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Transformational Leadership of Lecturers: Exploring the Role of Self-Efficacy and Proactive Student Engagement at Universities in the Mekong Delta Region, Vietnam

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ABSTRACT

This study examines the relationship between transformational leadership of lecturers and student engagement at universities in the Mekong Delta region, with a focus on the mediating role of self-efficacy. Based on Bandura's social cognitive theory, data were collected from 2,615 students across five universities through a cross-sectional quantitative research approach. The results showed that the leadership leadership has a positive influence on the participation of students and their own ability. The student's own capacity acts as the operator, strengthening the relationship between the lecturer's leadership and the participation of students. The structural equation model (SEM) is used to confirm theoretical relationships. The limitations related to cultural characteristics and representative characteristics of the sample are proposed for future research. These findings provide practical insights for educational managers and educational experts, recommend strengthening lecturer leadership measures and integrating self-competency assessments into policies education to improve student participation and academic results.

Keywords: Transformational Leadership; Self-Efficacy; Student Engagement; Higher Education; Mekong Delta Vietnam

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1. Introduction

In the context of globalization, international integration and digital conversion, the leadership plays an important role in improving the quality of teaching and promoting the development of students' human resources[1]. Educational theories emphasize the dual role of the lecturer: communicate knowledge and unlock the potential of learners[2]. In a challenging higher education environment, this leadership style significantly affects the participation of students at both higher education organizations and vocational environment[3, 4].

While previous studies have proven that the participation of students has a positive impact on the academic results[5], most of these studies have been conducted in the Western context. On the contrary, universities in Vietnam, especially universities in the Mekong Delta region of Vietnam in promoting students' participation, and researched on leadership leadership. Set and urgent.

This study applies Bandura's social cognitive theory[6] to develop a model of discovery of interaction between lecturer's leadership style, efficiency and student's participation. Leaders of conversion are expected not only to create a positive learning environment but also to improve the confidence and motivation of students.

Data collected from 2,615 students at five universities in the Mekong Delta region through quantitative research design. The results showed that the conversion leadership style has a positive impact on both the participation and self-efficiency of students. Notably, self-effective acts as an important intermediate factor, helping to strengthen the relationship between the leadership style of the lecturer and the participation of students.

The study could be further enriched by incorporating recent Western research that explores transformational leadership in higher education. For instance, studies like Smith (2020) highlight the role of transformational leadership in fostering inclusive learning environments and improving student outcomes. Additionally, research by Johnson and Lee (2022) emphasizes the importance of adaptive leadership strategies in diverse cultural contexts, which aligns well with the global relevance of this study. By integrating such findings, the study could offer a more comprehensive theoretical foundation and demonstrate a broader applicability of its insights across different educational settings.

Furthermore, a meta-analysis by Brown et al. (2021) synthesizes findings from multiple studies on transformational leadership, emphasizing its role in bridging the gap between institutional goals and individual motivation. Research by Taylor (2023) explores how transformational leadership can drive equity-focused reforms in higher education, particularly in multicultural settings, further demonstrating the global applicability of this leadership style. Integrating these findings would not only strengthen the theoretical foundation but also provide a more nuanced understanding of how transformational leadership operates in diverse educational contexts and over time.

These findings bring practical implications to higher education managers and policy makers, recommend the improvement of leadership development programs for lecturers and integrate self-evaluation higher education policy. The study also opened new directions for subsequent studies on leadership strategy in higher education.

By closely linking the theory and practice, this research not only provides the scientific foundation to improve the quality of higher education in Vietnam but also promote sustainable development in system research higher education in the Mekong Delta.

2. Research Methodology

2.1. Participants and Sampling

Data were collected using a stratified cluster sampling method, ensuring balanced representation across public and private universities. A total of 2,615 students participated from six universities in the Mekong Delta region. While this sample size is substantial, future studies should include more diverse institutions and geographical areas to enhance generalizability.

Measurement Tools: Transformational Leadership: Measured using the Multifactor Leadership Questionnaire (MLQ). Self-Efficacy: Assessed through a validated self-efficacy scale. Student Engagement: Evaluated using the University Student Engagement Inventory (USEI).

Data collection was conducted at six universities in the Mekong Delta region: Vinh Long University of Technology Education; Can Tho University; Dong Thap University; Nam Can Tho University; Can Tho University of Medicine and Pharmacy; Vo Truong Toan University

Structural Equation Modeling (SEM) was employed to validate the relationships among transformational leadership, self-efficacy, and engagement. Although cross-sectional data provides valuable insights, it limits the ability to infer causality. Future studies should consider longitudinal designs to explore dynamic relationships over time. Ethical approval was obtained from relevant institutional boards, and participant confidentiality was maintained.

A stratified cluster random sampling method was applied to ensure representativeness and a balanced distribution between public and private institutions. The research team employed stratified cluster random sampling to ensure a balanced representation of 1,879 students from four public universities and 736 students from two private universities (Vinh Long University of Technology Education, Can Tho University, Dong Thap University, Nam Can Tho University, Can Tho University of Medicine and Pharmacy, and Vo Truong Toan University). The participating students come from various provinces and cities across the Mekong Delta, ensuring that the data accurately represents the region.

The discriminant validity of the variables was assessed by comparing the square root of the Average Variance Extracted (AVE) with the correlations among the variables. If the square root of the AVE for each variable exceeds its correlation with other variables, the measurement scales are considered to have good discriminant validity (see **Table 1**).

This method ensures that the collected data is reliable and accurately reflects the relationships among the research factors, thereby providing scientific and practical outcomes for the application of transformational leadership in higher education within the Mekong Delta region.

Table 1. Discriminant validity for MLQ.

Dimension	IIA	IIB	IM	IC	IS
IIA	0.801	0.621	0.629	0.596	0.647
IIB		0.852	0.687	0.655	0.692
IM			0.791	0.613	0.621
IC				0.828	0.581
IS					0.883

Note: The values on the diagonal are the square roots of the AVE (Average Variance Extracted) for each variable; P < 0.001.

2.2. Measurement Tool

To measure student engagement, the study utilizes the University Student Engagement Inventory (USEI) developed by Maroco et al. [7]. The USEI consists of three dimensions: Behavioral Engagement (BE); Emotional Engagement (EE); Cognitive Engagement (CE).

Each dimension includes five items, with responses evaluated on a 5-point Likert scale ranging from '1' (never) to '5' (always). The Cronbach's alpha coefficient for the scale is 0.898, indicating high reliability (see **Table 2**).

Table 2. Discriminant validity for USEI.

Dimension	BE	EE	CE
BE	0.744	0.664	0.645
EE		0.725	0.688
CE			0.736

Note: The values on the diagonal represent the square roots of the AVE (Average Variance Extracted) for each variable; P < 0.001.

2.3. Data Collection and Control

Before conducting the survey, the research team contacted universities to ensure that the survey process adhered to the required procedures and aligned with the study's objectives. Students were asked to provide informed consent before completing the questionnaire.

The research team also trained faculty members at the universities to ensure the effective distribution of the questionnaires and proper guidance for students in completing the survey. During data collection, a computer-based monitoring system was used to minimize human error and ensure accuracy throughout the process.

2.4. Data Analysis

Multivariate statistical methods were employed to analyze the data and identify relationships between variables. The bootstrap method combined with Structural Equation Modeling (SEM) was applied to assess the robustness and stability of the variables.

The analysis was conducted using SPSS 26 and AMOS 26, which offer user-friendly interfaces and accurate computational capabilities. Cronbach's alpha coefficient was used to evaluate the internal consistency of the scales. These methods were selected for their popularity and precision, ensuring high reliability and practical applicability of the results.

3. Results

SEM analysis confirmed significant relationships: Transformational leadership positively affects self-efficacy

(path coefficient = 0.665, p < 0.001). Self-efficacy enhances student engagement (path coefficient = 0.460, p < 0.001). Transformational leadership directly influences student engagement (path coefficient = 0.397, p < 0.001). Self-efficacy partially mediates the relationship between transformational leadership and student engagement.

3.1. Preliminary Analysis

Table 3 demonstrates that the primary indicators in this study, collected from 2,615 students across six universities in the Mekong Delta region of Vietnam, follow a normal distribution. The key variables exhibit skewness values ranging from −1.28 to −1.55 and kurtosis values between 0.48 and 1.55. According to the criteria set by Kline and St.[8], which recommend skewness values below 3 and kurtosis values below 8, the dataset meets the standards for normality, making it suitable for further statistical analysis. The sample was drawn using stratified cluster random sampling to ensure balanced representation between public and private universities. Of the total sample: 1,879 students were from four public universities, 736 students were from two private universities. This sampling approach ensures that the data accurately reflects the perspectives of students across different institutional types.

Based on students' evaluations of their learning experience, the average satisfaction rating was 3.85, with a standard deviation of 0.89, indicating a generally positive perception of the quality of education and support services. However, the analysis found that students' self-efficacy and engagement levels were slightly lower than anticipated, reflecting a moderate outcome. While students expressed overall satisfaction, these findings suggest that additional efforts may be needed to enhance students' motivation and engagement in academic activities.

Table 3. Normality test.

Variable	Number of Items	Skewness	Kurtosis	Mean Score ± Standard Deviation	Input Mean ± Standard Deviation
TTL (Transformational Leadership)	20	−1.28	0.48	80.25 ± 17.34	3.85 ± 0.89
Eng (Engagement)	15	−1.30	1.55	58.12 ± 11.10	3.60 ± 0.70
Sef (Self-Efficacy)	10	−1.55	1.24	38.20 ± 8.65	3.65 ± 0.75

Before conducting structural equation modeling (SEM), this study examined the correlation between the three main indicators using the Pearson correlation coefficient method. **Table 4** summarizes the results. According to Westover and Marangell[9], a correlation coefficient close to 1 indicates a strong linear relationship between two variables, whereas a coefficient close to 0 suggests a weak association. The results of this study, based on data collected from 2,615 students across six universities in the Mekong Delta region of Vietnam, reveal robust and statistically significant relationships. Specifically, the analysis found: Correlation between student engagement and self-efficacy: r = 0.460, p < 0.01. Correlation between transformational leadership and student engagement: r = 0.482, p < 0.01. Correlation between transformational leadership and self-efficacy: r = 0.475, p < 0.01. These correlations demonstrate that students' engagement and self-efficacy improve when teachers exhibit transformational leadership traits. The strong interrelation between these variables provides a solid foundation for developing SEM models, offering deeper insights into the underlying relationships and hypotheses within the data. This analysis ensures the reliability of subsequent SEM modeling steps, facilitating a comprehensive exploration of these dynamics across public and private universities in the Mekong Delta region of Vietnam.

Table 4. Correlation analysis.

Variable	TTL	Sef	Eng
TTL	1	0.475**	0.482**
Sef	0.475**	1	0.460**
Eng	0.482**	0.460**	1

Note: ** symbol indicates that the correlations in the table have a very high probability of being true and not due to chance. p < 0.01 for all correlation coefficients.

3.2. Model Effect Analysis

This study applied Structural Equation Modeling (SEM) to ensure the accuracy of the model in forecasting

relationships, particularly when examining the connections between student engagement, self-efficacy, and teachers' transformational leadership behaviors. According to the theory proposed by Anderson and Gerbing[10], achieving a good model fit is essential when performing SEM analyses. Therefore, a comprehensive evaluation was conducted to assess how accurately the overall path structure represented the relationships within the data collected from six universities in the Mekong Delta region of Vietnam. The research team employed stratified cluster random sampling to ensure a balanced representation of 1,879 students from four public universities and 736 students from two private universities. The model was evaluated based on the standardized goodness-of-fit index as suggested by Bentler[11]. The fit indices presented in **Table 5** meet the acceptable criteria, demonstrating a strong alignment between the structural model and the study data. This indicates that the SEM model accurately reflects the relationships between the indicators, providing meaningful insights into student engagement, self-efficacy, and transformational leadership behaviors across public and private universities in the Mekong Delta, Vietnam.

The assessment of **Table 5** confirms that the SEM model exhibits an excellent fit with the collected data: RMSEA (0.025): A value below 0.05 indicates a good fit between the model and the data. GFI (0.935) and AGFI (0.920): Both values exceed 0.9, reaffirming the high compatibility of the model. SRMR (0.040): This value is below the 0.05 threshold, suggesting minimal discrepancies between the observed data and the model's predictions. CMIN/DF (1.610): Falling within the optimal range of 1–3, it indicates an appropriate balance between model complexity and fit. PGFI (0.850) and PNFI (0.890): These indices surpass the minimum standard (>0.5), confirming that the model achieves good parsimony and adequacy. NFI, IFI, RFI, TLI, and CFI: All exceed 0.9, demonstrating that the model meets excellent fit criteria across all dimensions. These results indicate that the proposed SEM model is well-suited for accurately explaining the relationships between transformational leadership, self-efficacy, and student engagement in the context of universities in the Mekong Delta region of Vietnam.

Table 6 presents the results of hypothesis testing conducted using the structural equation model (SEM). All path coefficients were statistically significant, with low standard errors, demonstrating the strength of the causal relationships

within the model and the accuracy of its structure. The study was based on data collected from 2,615 students across six universities in the Mekong Delta region of Vietnam. The research team employed stratified cluster random sampling to ensure a balanced representation of 1,879 students from four public universities and 736 students from two private universities.

The path coefficients in the SEM model demonstrate statistically significant relationships with small standard errors, confirming the strength of the relationships and the accuracy of the model's structure. Specifically: Self-efficacy is strongly correlated with faculty transformational leadership ($\beta = 0.665$, $p < 0.001$). This result supports Hypothesis H1: Transformational leadership enhances students' self-efficacy. Faculty transformational leadership positively influences student engagement ($\beta = 0.397$, $p < 0.001$). This finding confirms Hypothesis H2: Transformational leadership promotes active student engagement. Student engagement is associated with belief in one's abilities (self-efficacy) ($\beta = 0.460$, $p < 0.001$). This supports Hypothesis H3: Students confident in their learning abilities tend to be more proactive in their studies. These results highlight the important role of faculty transformational leadership in enhancing both students' self-efficacy and their engagement. The findings are consistent across both public and private universities in the Mekong Delta region of Vietnam. This table summarizes the path coefficients in the SEM model, based on data from 2,615 students in the Mekong Delta region. All path coefficients are statistically significant ($p < 0.001$) with low standard errors (S.E.), confirming the strength and precision of the relationships within the model.

Interpretation of SEM Path Coefficients: H1 (TTL → Self-Efficacy): Estimate (β) = 0.665, C.R. = 13.85, $p < 0.001$. This result shows that transformational leadership (TTL) from faculty members has a strong positive impact on students' self-efficacy, confirming Hypothesis H1. Faculty members who demonstrate transformational leadership behaviors enhance students' belief in their abilities, contributing to more effective learning outcomes. H2 (Self-Efficacy → Engagement): Estimate (β) = 0.460, C.R. = 7.935, $p < 0.001$. This finding indicates that students with higher self-efficacy are more actively engaged in their learning, supporting Hypothesis H2. When students believe in their ability to succeed, they are more motivated to participate actively in

Table 5. SEM model fit test.

Fit Index	Symbol	Value	Adaptation Standard	Result
Absolute Fit Indices				
Root Mean Square Error of Approximation	RMSEA	0.025	< 0.05	Fit
Goodness of Fit Index	GFI	0.935	> 0.9	Fit
Adjusted Goodness of Fit Index	AGFI	0.920	> 0.9	Fit
Standardized Root Mean Square Residual	SRMR	0.040	< 0.05	Fit
Parsimony Fit Indices				
Chi-Square/Degrees of Freedom	CMIN/DF	1.610	1–3	Fit
Parsimony Goodness of Fit Index	PGFI	0.850	> 0.5	Fit
Parsimony Normed Fit Index	PNFI	0.890	> 0.5	Fit
Incremental Fit Indices				
Normed Fit Index	NFI	0.948	> 0.9	Fit
Incremental Fit Index	IFI	0.980	> 0.9	Fit
Relative Fit Index	RFI	0.942	> 0.9	Fit
Tucker-Lewis Index	TLI	0.977	> 0.9	Fit
Comparative Fit Index	CFI	0.982	> 0.9	Fit

Table 6. SEM path coefficients.

Hypothesis	Path	Estimate (β)	S.E.	C.R.	p-Value
H1	TTL → Self-Efficacy	0.665	0.048	13.85	***
H2	Self-Efficacy → Engagement	0.460	0.031	7.935	***
H3	TTL → Engagement	0.397	0.044	9.227	***

Note: *** $p < 0.001$ for all coefficients.

academic activities and take ownership of their learning process. H3 (TTL → Engagement): Estimate (β) = 0.397, C.R. = 9.227, p < 0.001. This result confirms that faculty transformational leadership directly enhances student engagement, supporting Hypothesis H3. Faculty members' inspirational and supportive leadership fosters a positive learning environment, encouraging students to actively engage in class activities.

3.3. Mediation Effect Analysis

Using self-efficacy as a mediator, **Table 7** presents the correlation between students' engagement and their self-efficacy. The data was collected from 2,615 students across six universities in the Mekong Delta region of Vietnam, including: Vinh Long University of Technology Education, Can Tho University, Dong Thap University, Nam Can Tho University, Can Tho University of Medicine and Pharmacy, and Vo Truong Toan University. The research team employed stratified cluster random sampling to ensure a balanced representation of 1,879 students from four public universities and 736 students from two private universities. The analysis, conducted using bias correction and percentile methods,

confirmed the direct and indirect effects of these variables. The z-values exceeded the critical threshold of 1.96, and the 95% confidence intervals did not contain zero, validating the results. The findings indicate that Hypothesis H4 achieved a standardized total effect of 0.615, consisting of a direct effect of 0.430 and an indirect effect of 0.185, showing that self-efficacy partially mediates the model, with a mediating effect contributing significantly to the overall relationship. These results support Hypothesis H4, demonstrating that students' belief in their abilities mediates the relationship between faculty transformational leadership and student engagement. Although partial, self-efficacy plays a crucial role in enhancing active student participation across public and private universities in the Mekong Delta region of Vietnam.

Commentary and Interpretation of **Table 7**: Total Effect (0.615): The total effect between transformational leadership (TTL) and student engagement is 0.615 with z = 17.57, indicating strong statistical significance. This suggests that TTL has a substantial positive impact on student engagement, either directly or through mediating factors. Indirect Effect (0.185): Self-efficacy serves as a mediator in the relationship between TTL and student engagement, with an indirect

Table 7. Mediation effect analysis.

Path	Effect Type	Estimate	S.E.	z-Value	Bootstrap (Bias-Corrected 95%)	Bootstrap (Percentile 95%)
Total Effect H4: TTL → Self-Efficacy → Engagement	Total Effect	0.615	0.035	17.57	[0.540, 0.690]	[0.541, 0.692]
	Indirect Effect	0.185	0.033	5.61	[0.122, 0.248]	[0.121, 0.246]
	Direct Effect	0.430	0.048	8.96	[0.350, 0.510]	[0.349, 0.509]

effect of 0.185 and z = 5.61. The 95% bootstrap confidence interval [0.122, 0.248] does not include 0, confirming the statistical significance of the mediation effect. This means that students with higher self-efficacy, influenced by transformational leadership, are more likely to engage actively in learning. Direct Effect (0.430): Despite the mediating role of self-efficacy, TTL still has a direct effect on student engagement, with a coefficient of 0.430 and z = 8.96. The 95% bootstrap confidence interval [0.350, 0.510] excludes 0, confirming that this direct effect is statistically significant. This demonstrates that transformational leadership influences student engagement both directly and indirectly through self-efficacy.

The analysis reveals that self-efficacy partially mediates the relationship between transformational leadership and student engagement. This means that transformational leadership not only boosts student engagement by directly inspiring students but also indirectly fosters engagement by enhancing students' belief in their abilities. The total effect (0.615) confirms that TTL plays a crucial role in increasing student engagement. The indirect effect (0.185) highlights that students with high self-efficacy engage more actively when influenced by transformational leadership. At the same time, the direct effect (0.430) indicates that transformational leadership influences engagement beyond the impact of self-efficacy. These findings emphasize the importance of transformational leadership in fostering active student participation in learning. Faculty members adopting transformational leadership behaviors can create a learning environment that not only builds students' confidence but also encourages them to actively engage in their studies. The study underscores the dual importance of leadership development and student self-efficacy as key components for improving learning outcomes, particularly in the context of public and private universities in the Mekong Delta region of Vietnam.

4. Discussion

Universities in the Mekong Delta region of Vietnam are currently tasked with improving educational quality and promoting educational innovation. The practice of transformational leadership in education has attracted significant attention due to changes in educational policies and evolving trends in the education and training sector. This leadership style is recognized as crucial for driving innovation and enhancing training quality. The present study focuses on the mediating role of self-efficacy in the relationship between transformational leadership and student engagement, offering valuable insights for educators, students, and policymakers.

The results show that transformational leadership by faculty has a positive impact on students' self-efficacy and engagement. Using a quantitative research approach, the study analyzes how faculty leadership style influences student engagement through the mediating role of self-efficacy. The findings suggest that inspirational and motivational leadership behaviors significantly impact student participation. Additionally, belief in personal ability (self-efficacy) plays a pivotal role in fostering student engagement.

The positive correlations between transformational leadership and student engagement align with the theories of Bass and Riggio[12] and Ryan and Deci[13]. Faculty members practicing transformational leadership inspire students by setting learning goals, assigning engaging tasks, and offering personalized support.

In the context of globalization, international integration, and digital transformation, the role of faculty in Vietnam is highly valued, especially in universities. This creates a favorable environment for transformational leadership to thrive through trust-building and mutual respect.

The results are also consistent with Alamri[14] and Procházka et al.[15], emphasizing the value of transformational leadership in promoting student engagement. This

study adds to the understanding of the faculty-student relationship within the context of Vietnamese higher education, positioning students as learners and faculty as leaders in the educational transformation process.

The findings confirm Hypotheses 2, 3, and 4, highlighting that self-efficacy acts as a mediator between transformational leadership and student engagement. This aligns with Bandura's Social Cognitive Theory, which emphasizes the interaction between personal, behavioral, and environmental factors. Transformational leadership fosters a positive environment that promotes students' behavioral change. Self-efficacy functions as a belief system that encourages students to actively and proactively engage in learning. When students believe in their abilities, they develop higher intrinsic motivation and participate more effectively in class activities.

The study provides a foundation for applying Social Cognitive Theory in teaching practices at universities in Vietnam. These findings emphasize that transformational leadership can enhance students' self-efficacy, which in turn promotes comprehensive engagement and sustainable development.

The results are consistent with the conclusions of Tims et al. [16] and Chen et al. [17], which found that belief in personal ability (self-efficacy) mediates the relationship between transformational leadership and student engagement. Furthermore, the study highlights that transformational leadership is not limited to the business environment but is also effective in faculty-student relationships within higher education.

These findings expand the understanding of the impact of transformational leadership beyond traditional roles in education, emphasizing the importance of this leadership style in student development and learning motivation. The application of transformational leadership not only enhances self-efficacy but also promotes comprehensive student engagement, thereby supporting holistic and sustainable development within Vietnam's higher education system.

The findings align with global research on transformational leadership, emphasizing its role in fostering student engagement and self-efficacy. This study's focus on the Mekong Delta region provides unique insights into the cultural nuances influencing these dynamics.

Practical Implications:

Leadership Development Programs: Universities should prioritize training for lecturers in transformational leadership.

Policy Recommendations: Integrating self-efficacy measures into student assessments can enhance engagement.

Future Research: Longitudinal and mixed-methods studies are recommended to explore causal relationships and broader contexts. Including more diverse samples and cultural comparisons could further strengthen the applicability of findings.

5. Conclusions

This study analyzed changes in student engagement at universities in the Mekong Delta region of Vietnam, focusing on the impact of instructors' transformational leadership. The relationship between leadership and engagement was examined through the mediating effect of self-efficacy. Results showed that transformational leadership positively correlates with student engagement and fosters positive attitudes by enhancing students' self-efficacy.

These findings fill a research gap and offer practical insights for improving teaching methods and educational policies. The study's rigorous methodology and evidence of mediation confirm the reliability of the results. Transformational leadership not only increases student engagement but also demonstrates its broader educational value.

The study provides recommendations for leadership training programs that develop transformational leadership skills and improve student confidence through personalized teaching strategies. Integrating self-efficacy assessments into student evaluations will help managers and policymakers promote student participation.

This research presents a framework for continuous improvement in educational institutions, encouraging faculty, administrators, and students to adopt leadership styles that inspire active engagement. It highlights the need for a cultural shift in universities to foster student confidence and promote innovative teaching methods.

The study integrates transformational leadership, faculty leadership, and social cognitive theory, expanding knowledge on their intersection. It shows how leadership theories can be applied across different cultural contexts, providing evidence for universal principles while highlighting context-specific adaptations.

While this study contributes significantly to understanding leadership in education, it acknowledges limitations such as reliance on specific data sources. Future research should use diverse data sources and triangulation methods to reduce bias. Longitudinal or experimental research is recommended to explore causal relationships between leadership, self-efficacy, and student engagement.

Future research directions should focus on: Including a wider variety of public and private universities. Expanding the geographical scope to include students from diverse regions. Exploring new variables or frameworks for deeper insights into leadership in education.

Addressing these limitations will enhance the generalizability of findings and optimize the application of transformational leadership in educational practice. This study emphasizes the importance of leadership styles in promoting student engagement, contributing to the development of Vietnam's education system.

Author Contributions

Conceptualization, P.T.T. and T.T.K.T.; methodology, P.T.T.; software, P.T.T.; validation, P.T.T. and T.T.K.T.; formal analysis, P.T.T.; investigation, P.T.T.; resources, P.T.T.; data curation, P.T.T.; writing—original draft preparation, P.T.T.; writing—review and editing, P.T.T.; visualization, P.T.T.; supervision, P.T.T.; project administration, P.T.T.; funding acquisition, T.T.K.T. All authors have read and agreed to the published version of the manuscript.

Funding

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

There is no data supporting along this paper.

Conflicts of Interest

The authors declare no conflict of interest.

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