

Transformational leadership in student training: Prospects and challenges

Hellen Vadillo-Dionicio¹, Diana Mucha², Alberto Palacios³, Angelica Medina⁴, Pilar Lucio-Ponce⁵

¹ Universidad Nacional Mayor de San Marcos, Peru.

Email: edith.vadillo@unmsm.edu.pe

ORCID: 0000-0001-7164-6923

² Universidad Nacional Mayor de San Marcos, Peru.

Email: diana.muchal@unmsm.edu.pe

ORCID: 0000-0001-6844-7691

³ Universidad Nacional Mayor de San Marcos, Peru.

Email: alberto.palacios@unmsm.edu.pe

ORCID: 0000-0003-1008-1791

⁴ Universidad Nacional Mayor de San Marcos, Peru.

Email: angelica.medina@posgradounmsm.edu.pe

ORCID: 0009-0006-1737-5118

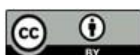
⁵ Universidad Nacional Mayor de San Marcos, Peru.

Email: pilar.lucio@unmsm.edu.pe

ORCID: 0000-0003-0199-9015

Abstract: Transformational leadership has emerged as a key model for training university students, promoting essential competencies for personal, academic, and professional development within transforming educational contexts. This study analyzed research published in indexed journals between 2019 and 2024 to identify perspectives and challenges associated with transformational leadership's influence on student education. A documentary-type methodology with a descriptive qualitative approach was used under the PRISMA 2020 protocol to analyze articles extracted from databases such as Scopus, SciELO, and Redalyc. The results reveal that transformational leadership positively impacts self-efficacy, teamwork, social responsibility, and gender equality, while promoting academic commitment and motivation. Mexico, Spain, and China have the greatest scientific production, reflecting different educational priorities. Likewise, Scopus concentrates most of the high-impact publications, while SciELO and Redalyc provide significant regional context. There is a high prevalence of transformational leadership, with consistent effects in different educational contexts. However, limitations such as the impostor phenomenon in STEM fields were also identified. In conclusion, transformational leadership is an effective tool for comprehensive student training. However, its implementation requires contextual adaptation, complementary strategies such as coaching, and an approach that considers individual psychosocial factors. Promoting it consistently can contribute to educational transformation toward more inclusive, innovative, and sustainable models.

Keywords: Transformational leadership; university education; student self-efficacy; educational coaching; higher education; pedagogical innovation; inclusion.



1. Introduction

In the current global environment, which is characterized by intensified competition due to economic globalization and the necessity of management aimed at developing human capital, transformational leadership has become increasingly relevant in educational processes. Defined by its ability to motivate, inspire, and stimulate the personal and professional growth of individuals, this type of leadership has become a key component of student training, especially in contexts where innovation, adaptability, and sustainability are essential (Chen et al., 2022). The dynamic nature of transformational leadership makes it an effective response to the challenges facing educational systems in an ever-changing world.

In this framework, promoting innovative behavior is one of transformational leadership's main strengths. It promotes not only technical skills but also transversal competencies, such as creativity, critical thinking, and the ability to lead change processes, in students. Research indicates that these attributes, driven by teacher leadership, strengthen professional competitiveness and improve training processes (Lee & Wong, 2017). Indeed, transformational leadership operates as both a motivational strategy and a structural mechanism that shapes institutional culture toward excellence and sustained development.

However, in regions such as Latin America, there is a cultural tendency to favor male leadership, which restricts diversity and limits equitable participation in developing transformative educational models. This sociocultural configuration poses substantial challenges to student training by reducing the possibilities of identifying with inclusive and representative leadership. In this context, transformational leadership is presented as a model of pedagogical innovation and a tool for social transformation that breaks down gender barriers and consolidates equitable, diverse, and just educational processes (Díaz, 2020).

At the national level, this issue is especially relevant given the need to implement modern educational management models that can meet the demands of the socio-productive environment. As a key institution in training citizens and professionals, the university requires academic leaders with a transformational vision who promote research, critical thinking, and social responsibility. The connection between leadership and educational quality is crucial for renewing traditional structures linking the state, the university, and society and promoting higher education oriented toward transformation and impact (Reyna et al., 2021).

Likewise, there is a recognized need to adopt a comprehensive methodological approach to studying this topic, combining quantitative and qualitative strategies to capture the complexity of the phenomenon and evaluate its impact at different levels and in different educational contexts. This approach considers the interactions between teachers and students as well as the tangible results in terms of motivation, academic performance, and personal development.

Various recent studies have approached the subject from different perspectives. Gamarra (2024), for example, conducted a systematic review of studies on pedagogical innovation and community participation, highlighting the influence of managerial leadership on improving educational quality and school community cohesion. Pérez et al. (2023), on the other hand, examined teacher leadership in the Peruvian university context, underscoring its impact on educational quality and educators' ethical commitment. Quiñones and Espíritu-Álvarez (2023) conducted a systematic literature review on transformational leadership among undergraduate and graduate students using the PRISMA 2020 methodology. They found greater scientific production in the United States and a predominance of quantitative approaches and correlational designs. Luna (2023) examined Colombian institutions, emphasizing the importance of effective communication, idealized influence, and personal recognition. Olaya (2024) investigated the effects of transformational leadership on teaching and learning processes in the post-pandemic era, identifying positive impacts on motivation and learning quality.

2. Methodology

This study employs a documentary research approach based on collecting, critically analyzing, and interpreting information from secondary sources such as scientific articles, specialized books, academic reports, and indexed databases (Peña, 2022). This approach allows us to systematize existing knowledge and establish conceptual and empirical relationships regarding the influence of transformational leadership on student education.

The study's qualitative, descriptive design aims to interpret and contextualize the available scientific evidence on the subject. Through this approach, recurrent patterns, analytical categories, and significant elements are identified in the reviewed studies without resorting to direct quantification processes. The goal is to deeply understand the factors associated with transformational leadership from various research perspectives by identifying challenges, contributions, and theoretical gaps.

To ensure transparency, rigor, and reproducibility, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) 2020 model was applied (Page et al., 2021). This standardized protocol guided the identification, selection, critical evaluation, and synthesis of the included studies, reducing the risk of bias and enabling robust conclusions based on verifiable evidence.

The inclusion criteria were as follows: (a) original scientific articles published in indexed journals, (b) publications between 2019 and 2024, (c) studies available in Spanish or English, and (d) research that explicitly addresses transformational leadership in educational contexts, particularly in the training of university students. Studies with quantitative, correlational, or mixed approaches were prioritized due to their ability to provide structured data on the prevalence and impact of the phenomenon.

Recognized academic databases, such as SCOPUS, SciELO, and Redalyc, which are renowned for their prestige and coverage in the educational and social fields, were selected as search sources. Using these databases guaranteed the relevance, methodological quality, and scientific visibility of the retrieved articles. The search process used Boolean operators and specific controlled terms for each repository. In SCOPUS, the formula was "transformational AND leadership AND in AND student." In SciELO, the terms were: "transformational leadership" and "students." In Redalyc, the terms were: "transformational leadership in students."

Flowchart

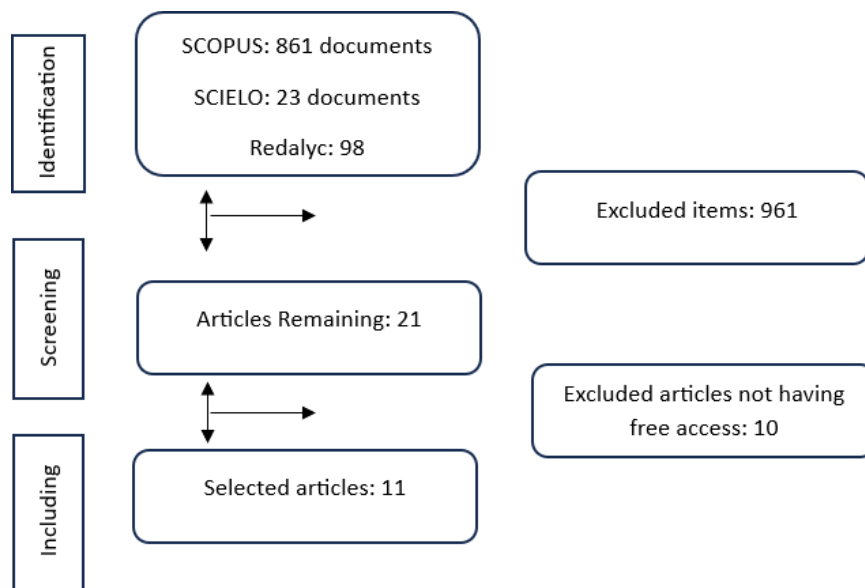


Figure 1. Item selection flowchart

3. Results

Findings from the systematic review show that transformational leadership positively influences the training of university students, especially between 2019 and 2024. The analyzed research highlights significant impacts on the development of soft skills, strengthening of academic commitment, promotion of gender equity, improvement of performance in collaborative teams, and consolidation of professional profiles with an ethical and social orientation.

Overall, nine main dimensions of transformational leadership impact were identified. These include improving student commitment and self-efficacy, strengthening teamwork, and promoting gender equity, particularly in undergraduate and graduate programs. Additionally, specific effects were identified in contexts such as physical education, entrepreneurial training, and STEM career teaching, where the impostor phenomenon represents a limiting factor.

Table 1. Summary of influences of transformational leadership on the training of university students (2019–2024)

Dimension	Main findings
Commitment and self-efficacy	Increased student engagement and self-efficacy
Teamwork and collaborative performance	Development of competencies for collaborative work
Inclusion and gender equity	Overcoming gender barriers and promoting inclusion
Academic performance and educational structure	Structured improvements in the educational process
Motivation and enjoyment	Increased motivation and participation in physical activities
Social entrepreneurship	Promotion of the entrepreneurial profile with social responsibility
Ethical competencies and practical leadership	Promoting ethical leadership through training programmes
Coaching in specific contexts	Reinforcement of practical skills with coaching strategies
Impostor phenomenon as a limiter	Limitations in leadership due to perception of imposture

Table 1 summarizes the main ways transformational leadership influences student training. It shows improvements in self-efficacy, gender equity, and practical competencies. This summary helps us identify key areas for educational intervention.

Table 2. Prevalence of transformational leadership in university students (2019–2024)

Authors	Prevalence (%)
Zuo et al. (2024)	78
Salcedo et al. (2024)	85
Gao et al. (2024)	72
Sánchez-García et al. (2024)	88
Domínguez-Soto et al. (2023)	67
Álava-Atiencie & Quinde-Lituma (2023)	80
Díaz Gómez et al. (2019)	90
Heredia Llatas & Angulo Corcuera (2020)	85
Díaz Gómez (2020)	88

Table 2 presents the levels of prevalence of transformational leadership according to the authors analyzed. Most studies report values above 80%, which indicates a significant and consistent implementation of the model in diverse educational contexts.

Figure 1. Prevalence of transformational leadership in university students according to peer-reviewed studies (2019–2024).

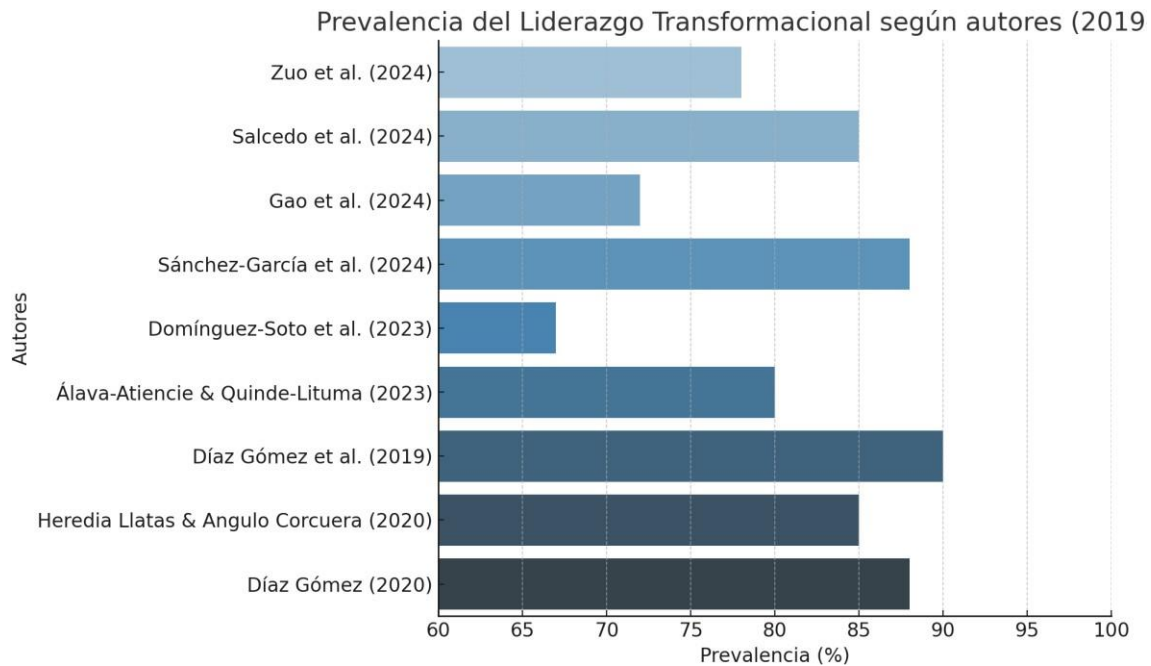


Figure 1 shows the prevalence levels reported in Table 2. A high concentration is observed in the range of 80 to 90%, consolidating transformational leadership as a highly implemented and effective practice in university environments.

4. Discussion

In line with the study's primary objective of analyzing research published in indexed journals on the impact of transformational leadership on student training from 2019 to 2024, the findings reveal a clear trend: this leadership style positively and significantly influences the university training process. It promotes essential skills such as self-efficacy, teamwork, social responsibility, and inclusion—fundamental pillars in constructing modern, resilient educational environments.

Studies such as Zuo et al. (2024) research in China demonstrate that transformational leadership increases academic commitment and self-efficacy perceptions, creating optimal conditions for autonomous learning. Similarly, Salcedo et al. (2024) research in Latin America reinforces these findings, demonstrating that transformational leadership strengthens collaboration and interpersonal relationships in hybrid environments, which are becoming increasingly common in post-pandemic education.

Álava-Atiencie and Quinde-Lituma (2023) also emphasize that transformational leadership fosters the development of social entrepreneurial profiles by integrating ethical values and community commitment. However, studies such as that of Domínguez-Soto et al. (2023) point out the persistence of psychological barriers, such as the imposter phenomenon, that affect the internalization of leadership among STEM students, thereby limiting its implementation. These studies demonstrate that although transformational leadership has great potential, its effectiveness depends on individual, disciplinary, and contextual variables.

Similarly, research by Luna (2023) and Olaya (2024) emphasizes its role in facilitating institutional change, particularly in crisis-stricken contexts like the one caused by the SARS-CoV-2 pandemic. In these scenarios, transformational leadership acts on individuals' competencies and strengthens organizational cohesion, promoting adaptive pedagogical processes. Thus, transformational leadership emerges as a comprehensive model affecting both personal development and institutional transformation.

In Mexico, transformational leadership is associated with educational initiatives that aim to close gender gaps and promote professional ethics, as demonstrated by the studies of Díaz Gómez et al. (2019), particularly through the

FORTES program. In Spain, research focuses on contexts such as physical education, where transformational leadership enhances student motivation (Sánchez-García et al., 2024). China's research aims to strengthen academic leadership in professional education (Zuo et al., 2024) in an increasingly competitive, results-oriented environment.

Despite having fewer studies, countries such as Canada and Ethiopia offer relevant perspectives. Regla and Regehr (2024) analyze how transformational leadership promotes the emotional well-being of students at multi-campus universities during the post-pandemic period. Meanwhile, Gao et al. (2024) associate it with enhanced academic performance in grassroots school settings in Africa. Finally, Ecuador and Peru stand out for their research aimed at social development and ethical training through tools such as coaching (Heredia Llatas & Angulo Corcuera, 2020).

These findings demonstrate that although scientific production is geographically dispersed, national priorities such as educational innovation, gender equity, and institutional resilience shape the type of leadership promoted. In the future, expanding research coverage in underrepresented regions will be necessary to achieve a more global and inclusive understanding.

Due to its multidisciplinary nature and international scope, Scopus houses the most influential studies, including research on self-efficacy, gender equity, and academic achievement (Zuo et al., 2024; Gao et al., 2024). This platform has made the impact of transformational leadership visible in multiple educational contexts with scientific rigor and high bibliometric impact.

SciELO, for its part, acts as a key platform for Latin American research. Studies such as those by Heredia Llatas and Angulo Corcuera (2020) and Díaz Gómez (2020) — which focus on developing competencies through coaching — reflect the region's educational systems' concerns and potential. Finally, Redalyc provides open access to studies on leadership in social entrepreneurship and educational transformation, which is particularly important in countries with less international visibility.

This segmentation demonstrates the importance of balancing global visibility with contextual relevance to integrate knowledge from diverse educational realities without compromising quality or applicability.

The studies reveal consistently high figures on the prevalence of transformational leadership practices in educational contexts, ranging between 72% and 90%. These figures reaffirm the effectiveness and progressive adoption of this leadership model in educational institutions of various levels and regions.

Zuo et al. (2024) report a 78% improvement in self-efficacy and commitment in professional education, and Sánchez-García et al. (2024) indicate that 88% of students are more motivated when taught by transformational leaders. The FORTES program in Mexico achieves even higher results, reaching 90%, which highlights its impact on strengthening transformational competencies (Díaz Gómez et al., 2019).

However, certain contexts present resistance. The imposter phenomenon, identified in 67% of STEM students (Domínguez-Soto et al., 2023), hinders the internalization of leadership, underscoring the necessity of more comprehensive psychoeducational interventions. Similarly, coaching strategies have been shown to be effective complementary tools, increasing competence levels from 65% to 85% among nursing students (Heredia Llatas & Angulo Corcuera, 2020).

5. Conclusions

1. An analysis of scientific literature from 2019 to 2024 confirms that transformational leadership positively and significantly impacts the training of university students, particularly in developing key skills such as self-efficacy, teamwork, and social responsibility. These competencies strengthen academic performance and prepare students to face the challenges of a changing social and professional environment in an ethical and collaborative manner.
2. The countries leading scientific production on this topic are Mexico, Spain, and China. These countries have different lines of priority. Mexico focuses its studies on gender equality and ethical leadership. Spain emphasizes student motivation and participation. China focuses on self-efficacy and commitment in professional contexts. However, the limited representation of other countries underscores the need to promote research in less-explored geographical contexts to broaden the global understanding of this phenomenon.
3. Most relevant scientific literature is indexed in the Scopus database, reflecting its predominance as a high-impact, international repository. Nevertheless, platforms like SciELO and Redalyc are crucial for raising the visibility of regional studies focusing on Latin America, especially on subjects such as

coaching, social entrepreneurship, and educational transformation. This distribution highlights the importance of balancing international visibility with contextual relevance.

4. Transformational leadership practices are highly prevalent in the analyzed educational contexts, impacting variables such as student engagement, academic motivation, and the development of transformational competencies by 72% to 90%. Despite these encouraging results, implementing transformational leadership practices faces significant challenges. On the one hand, there is the negative influence of psychological factors, such as the impostor phenomenon. On the other hand, there is the need for complementary strategies, such as coaching, to reinforce its effectiveness. Therefore, it is concluded that this leadership model must be applied in a contextualized, adaptive, and comprehensive way to guarantee its sustainability and effectiveness in different educational settings.

References

1. Álava-Atencio, N. G., & Quinde-Lituma, M. E. (2023). Explanatory analysis of transformational leadership in the social entrepreneurial profile of university students. *Higher Education Training Journal*, 16(2), 49–60.
2. Chen, C., Ding, X., & Li, J. (2022). Transformational Leadership and Employee Job Satisfaction: The Mediating Role of Employee Relations Climate and the Moderating Role of Subordinate Gender. *International Journal of Environmental Research and Public Health*, 19(1), 233. <https://doi.org/10.3390/ijerph19010233>
3. Díaz Gómez, E. R. (2020). Transformational Leadership and Gender Equity: The Case of Graduate Students. *Revista Universidad y Empresa*.
4. Díaz Gómez, E. R., Espinosa Garza, J. L., & Peterson Rodríguez, H. X. (2019). An approach to the assessment of transformational leadership competencies among undergraduate students. *Center for Technical and Higher Education Studies*.
5. Domínguez-Soto, C., Labajo, V., & Labrador-Fernández, J. (2023). The relationship between impostor phenomenon and transformational leadership among STEM students. *Current Psychology*, 42(13), 11195–11206.
6. Gamarra, J. C. (2024). Liderazgo directivo en la educación: Una revisión literaria. *Horizontes. Revista De Investigación En Ciencias De La Educación*, 8(34), 1897–1912. <https://doi.org/10.33996/revistahorizontes.v8i34.841>
7. Gao, C., Jalid, S., Lianyu, C., & Tadesse, E. (2024). Integrated leadership for coherent school improvement in Ethiopia: The moderating role of transformational leadership on the relationship between instructional leadership and student academic performance. *Psychology in the Schools*, 61(2), 455–474.
8. Heredia Llatas, F. D., & Angulo Corcuera, C. A. (2020). Liderazgo transformacional y equidad de género: El caso de estudiantes de posgrado. *Revista Universidad y Sociedad*, 12(4), 73–83.
9. Lee, C., & Wong, C.-S. (2017). The effect of team emotional intelligence on team process and effectiveness. *Journal of Management & Organization*. <https://doi.org/10.1017/jmo.2017.34>
10. Luna, J. F. (2023). Liderazgo transformacional en escuelas y colegios de Colombia. *Institución Educativa Técnica en Sistemas Santiago San Sebastián Macizo Colombiano*. <https://ciencialatina.org/index.php/cienciala/article/view/8255/12437>
11. Olaya Ahumada, M. E. (2024). Liderazgo transformacional y su influencia en las instituciones educativas. *Repositorio Institucional*. <https://hdl.handle.net/20.500.12692/140039>
12. Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Lin, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., McGuinness, L. A., ... & Fernández, S. A. (2021). Declaración PRISMA 2020: una guía actualizada para la publicación de revisiones sistemáticas. *Revista Española de Cardiología*, 74(9), 790–799. <https://doi.org/10.1016/j.recesp.2021.07.010>
13. Peña Vera, T. (2022). Etapas del análisis de la información documental. *Revista Interamericana de Bibliotecología*, 45(3), 1–7. <https://doi.org/10.17533/udea.rib.v45n3e340545>
14. Pérez, R., Palacios, R., Ramírez, M. T., & Conejo, A. L. G. R. (2023). Liderazgo docente universitario en los modelos del sistema gestión universitario, explorando enfoques. *Horizontes Revista de Investigación en Ciencias de la Educación*, 7(30), 1989–2005. <https://doi.org/10.33996/revistahorizontes.v7i30.644>
15. Quiñones, L., & Espíritu-Álvarez, F. (2023). Una revisión de la investigación empírica sobre liderazgo transformacional en universitarios (2014-2023). *Propósitos y Representaciones*, 11(3), e1871. <https://doi.org/10.20511/pyr2023.v11n3.1871>
16. Regla, N. O., & Regehr, C. (2024). The benefits of transformational leadership in addressing workplace emotions post-COVID-19 at a large multi-campus university. *Discover Psychology*, 4(1), 137.
17. Reyna, A. M., Montes Ninaquispe, J. C., & Pérez Arboleda, P. A. (2021). Liderazgo transformacional: un aporte a la motivación del estudiante universitario. *UCV HACER: Revista de Investigación y Cultura*, 10(3), 1–21. <https://doi.org/10.2305-8552>
18. Salcedo, J., Gandolfi, F., & Garza, A. (2024). Leadership in hybrid work teams: Impact of transformational and authentic leadership on relationships and task performance in student teams. *Bangladesh Multidisciplinary Scientific Research Journal*, 9(5), 1–9.

19. Sánchez-García, C., Morales-Sánchez, V., Reigal, R. E., & Hernández-Mendo, A. (2024). Relationships between teachers' transformational leadership and optimal experiences of adolescents in physical education: A systematic review. *Journal of Sport Psychology Notebooks*, 24(3), 1–18.
20. Zuo, X., Omar, I. M., & Lee, Kansas City. (2024). The influence of teachers' transformational leadership on student engagement: Uncovering the mediating role of self-efficacy in Chinese higher vocational education. *Malaysian Online Journal of Educational Management*, 12(4), 78–94.