can determine students' progress in the classroom. Effective teachers are those who act as leaders for their students. Additionally, it is very important for teachers to possess leadership skills, as these are a crucial factor in improving the quality of the educational process [1].

The teacher's leadership is visible during the teaching-learning process. This process includes teaching and learning techniques, the curriculum, the system, and other essential aspects related to the teacher. Learning, on the other hand, is considered a response to a multitude of stimuli that bring about change. Learning occurs when there is a transition from a state of not knowing to knowing regarding teaching methods, classroom management, learning activities, lesson planning, and discipline control by teachers. Thus, teacher leadership represents the characteristics of the teacher's professionalism in the classroom, playing the role of effectively producing and improving students' learning outcomes [2].

Teacher leadership is an element closely related to students' academic performance. A teacher must make continuous efforts to acquire knowledge based on current developments and demands. This is the way to ensure student excellence, and teachers can contribute to improving school performance. For the innovation and development of education, changes are needed among teachers as well as school leaders. Currently, there is a series of policies related to the educational system (academic or extracurricular) that are constantly evolving based on the national needs and demands of society. Teachers' desire to be agents of change is very important within the educational system, as well as in the effort to raise the existing level of leadership and thereby create a more efficient

and effective organization. Therefore, the practice of teacher leadership represents an important subject in the field of national education [3].

Although there are numerous studies that highlight the role of teacher leadership in improving the quality of education, there are currently few studies that directly analyze how teacher leadership practices influence student outcomes. Therefore, this paper aims to fill this gap by presenting the link between teacher leadership competencies and student academic performance, with the aim of identifying a series of practices that have an impact on educational success.

In conclusion, the role of teacher leadership is essential in developing students' skills so they can face the challenges of a technology-driven future society. It is very important that teachers receive training to acquire leadership knowledge and skills in order to support their students and to improve the quality of education and school performance.

Literature review

Teacher leadership and student skill development

A recent study presents the effects of professional development on teachers' leadership skills by exploring the impact of personalized interventions in educational leadership training. The research design was mixed-methods, involving quantitative pre- and post-intervention assessments alongside qualitative data collected through interviews and focus groups. Additionally, participants took part in a professional development program that included interactive workshops, peer collaboration, and reflective practice. All these interventions aimed to develop skills in collaboration, mentoring, decision-making, and educational leadership.

The evaluation of the program's impact highlighted a positive influence on the participants' leadership abilities, with demonstrated progress across multiple dimensions of leadership. The conclusions also emphasized the importance of continuous and targeted professional development for educators in order to strengthen leadership capacity and promote a collaborative and innovative educational environment [4].

Didactic leadership is currently focused on the practice of collaboration among teachers, which has the potential to address student issues such as low critical thinking skills. A study conducted in 2022 examined the effect of teacher collaboration on the critical thinking abilities of students in educational management, as well as the retention of these skills. The study involved 60 students; half were taught using the teacher collaboration method, while the other half were taught through individual lecturing. Ten of the students from the group of 30 who benefited from the collaborative teaching method were interviewed as part of the investigation. The results showed that the teacher collaboration method had a positive and significant effect on students' critical thinking abilities compared to the alternative method. Additionally, students taught by teachers who collaborated demonstrated better retention of these skills. The students mentioned that the method helped them improve their collaboration skills, awareness, and metacognitive abilities during the learning process [5].

Currently, there are numerous theories analyzing leadership, its associated characteristics, functions, and leadership styles. A leader must create work conditions that allow creativity, learning, and efficiency. An analysis of theories related to the impact of leadership on creativity was conducted to investigate the influence of academic leadership on students. The main objective of the research was to use scientific procedures and rigorous methodology; it also analyzed and identified types of leadership that students consider useful in shaping creative attitudes. The research hypothesis was that the more active and supportive the leadership is of creativity development, the higher the level of creativity among students. To test this objective, group tests were conducted on 232 students from the University of Szczecin, the West Pomeranian University of Technology, and the Academy of Arts.

The results showed that effective academic leadership has a significant impact on the development of students' creativity. It also highlighted that students value educators who provide emotional support, continuous feedback, and understanding in difficult situations. Furthermore, the authors concluded that the leadership qualities of academic staff play an important role in shaping valuable human capital for the economic development of society [6].

Despite the existence of several studies supporting the importance of teacher leadership in developing creative skills, critical thinking abilities, and collaboration skills—all contributing to achieving good student outcomes—there is a gap in the specialized literature regarding the influence of teacher leadership on the development of skills necessary for students to face the challenges of a technology-driven future society.

Methodology

The data used in this study were collected through a survey method, with the instrument being a questionnaire created in digital format and distributed to teachers via email and social media. The questionnaire consisted of 14 questions. The first 4 questions aimed to collect data regarding the teachers' age, seniority, education, and their position within the organization where they work, while the remaining 10 questions—both open-ended and closed-ended—focused on gathering teachers' data and opinions about the impact of leadership on the development of skills necessary for students to face challenges in a technology-driven society.

The educators who took part in the study had benefited from leadership training courses, and the organization has had a leadership program operating for 10 years. Therefore, the teachers' responses are also based on their experience, making them relevant for understanding the importance of teacher leadership in developing students' skills.

The hypothesis underlying this study was that effective teacher leadership can encourage student leadership in the classroom, thereby increasing their motivation and resilience, helping students adapt to the complex demands of the labor market in a technology-driven society.

Results and further discussions

Data were collected from 25 pre-university teachers, specifically from a private high school in Bucharest, Romania. According to the teachers' responses, most of them—14 in total—are middle school teachers. Seven teachers teach at the high school level, and the remaining four teach in primary education.

Regarding the teachers' ages, eight fall into the age group up to 25 years, eleven are between 26 and 35 years old, and the remaining six are over 35 years old. Therefore, the teachers are relatively young, which is beneficial because their age helps them be open to learning, motivated, and more flexible. Concerning the teachers' education, most—15 of them—hold master's degrees, eight have bachelor's degrees, and two hold doctoral degrees. Thus, the educators have received both initial and ongoing training, possessing the knowledge and skills necessary for their roles.

Next, the teachers were asked about their actual teaching experience. Twenty-eight percent of the teachers fall into the 0-5 years category, 48% into the 6-10 years category, and the remaining 24% have over 10 years of teaching experience. Therefore, most teachers do not have very long seniority, which aligns with their relatively young age.

Following that, the next questions focused on the teachers' opinions *regarding the school's leadership program, its impact on them and their students*, the results of the program, its strengths and weaknesses, as well as other aspects that could help formulate conclusions about the impact of effective teacher leadership on the development of students' skills. It should also be noted that, besides the leadership program dedicated to teachers, the school has leadership programs aimed at students and other projects focused on developing leadership skills among both teachers and students.

The first question in the questionnaire referred to *the impact of the leadership program on the teachers' professional activity*. Most teachers—60%—stated that the school's leadership program has a positive impact on their teaching activity. 27% of the teachers said the leadership program has a moderate influence on their work, and 12% said they could not assess it. Therefore, although most teachers consider the leadership program to have a positive impact on their activity, the lack of clear tools or benchmarks to measure this impact makes it difficult for them to evaluate how leadership influences their work. Noor et al. also support the idea that transformational leadership is effective for the professional growth of teaching staff and argue that leadership training programs should focus on this style to further aid the development and efficiency of teachers [7].

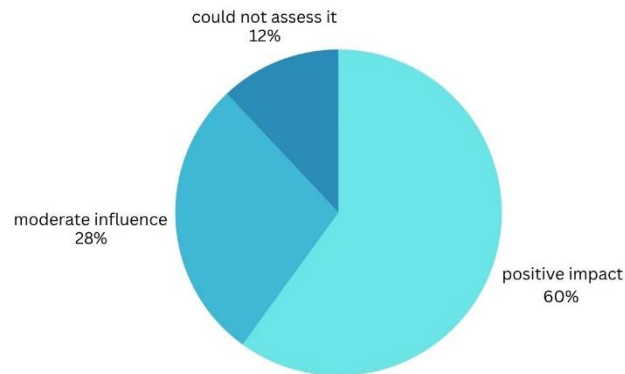


Figure 1: The impact of the leadership program on the teachers' professional activity

Source: Author's own contribution

To analyze in more detail *the influence of the leadership program on how teachers interact with students*, the next question was open-ended and asked teachers to provide concrete examples of how they observed the program's impact on classroom interactions. The teachers' responses varied but shared a common theme regarding the improvement of teacher-student relationships, increased mutual trust, and open communication. Additionally, some educators mentioned that the leadership program helped them become more attentive to students' needs, adopt a more empathetic attitude, and place greater emphasis on student collaboration.

Regarding the examples provided by the teachers, they mentioned *offering regular constructive feedback, involving students in decision-making about classroom and extracurricular activities, team projects, volunteer actions, and mentoring projects among students*. All these activities were carried out by teachers following the training they received in the leadership program and were also designed to help students develop leadership skills. Authors of a study aimed at examining the relationships between transformational leadership in universities and student learning outcomes, as well as student engagement and perceptions of teacher credibility, concluded that all three components of transformational leadership in the classroom are moderately to strongly associated with all related variables [8].

Next, teachers were asked to *what extent they believe teacher leadership contributes to the development of skills necessary for students in a technology-driven society*. 64% of the teachers consider that leadership can greatly influence the development of these skills, 20% chose the moderate influence option, and 16% chose minimal influence. None of the teachers selected the option indicating no influence. Therefore, the majority of teachers believe their leadership can contribute to developing the skills students need in a technology-driven society. Although teachers support this idea, there are no studies in the specialized literature that confirm it or provide concrete examples from schools where this occurs.

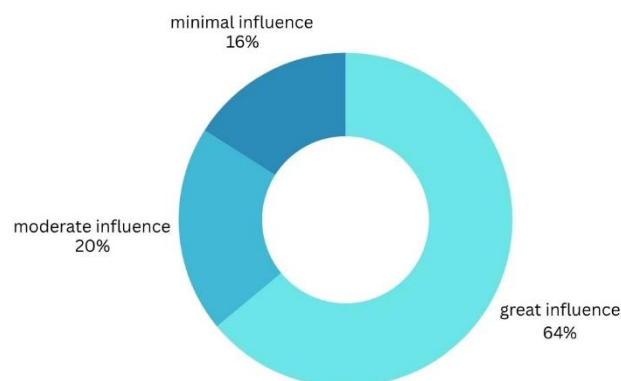


Figure 2: Teachers' perceptions of the extent to which teacher leadership contributes to developing students' skills for a technology-driven society.

Source: Author's own contribution

Regarding the *increased motivation and engagement of students following teachers' participation in the leadership program*, most teachers—72%—reported observing positive changes among students. One teacher (4%) said they did not observe any changes, and 24% said they had not paid attention to this aspect. These data support the hypothesis that teacher leadership plays an important role in increasing student motivation and engagement, but it should be noted that these changes may also result from other factors, as there are no tools to precisely measure the impact of leadership on students. The specialized literature confirms that instructional, communicative, and participative leadership by school leaders has a significant effect on increasing student motivation, from both teachers' and students' perspectives [9].

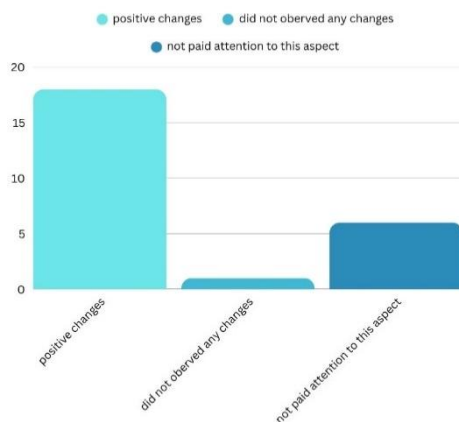


Figure 3: Teachers' perceptions of changes in students' motivation and engagement following participation in the teacher leadership program.

Source: Author's own contribution

Next, participants were asked which skills developed in students were most visible as a result of their participation in leadership programs. The teachers' responses highlighted a series of competencies that can be useful for students in today's society. The most important skills identified were teamwork, critical thinking, decision-making ability, and increased self-confidence. Therefore, leadership programs for students, if implemented and conducted consistently and properly, can contribute to the development of skills that will help students face the challenges of tomorrow's society. In the specialized literature, there are numerous studies emphasizing the importance of teamwork in supporting the development of communication, collaboration, and critical thinking skills. Rodríguez-Sabiote et al. argue that a higher level of teamwork can contribute to the strong development of critical thinking, while effective collaboration and increased motivation can also help [10].

To analyze in more detail the impact of leadership activities on *preparing students to face the challenges of a continuously evolving and digitalizing labor market*, teachers were asked to select one of the response options where 5 meant "very much" and 1 meant "not at all." Most teachers, specifically 72%, chose option 4, indicating a strong influence. Another 12% of teachers selected the middle option, representing a significant influence, and 16% chose the minimal influence option.

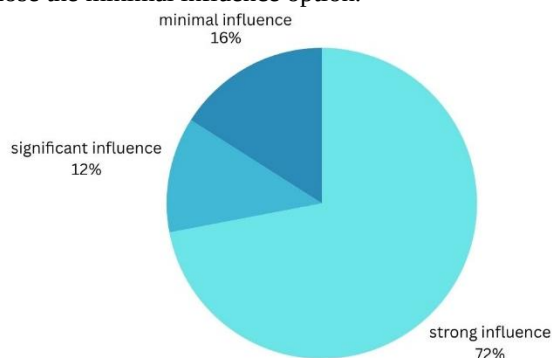


Figure 4: Teachers' perceptions of the impact of leadership activities on students' preparation for the challenges of a digital and continuously evolving labor market

Source: Author's own contribution

Thus, the majority of educators believe that leadership activities contribute to preparing students to face labor market challenges. It is positive that teachers are aware of this, as they can then place more emphasis on their own development and on that of students within leadership programs, to achieve the desired outcomes. This view is also supported by Leithwood & Sun, who argue that transformational leadership in schools has moderate positive effects on a wide range of relevant school conditions and small but significant positive effects on student academic performance [11].

Regarding *the effectiveness of the leadership program at the high school*, teachers were asked to identify its strengths. Their answers were varied, but many responses were similar. Among the most important and relevant were *the clear structure of the program, active teacher involvement in decision-making, transparency in decision processes, continuous training and opportunities for advancement within the hierarchy, support and understanding from leaders, a positive organizational culture, effective collaboration with colleagues and leaders, as well as the practical nature of activities and the absence of pressure from superiors*. Many teachers also mentioned that they feel safe within the leadership team and comfortable asking for help when needed. Thus, the leadership program for teachers has a solid foundation and is perceived as a valuable tool by teaching staff to support their professional development and improve the educational process. Such programs can also help educators in difficult situations when they need support from the team or management, thus helping to prevent burnout.

As for *improvements needed for the leadership program dedicated to teachers*, these include continuously adapting content to the real needs of both teachers and students, involving experts from outside the school, introducing tools to evaluate the impact of leadership on classroom activities, organizing feedback sessions, and allocating clearer time slots in the school schedule. Therefore, teachers see the leadership program as a genuine development opportunity and wish to benefit as much as possible from its positive aspects.

The last two questions addressed the *teacher-student relationship in the context of leadership*. Teachers were asked to what extent they believe their own leadership style inspires students to take on leadership roles. Most teachers—56%—chose "much," 24% chose "very much," and the rest (20%) chose "a little." Notably, no teacher selected "not at all." Thus, teachers serve as role models for their students in terms of leadership, playing a very important role in shaping students' leadership profiles. Ghazali et al. conclude in a study conducted on a sample of 355 teachers that both teacher and student leadership are at very high levels. The study also confirms that teachers' leadership behavior positively influences the development of students' leadership skills in residential schools [12].

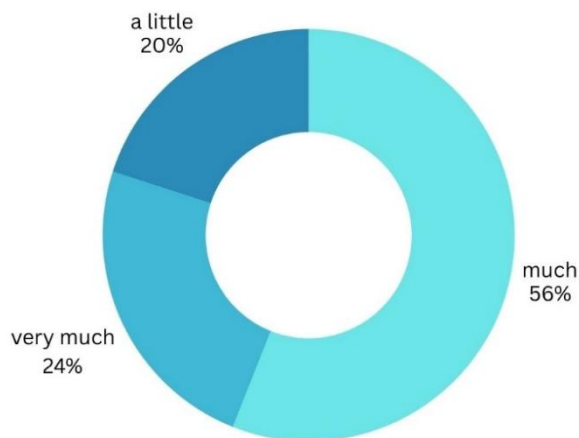


Figure 4: Teachers' perceptions of how their own leadership style inspires students to take on leadership roles

Source: Author's own contribution

Teachers' perceptions of how their own leadership style inspires students to take on leadership roles.

The final question asked for *concrete examples where teachers' leadership had a positive impact on a student or a class of students*. A few teachers gave short and not very detailed responses, but most provided concrete examples and sufficiently detailed explanations. First, teachers reported observing certain skills that students adopted from them, such as decision-making and teamwork, especially during group projects or extracurricular activities. Other examples included situations where students took initiative and organized activities in which they assumed leadership roles (school projects or volunteer activities). One participant mentioned a student inspired by the

teacher's leadership who mobilized peers to implement an ecological project at school. Another teacher noted that, following a coaching approach with students, they observed increased self-confidence and involvement, particularly among introverted students. Additionally, many educators reported observing greater student engagement and initiatives to participate in various competitions, fairs, or humanitarian campaigns. Therefore, all examples provided by teachers reflect student leadership nurtured and encouraged by the model set by teachers. In conclusion, teacher leadership can have a direct and significant impact not only on students' skills but also on their behavior.

Conclusion

Therefore, the existence of leadership programs for both teachers and students provides a favorable framework for developing leadership skills and other related competencies, offering students better preparation for a technology-driven society.

Moreover, according to the teachers' responses, although most have observed a positive impact of the leadership program on students, the lack of clear evaluation tools makes it difficult to precisely measure the direct or indirect effects of the leadership program on students. Nevertheless, educators agree that improvements in the teacher-student relationship are evident, especially regarding communication, collaboration, and student involvement in decision-making.

The large number of teachers who consider that leadership has a major impact on the development of skills necessary for students to face the challenges of a technology-driven society supports the importance of implementing such programs at a national level and beyond. Teachers also appreciated the practical, collaborative, and safe nature of the leadership program, as well as the constant support from the administration. These aspects can bring real benefits in maintaining teachers' well-being and preventing burnout, thus leading to higher performance for both students and teachers.

Last but not least, educators stated that leadership programs help both them and their students develop skills such as critical thinking, decision-making, teamwork, and self-confidence, all of which are essential in preparing students for the labor market.

Therefore, the research results highlight that *teacher leadership plays a crucial role in developing student leadership and forming the essential skills needed for students to face the challenges of a technology-driven society*. However, such programs must exist in all schools, with teachers and students benefiting from activities designed to help them grow in this direction.

Last but not least, the limitations of this study must also be acknowledged. The most significant of these is the small number of respondents and the fact that all educators teach at the same school. Additionally, the use of self-reported data may introduce errors, as such data can be overly subjective, which may impact the generalizability of the results.

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