Humanities and Social Sciences Letters
2026 Vol. 14, No. 2, pp. 227-238
ISSN(e): 2312-4318
ISSN(p): 2312-5659
DOI: 10.18488/73.v14i2.4861

Modelling the pre-service teachers motivation in technical-vocational education

Harlene Marie Gamboa[1]
Adrian Duites[2]
Dennis Plando[3]
Roberto Suson[4+]

[1,2,3,4]*Cebu Technological University, Philippines.*
[1]*Email: harlenemarie.gamboa@ctu.edu.ph*
[2]*Email: Adrian.duites@gmail.com*
[3]*Email: dennis.plando@gmail.com*
[4]*Email: robertosuson0@gmail.com*

(+ Corresponding author)

Article History
Received: 18 August 2025
Revised: 10 February 2026
Accepted: 5 March 2026
Published: 26 March 2026

Keywords
Control of learning
Pre-service teachers
Self-regulation
Task value.

ABSTRACT

Understanding the factors that influence student motivation is essential for supporting academic development, particularly among pre-service teachers. This study investigates the underlying mechanisms that shape student motivation by proposing a structural model incorporating self-regulation, control of learning, and task value as key predictors. Using a sample of 150 responses, partial least squares structural equation modeling (PLS-SEM) was employed to examine the relationships among the variables. The analysis revealed that task value significantly predicts student motivation, indicating that students who perceive academic tasks as meaningful and worthwhile are more motivated to engage in learning. Control of learning was also found to be a significant but weaker predictor, suggesting that a sense of agency contributes to motivation, albeit to a lesser extent. In contrast, self-regulation did not show a significant effect on student motivation within this model. These findings provide theoretical insights into the role of cognitive and motivational factors in shaping pre-service teachers' academic engagement. From a practical perspective, the results underscore the importance of designing educational experiences that enhance the perceived value of learning tasks and support students' sense of control over their learning process. Such interventions may foster stronger motivation regardless of individual differences in self-regulation.

Contribution/Originality: This study contributes to the existing literature by examining student motivation through a structural model incorporating self-regulation, control of learning, and task value. It employs a new estimation methodology using PLS-SEM. The primary contribution of the paper is the finding that task value significantly predicts motivation, while self-regulation shows no significant effect.

1. INTRODUCTION

The other significant determining factor of success in education is motivation (Kong, 2021). Motivation is widely recognized as one of the most critical predictors of arousing interest in learning and promoting academic success (Kevin, Enjeli, & Wijaya, 2024). Motivation refers to the willingness or desire to engage in activities that drive goal-directed behavior, effort, and persistence (Schwinger & Trautner, 2020). Heckhausen (2020) suggested that individuals' motivation affects their choice of activities and tasks, how intensely they work on tasks, how much they enjoy doing so, how likely they are to persist in the face of difficulties, and which goals they set for themselves. Lazarides, Schiefele, Daumiller, and Dresel (2025) emphasized that, when applied to the teaching profession, motivation can thus be expected to influence processes involving teachers' instructional choices, the intensity and effort with which they prepare their teaching, and their persistence in the face of difficulties, their enjoyment of

teaching, and their goal-setting processes with respect to classroom instruction. According to Derakhshan, Kruk, Mehdizadeh, and Pawlak (2021) and Halif et al. (2020), the motivation of students (i.e., pre-service teachers) is a critical factor in the development of learning and, as a result, the enhancement of the value of higher education. This is because the more motivated learners are, the more likely they are to be successful in their activities. Additionally, in the educational sector, motivation is regarded as one of the most critical factors in the effectiveness of teaching and learning (Çakıroğlu, Başıbüyük, Güler, Atabay, & Yılmaz Memiş, 2017). Thus, students' motivation is probably one of the most important factors for teacher effectiveness, both for engagement in the learning process and high academic performance (Leitão, Maguire, Turner, & Guimarães, 2022).

Motivation is a significant internal aspect affecting kids' academic achievement. Nonetheless, pupils inexplicably lose their enthusiasm and interest, resulting in increased demotivation over time (Minalla, 2022). Gultom and Oktaviani (2022) assert that pupils with diminished motivation exhibit subpar performance, despite possessing considerable ability and resources. Chen (2019) elucidates that demotivation encompasses multiple adverse factors that negate existing motivation, characterizing the 'demotivated' learner as an individual who was once motivated but has subsequently lost interest or commitment for various reasons. Multiple aspects demonstrate the impact of students lacking motivation in the classroom. Students who exhibit a lack of enthusiasm in classroom activities typically underperform and underachieve (Selvarajoo & Baharudin, 2023). Demotivated learners exhibit resistance to classroom involvement, presenting a significant obstacle for educators striving to cultivate students' enthusiasm in language acquisition, facilitate engaging courses, and accomplish educational objectives (Shah, Hussain, & Nasseef, 2013). Moreover, students with low motivation tend to perform worse academically, as motivation is directly linked to persistence, effort, and learning outcomes (Fung et al., 2024). Students who are not motivated tend to focus on surface learning (rote memorization) rather than deeper understanding, which limits their ability to think critically and apply knowledge (Samoshkina, 2024). Suharnadi, Neviyarni, and Nirwana (2024) noted that without motivation, students show a diminished ability to discover, explore, and improve academic or life skills, affecting long-term development. According to Hodis and Hodis (2022), there are multiple motivation factors that work together to influence how students learn and achieve. For instance, motivation is significantly shaped by internal (interest, curiosity, mastery goals) and external (grades, rewards, recognition) drivers. This distinction is central to how students approach learning tasks (Hodo, 2016). Teacher enthusiasm, use of humor, feedback, and clear instruction are among the most influential factors motivating students to succeed academically (Xiong, 2025). Social context, classroom culture, and peer dynamics play a substantial role in how motivated students feel, especially when collaborative learning or social validation is involved (Laeli & Cahayani, 2023). Beliefs about competence, the value of learning, and perceived control over outcomes are internal psychological factors closely tied to motivation (Wang, Yang, & Delgado, 2021), and teacher enthusiasm, use of humor, feedback, and clear instruction were among the most influential factors motivating students to succeed academically (Frommelt, Schiefele, & Lazarides, 2021). Moreover, according to Al-Said (2023), Motivation is influenced by traditional and modern teaching strategies, including student evaluation and teacher control. For example, digital applications, interactive content, and adaptive learning platforms enhance motivation by aligning with students' learning preferences (Isaeva, Karasartova, Dznunusnalieva, Mirzoeva, & Mokliuk, 2025). Overall, student motivation is affected by various factors, such as classroom atmosphere, technology utilization, learning autonomy, teaching tactics, and the balance of internal and extrinsic influences.

However, the effects of each motivation factor on students' learning and attainment depend on the strength (or lack of strength) of other key motivation factors (Hattie, Hodis, & Hodis, 2020). Additionally, control belief about learning was the strongest predictor of self-efficacy, which is a central component of motivation (Manavipour & Saeedian, 2016). Empirical findings by Muwonge, Schiefele, Ssenyonga, and Kibedi (2017) emphasized that control of learning beliefs, along with self-efficacy and task value, significantly predicted students' use of metacognitive strategies, which are essential for self-regulated learning and sustained motivation. Moreover, findings also support that among all motivational variables, task value was the strongest predictor of students' engagement with teacher

feedback (i.e., acting on feedback and seeking feedback), indicating its critical role in sustaining learning motivation (Gan, Liu, & Nang, 2023). However, Edwards (2025) suggests that task value fluctuates over time in online courses and influences motivation and performance. Thus, when perceived task value decreases or costs increase, academic performance drops in later assessments. Kong (2021) emphasized that motivation consists of factors that are psychological and difficult to observe. Although several studies link to students' motivation, this study attempts to establish a structural model that addresses pre-service teachers' motivation in the context of technical vocational education. Therefore, understanding motivational factors is crucial for creating learning environments where students are invested in their learning and acquire important skills. In this study, determinants such as self-regulation, control of learning, and task value were tested as key factors. Consequently, this study addresses this gap by providing a comprehensive model that explains the motivation of pre-service teachers. Furthermore, partial least squares structural equation modeling (PLS-SEM) is employed to elucidate the motivations of pre-service instructors. The PLS-based SEM is a more robust and comprehensive statistical tool for identifying structural models (Henseler, Ringle, & Sarstedt, 2015). Moreover, this study is original in its attempt to model pre-service teachers' motivation in the specific context of Technical-Vocational Education (TVE) using a PLS-SEM approach. While prior research has explored motivation factors broadly among students, little empirical work has examined how self-regulation, control of learning, and task value interact to explain motivation among future TVE teachers. The unique contribution of this work lies in its empirical validation of a structural model. Focusing on a teacher education program that prepares students for technical-vocational instruction, this study extends motivation theories into a practical and understudied educational setting, offering both theoretical insights and actionable implications for curriculum design and teacher preparation.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Motivation

Research on motivation continues to be a central focus in education, as it helps explain the internal forces that drive individuals to act, persist, and achieve goals. While classical frameworks such as Maslow's Hierarchy of Needs provided the foundation for understanding human drives, contemporary perspectives emphasize more dynamic and contextualized approaches. Self-Determination Theory, in particular, highlights autonomy, competence, and relatedness as key psychological needs that sustain motivation (Yang, Chen, & Zhuang, 2025). Recent research has demonstrated that instructional practices such as autonomy support, cooperative learning, and positive teacher behaviors significantly enhance students' task value, which in turn predicts learning motivation (Ruos, Em, Bamrungsin, & Khampirat, 2025). Longitudinal studies further show that academic motivation evolves across the years of higher education, with intrinsic motivation shifting as students progress through programs (Kyndt et al., 2013). Moreover, motivational profiles shaped by self-determination theory vary among adolescents, with distinct combinations of intrinsic and extrinsic orientations predicting different learning outcomes (Šakan, Tóth-Király, & Morin, 2024). Collectively, these findings reinforce that motivation is not static but is shaped by personal beliefs, instructional design, and social context, making it a critical determinant of student engagement and academic success.

2.2. Self-Regulation

Self-regulation encompasses students' capacity to strategize, oversee, and modify their learning approaches. Research indicates it markedly improves academic achievement. Fonte, Martínez-Vicente, Santos, Sander, and Zapata (2016) found that self-regulation improves achievement and satisfaction. Keyser and Viljoen (2015) confirmed that it predicts success in economics courses. Similarly, Nemati, Gawrilow, Moinzadeh, and Rosler (2020) reported that self-regulation supports math performance, especially in non-intensive fields. Tejero-Mena, Cuevas-Sosa, and Solís-Guillén (2020) highlighted that metacognitive and effort regulation are strong predictors of university success. Thus, we hypothesized.

H_1: Self-regulation has a positive influence on pre-service teacher motivation.

2.3. Control of Learning

Control of learning refers to a student's belief that their academic outcomes depend on their own efforts and strategies. These beliefs are crucial in shaping motivation and learning behavior. Manavipour and Saeedian (2016) found that control beliefs significantly predicted academic self-efficacy, indicating that students who believe they can influence their learning outcomes are more confident and motivated to succeed. Eachus (1997) also showed that students with strong personal control beliefs performed better academically. Similarly, Van Zile-Tamsen (1997) reported that students with higher control beliefs made more effective use of cognitive and resource management strategies, reinforcing their role in self-directed learning and academic success. Thus, we hypothesize.

H_2: Control of learning has a positive influence on pre-service teacher motivation.

2.4. Task Value

Task value refers to how much students believe a learning activity is useful, interesting, or important to their goals. It is a core driver of academic motivation under expectancy-value theory. Research shows that high task value leads to increased motivation and academic engagement. Gan et al. (2023) found task value to be the strongest predictor of students' engagement with teacher feedback in English learning. Similarly, Edwards (2025) observed that when students perceive lower task value in online courses, their motivation and performance decline. Turoski and Schell (2020) demonstrated that interventions to increase task relevance (utility value) significantly improved students' course interest and motivation. Seetee, Chi, Dhir, and Chen (2021) confirmed that task value across subjects predicts long-term academic choices. Desmarais, La Raja, and Kowal (2015) also linked task value with persistence and achievement in online learning environments. Thus, we hypothesized.

H_3: Task Value has a positive influence on pre-service teacher motivation.

2.5. Student Motivation

Student motivation significantly influences academic performance, engagement, and learning outcomes. Ishida and Sekiyama (2024) found that psychological, social, and environmental factors all affect motivation, varying by cultural context. Özen (2017) confirmed a positive link between motivation and achievement in a meta-analysis of 205 studies. Motivation also mediates the impact of the learning environment on student outcomes (Havidz & Mujakiah, 2023). Additionally, motivated students tend to show more enthusiasm and commitment, which improves academic success (Bunda et al., 2024). Thus, in this study, student (pre-service teachers) motivation is a critical factor in student success.

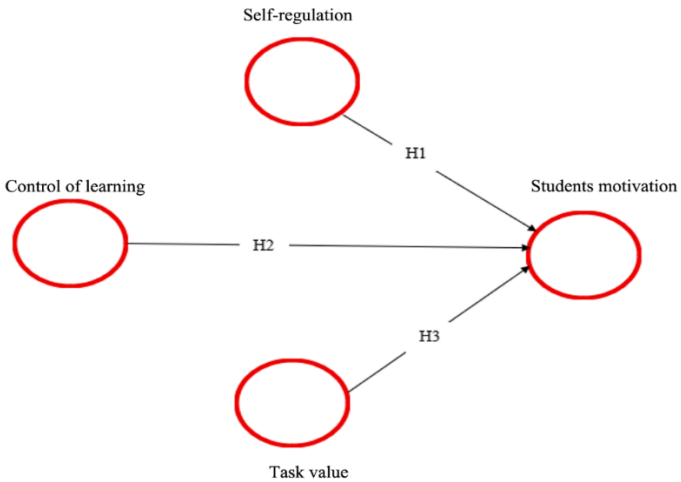

Figure 1. The proposed structural model for students' motivation.

Figure 1 illustrates the proposed structural model that examines the influence of three key constructs: self-regulation, control of learning, and task value on students' motivation. In this model, student motivation serves as the dependent variable, while self-regulation (H1), control of learning (H2), and task value (H3) are hypothesized as independent variables influencing it.

Each hypothesis (H1, H2, and H3) represents a directional relationship between the predictor and outcome variables. The model aims to test whether these cognitive and motivational factors significantly contribute to explaining variations in student motivation among pre-service teachers.

3. METHODS

3.1. Instruments

The constructs in the proposed model were assessed using items derived from a comprehensive literature survey (Appendix 1). Self-Regulation (SR) had four measurement items, Control of Learning (COL) had three measurement items, Task Value had four measurement items, and Student (pre-service teachers) Motivation (SM) had four measurement items. These measurement indicators were improved to align with the focus of the study. Using a five-point Likert scale, the survey tool tested all of the constructs. All of the constructs had items ranging from "strongly disagree" to "strongly agree."

Since the original items were developed for general student populations, all items were reviewed and revised to ensure contextual alignment with the experiences of BTVTED pre-service teachers. Revisions focused on improving clarity, relevance, and content validity. Consequently, indicator items were refined to align with the specific context and objectives of this study.

3.2. Data Collection

This study focuses on pre-service teachers at one of the leading state universities in the Philippines, Cebu Technological University. The participants were seniors in the College of Education pursuing a Bachelor of Technical-Vocational Teacher Education (BTVTED). A total of 150 students were included in this study. Data was collected through online platforms, such as Google Forms. To facilitate more effective data collection and analysis, this investigation utilized online surveys.

Generally, it is recommended that the minimum sample size be ten times the maximum number of arrows directed towards the latent variable in the PLS path model (Hair et al., 2021). Therefore, for this study, the minimum sample size, in accordance with (Hair et al., 2021), was 30. The study's participants exceed the required minimum.

3.3. Data Analysis Results

Hair, Matthews, Matthews, and Sarstedt (2017) suggest that when employing PLS-SEM, the assessment of the validity and reliability of data constitutes the primary criterion for evaluating the model. Table 1 illustrates that the factor loading for each item is above the threshold of 0.70 (Henseler, Ringle, & Sinkovics, 2009), indicating that the measurement model evaluation confirms the convergent validity and reliability of all indicators. Moreover, the AVE statistics for each construct range from 0.776 to 0.868, surpassing the recommended threshold of 0.5 (Fornell & Larcker, 1981).

This indicates that all constructs in the model exhibit appropriate convergent validity. Additionally, each construct exceeds the threshold values of Cronbach's alpha (α) and composite reliability (CR) of 0.70, demonstrating that the measures are reliable (Hair et al., 2017).

Table 1. Measurement model of assessment results.

Convergent validity		Discriminant validity			Convergent validity		Discriminant validity		
Loadings		Ave	α	CR	Loadings		Ave	α	CR
COL1	0.905	0.825	0.894	0.894	SR1	0.892	0.790	0.911	0.912
COL2	0.916				SR2	0.921			
COL3	0.904				SR3	0.915			
					SR4	0.825			
SM1	0.885	0.776	0.904	0.906	TV1	0.923	0.868	0.949	0.950
SM2	0.907				TV2	0.942			
SM3	0.889				TV3	0.928			
SM4	0.842				TV4	0.934			

Note: α = Cronbach's alpha; CR = construct reliability; AVE = average variance extracted; COL = control of learning; Student Motivation= student motivation; Self-Regulation = self-regulation; Task Value = task value

According to Fornell and Larcker (1981), the discriminant validity was demonstrated by the evidence that the average variance extracted (AVE) of the constructs was higher than the squared correlation of each latent variable. As shown in Table 2, the values in bold within the data table indicate the square roots of the AVE, while the non-bolded values represent the intercorrelation values between the constructs. Off-diagonal values that are less than the square roots of the AVE are considered to be consistent with the Fornell and Larcker criteria.

Table 2. Correlation and testing of discriminant validity.

	Control of learning	Self-regulation	Student motivation	Task value
Control of learning	**0.908**			
Self-regulation	0.819	**0.889**		
Student motivation	0.691	0.728	**0.881**	
Task value	0.730	0.844	0.773	**0.932**

Note: The square root of AVE is shown on the diagonal of the matrix in bold; inter-construct correlation is shown off the diagonal.

Table 3. Path coefficients and hypothesis results.

Hypothesis	β	p-values	Decision
H1: Self-regulation → Student motivation	0.102	0.09	Not supported
H2: Control of learning → Student motivation	0.227	0.000***	Supported
H3: Task value → Student motivation	0.522	0.000***	Supported

Note: *** $p < 0.001$.

3.4. Structural Model Assessment

This study investigated the predictive ability of the model's endogenous variables, which was one of the PLS-SEM results. The structural model was evaluated using PLS-SEM based on the strength of the path coefficients, R^2 values (prediction power), and f_2 (effect size) (Hair et al., 2017). The path coefficient results of the structural model that supports the stated assumptions are described in Table 3 and illustrated in Figure 2.

Figure 2 illustrates the R^2 value of the structural model, indicating its predictive accuracy. R^2 values of 0.75, 0.50, and 0.25 are considered acceptable based on the criterion for predictive accuracy (Henseler et al., 2015). With a path coefficient of 0.522, Task Value (TV) outperforms Control of Learning (0.227) and Self-Regulation (0.102) as predictors of Student Motivation. These three factors account for 63.5% of the variation in student motivation, with an R^2 value of 0.635.

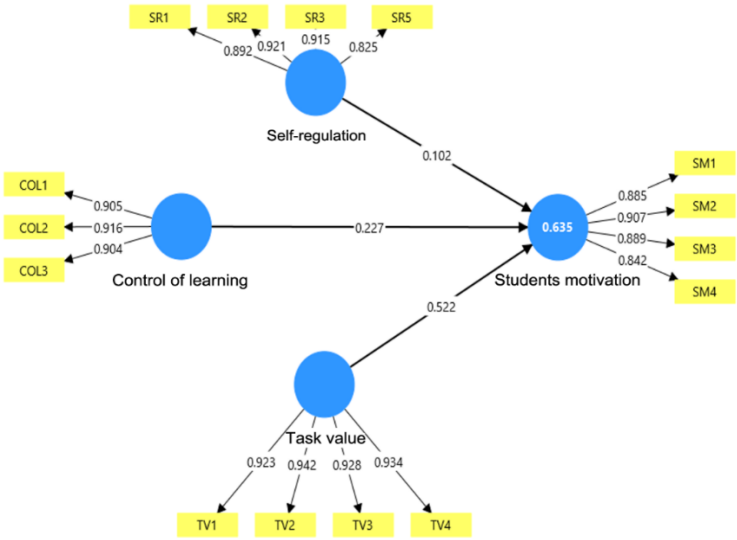

Figure 2. Structural model path coefficients.

The PLS algorithm yielded effect values (f2) of 0.02, 0.15, and 0.35, signifying modest, medium, and substantial effects, respectively, on the link between the exogenous and endogenous components (Hair et al., 2017). A score below 0.2 signifies the absence of influence of the foreign constructs on the endogenous construct. The (f2) result indicated that television and social media had a moderate effect. COL and SM exhibited minimal impact, whilst SR and SM demonstrated no effect.

Table 4. Effect size.

Relationship	*f2*	Effect size
SR → SM	0.014	No effect
COL → SM	0.047	Small effect
TV → SM	0.213	Medium effect

Table 4 presents the effect sizes of the relationships between the independent variables and student motivation. The effect size (f^2) indicates the magnitude of each variable's contribution to the structural model. Self-regulation (SR) shows an effect size of 0.014, which is considered to have no effect on student motivation. Control of learning (COL) has a small effect ($f^2 = 0.047$), suggesting a limited but present influence on motivation. In contrast, task value (TV) demonstrates a medium effect size ($f^2 = 0.213$), indicating a substantial impact on student motivation. These results highlight task value as the strongest predictor among the three constructs.

4. DISCUSSION

This study aimed to understand the key factors that influence the motivation of pre-service teachers. The results showed that task value is a strongly significant predictor of student motivation. Control of learning came in second, while self-regulation did not have a significant effect. An effect size of $f^2 = 0.213$ and a strong positive path coefficient ($\beta = 0.522$, $p < 0.001$) were found for task value. This indicates that students are more likely to be motivated to study if they find their assignments important, useful, or interesting. This is supported by Gan et al. (2023) and Edwards (2025), who found that task value has a strong effect on motivation and behavior in school. According to research, task value helps students learn more, keep trying, and stay interested in school, especially if they believe the tasks are related to their future careers.

Moreover, control over learning had a small but significant effect on motivation ($\beta = 0.227$, $p < 0.001$; $f^2 = 0.047$). This suggests that pre-service teachers who perceive themselves as in charge of their own learning and believe their success depends on their own effort are more likely to be motivated. This is in line with what Manavipour and

Saeedian (2016) and Van Zile-Tamsen (1997) highlighted, that students who have strong control beliefs are more confident, use better learning methods, and do better in school.

Self-regulation, on the other hand, does not directly translate to student motivation ($\beta = 0.102$, $p = 0.090$; $f^2 = 0.014$). Although self-regulation is often associated with success in school, it might not have a direct influence on students' motivation. One possible reason is that students may be able to control their learning processes. The model explains 63.5% of the variation in student motivation, indicating that task value and control of learning are two significant factors motivating pre-service teachers.

These findings align with previous research (Ishida & Sekiyama, 2024; Özen, 2017), which suggests that motivation is shaped by both internal and external factors. Overall, this study supports the idea that a student's motivation is influenced by a combination of beliefs (such as control), perceptions (such as task value), and emotional and psychological readiness. To foster motivation among pre-service teachers, learning environments should focus on providing meaningful and relevant material, along with tools that empower students to take charge of their own learning.

5. CONCLUSION

Using a PLS-SEM approach, this study explored the effect of self-regulation, control of learning, and task value on pre-service teachers' motivation. Findings suggested that task value was a strong predictor of student motivation, followed by control of learning, whereas self-regulation had no significant direct effect. These findings underscore the importance of designing learning experiences that are perceived as meaningful and relevant to students' academic and professional goals, while also fostering a sense of agency in their learning processes. By accounting for 63.5% of the variance in student motivation, the model offers a substantial contribution to the literature on teacher education, particularly in the context of Technical-Vocational Education. This work provides theoretical insights into the dynamics of motivation and practical implications for strengthening teacher preparation programs. Future studies may build on this foundation by exploring additional motivational factors and examining their implications for educational policy and classroom practice.

5.1. Theoretical Implications

This study advances the theoretical foundation of student motivation by empirically establishing a structural model that incorporates task value, control of learning, and self-regulation as determinants of pre-service teacher motivation. Based on expectancy-value theory and self-determination theory, the findings emphasize the importance of task value in determining motivating outcomes, implying that perceived usefulness and relevance of academic tasks are critical to maintaining student involvement.

The strong effect of control on learning lends support to theories that highlight learners' views of their own agency and responsibility as essential components of motivation. Interestingly, the lack of a substantial effect of self-regulation calls into question traditional notions. These findings urge further research into how other motivational factors interact and differ among learning venues, instructional designs, and cultural settings.

Funding: This study received no specific financial support.
Institutional Review Board Statement: The study involved minimal risk and followed ethical guidelines for social science fieldwork. Formal approval from an Institutional Review Board was not required under the policies of Cebu Technological University, Cebu Philippines. Informed verbal consent was obtained from all participants, and all data were anonymized to protect participant confidentiality.
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

REFERENCES

Al-Said, K. (2023). Influence of teacher on student motivation: Opportunities to increase motivational factors during mobile learning. *Education and Information Technologies*, *28*(10), 13439-13457. https://doi.org/10.1007/s10639-023-11720-w

Bunda, C. J., Altan, S., Gonzales, C., Kirmizi, M., Adelugba, S. F., & Kim, Y. E. (2024). Stay motivated and carry on: A meta-analytic investigation of motivational regulation strategies and academic achievement, motivation, and self-regulation correlates. *Journal of Educational Psychology*, *116*(6), 997–1018.

Çakıroğlu, Ü., Başıbüyük, B., Güler, M., Atabay, M., & Yılmaz Memiş, B. (2017). Gamifying an ICT course: Influences on engagement and academic performance. *Computers in Human Behavior*, *69*, 98–107. https://doi.org/10.1016/j.chb.2016.12.018

Chen, C. (2019). Study on learners' demotivation in EFL classroom – A case study at a higher vocational college. *Education Journal*, *8*(6), 338-343. https://doi.org/10.11648/j.edu.20190806.25

Derakhshan, A., Kruk, M., Mehdizadeh, M., & Pawlak, M. (2021). Boredom in online classes in the Iranian EFL context: Sources and solutions. *System*, *101*, 102556. https://doi.org/10.1016/j.system.2021.102556

Desmarais, B. A., La Raja, R. J., & Kowal, M. S. (2015). The fates of challengers in U.S. House elections: The role of extended party networks in supporting candidates and shaping electoral outcomes. *American Journal of Political Science*, *59*(1), 194–211. https://doi.org/10.1111/ajps.12106

Eachus, P. (1997). Beliefs in personal control, styles of learning, and the student's perception of academic performance. *Journal of Psychology and Education*, *32*(4), 18–26.

Edwards, O. V. (2025). Unpacking the dynamics of online motivation: A study of short-term changes in task value and cost utilizing multiple change analyses. *Journal of Education and Learning*, *14*(2), 1-18. https://doi.org/10.5539/jel.v14n2p1

Fonte, J., Martínez-Vicente, D. L. M., Santos, F. H., Sander, P., & Zapata, L. (2016). Personal self-regulation, academic achievement, and satisfaction with learning. *Frontiers in Psychology*, *7*, 1173.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39-50.

Frommelt, M. C., Schiefele, U., & Lazarides, R. (2021). Teacher enthusiasm, supportive instructional practices, and student motivation in mathematics classrooms. *Interdisciplinary Education and Psychology*, *2*(3), 1-17. https://doi.org/10.31532/InterdiscipEducPsychol.2.3.005

Fung, W. W.-S., Park, H. C., Hirakawa, Y., Arruebo, S., Bello, A. K., Caskey, F. J., . . . Johnson, D. W. (2024). Capacity for the management of kidney failure in the International Society of Nephrology North and East Asia region: Report from the 2023 ISN Global Kidney Health Atlas (ISN-GKHA). *Kidney International Supplements*, *13*(1), 97-109.

Gan, Z., Liu, F., & Nang, H. (2023). The role of self-efficacy, task value, and intrinsic and extrinsic motivations in students' feedback engagement in English learning. *Behavioral Sciences*, *13*(5), 428. https://doi.org/10.3390/bs13050428

Gultom, S., & Oktaviani, L. (2022). The correlation between students' self-esteem and their English proficiency test result. *Journal of English Language Teaching and Learning*, *3*(2), 52-57. https://doi.org/10.33365/jeltl.v3i2.2211

Hair, J. F., Astrachan, C. B., Moisescu, O. I., Radomir, L., Sarstedt, M., Vaithilingam, S., & Ringle, C. M. (2021). Executing and interpreting applications of PLS-SEM: Updates for family business researchers. *Journal of Family Business Strategy*, *12*(3), 100392. https://doi.org/10.1016/j.jfbs.2020.100392

Hair, J. J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: Updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, *1*(2), 107-123. https://doi.org/10.1504/IJMDA.2017.087624

Halif, M. M., Hassan, N., Sumardi, N. A., Omar, A. S., Ali, S., Aziz, R. A., . . . Salleh, N. F. (2020). Moderating effects of student motivation on the relationship between learning styles and student engagement. *Asian Journal of University Education*, *16*(2), 94-103.

Hattie, J., Hodis, G. M., & Hodis, F. A. (2020). The effects of motivational factors on academic achievement. *Educational Psychology Review*, *32*(3), 345–367.

Havidz, H. B. H., & Mujakiah, N. (2023). The effect of learning environment on student motivation and student achievement (literature review study). *International Journal of Psychology and Health Science*, *1*(1), 30–39. https://doi.org/10.38035/ijphs.v1i1.86

Heckhausen, J. (2020). Integrating and instigating research on person and situation, motivation and volition, and their development. *Motivation Science*, *6*(3), 185–188.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In New challenges to international marketing. In (pp. 277-319). Bingley, United Kingdom: Emerald Group Publishing Limited.

Hodis, F. A., & Hodis, G. M. (2022). Key factors that influence students' motivation to learn: Implications for teaching. *Set: Research Information for Teachers*, *2*, 37-41.

Hodo, Z. (2016). Students' motivation factors: Albania case. *Journal of Research & Method in Education (IOSR-JRME)*, *6*(6), 22-29.

Isaeva, R., Karasartova, N., Dznunusnalieva, K., Mirzoeva, K., & Mokliuk, M. (2025). Enhancing learning effectiveness through adaptive learning platforms and emerging computer technologies in education. *Jurnal Ilmiah Ilmu Terapan Universitas Jambi*, *9*(1), 144-160. https://doi.org/10.22437/jiituj.v9i1.37967

Ishida, A., & Sekiyama, T. (2024). Variables influencing students' learning motivation: Critical literature review. *Frontiers in Education*, *9*, 1445011. https://doi.org/10.3389/feduc.2024.1445011

Kevin, K., Enjeli, M., & Wijaya, A. (2024). Sentiment analysis of Kinemaster application usage using the naive bayes method. *Jurnal Ilmiah Computer Science*, *2*(2), 89-98.

Keyser, E., & Viljoen, M. (2015). Self-regulated learning as predictor of academic performance: A study among second-year economics students. *International Journal of Educational Sciences*, *10*(1), 121–129.

Kong, Y. (2021). The role of experiential learning on students' motivation and classroom engagement. *Frontiers in Psychology*, *12*, 771272. https://doi.org/10.3389/fpsyg.2021.771272

Kyndt, E., Raes, E., Lismont, B., Timmers, F., Cascallar, E., & Dochy, F. (2013). A meta-analysis of the effects of face-to-face cooperative learning. Do recent studies falsify or verify earlier findings? *Educational Research Review*, *10*, 133-149. https://doi.org/10.1016/j.edurev.2013.02.002

Laeli, A. N., & Cahayani, E. A. (2023). *Reflection on implementing TikTok related to student motivation in learning news item.* Paper presented at the Proceedings of the International Conference on Education of Suryakancana.

Lazarides, R., Schiefele, U., Daumiller, M., & Dresel, M. (2025). From teacher motivation to teaching behaviour: A systematic review of the mediating processes. *Educational Research Review*, *48*, 100703. https://doi.org/10.1016/j.edurev.2025.100703

Leitão, R., Maguire, M., Turner, S., & Guimarães, L. (2022). A systematic evaluation of game elements effects on students' motivation. *Education and Information Technologies*, *27*(1), 1081-1103. https://doi.org/10.1007/s10639-021-10651-8

Manavipour, D., & Saeedian, Y. (2016). The role of self-compassion and control belief about learning in university students' self-efficacy. *Journal of Contextual Behavioral Science*, *5*(2), 121-126. https://doi.org/10.1016/j.jcbs.2016.02.003

Minalla, A. A. (2022). From EFL teachers' perspective: Impact of EFL learners' demotivation on interactive learning situations at EFL classroom contexts. *English Language Teaching*, *15*(3), 1-8. https://doi.org/10.5539/elt.v15n3p1

Muwonge, C. M., Schiefele, U., Ssenyonga, J., & Kibedi, H. (2017). Self-regulated learning among teacher education students: Motivational beliefs influence on the use of metacognition. *Journal of Psychology in Africa*, *27*(6), 515-521. https://doi.org/10.1080/14330237.2017.1399973

Nemati, Z., Gawrilow, C., Moinzadeh, A., & Rosler, M. (2020). Self-regulation and mathematics performance in German and Iranian university students: The role of field of study. *Psychology in the Schools*, *57*(7), 1081–1094.

Özen, O. S. (2017). The effect of motivation on student achievement. In The factors effecting student achievement: Meta-analysis of empirical studies. In (pp. 35-56). Cham: Springer International Publishing.

Pintrich, P. R., Smith, D. A. F., García, T., & McKeachie, W. J. (1991). *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ) (NCRIPTAL-91-B-004)*. United States: University of Michigan, National Center for Research to Improve Postsecondary Teaching and Learning.

Ruos, D., Em, S., Bamrungsin, P., & Khampirat, B. (2025). The impact of instructional behaviors on learning motivation via subjective task value in high school students in Cambodia. *Scientific Reports*, *15*(1), 17344. https://doi.org/10.1038/s41598-025-02147-z

Šakan, D., Tóth-Király, I., & Morin, A. J. S. (2024). Nature, implications and determinants of academic motivation profiles among upper elementary and secondary students. *Current Psychology*, *43*(6), 4899-4917. https://doi.org/10.1007/s12144-023-04687-x

Samoshkina, I. (2024). Applied learning in higher education: Bridging the gap between theory and practice. *Proceedings of the International Conference on Modern Research in Education, Teaching and Learning*, *3*(1), 25–34. https://doi.org/10.33422/icmetl.v3i1.271

Schwinger, M., & Trautner, M. (2020). Integrating the concepts self-efficacy and motivation regulation: How do self-efficacy beliefs for motivation regulation influence self-regulatory success? *Learning and Individual Differences*, *80*, 101890.

Seetee, N., Chi, C., Dhir, A., & Chen, S. (2021). Validation of the science, mathematics, and English task value scales based on longitudinal data. *International Journal of Science and Mathematics Education*, *19*(3), 443–460. https://doi.org/10.1007/s10763-020-10081-x

Selvarajoo, P. C. B., & Baharudin, S. N. A. (2023). Factors contributing to poor academic achievement among underachieving students in a high school in Klang Valley: A case study. *International Journal of Academic Research in Business and Social Sciences*, *13*(4), 1669–1679. https://doi.org/10.6007/ijarbss/v13-i4/16902

Shah, S. R., Hussain, M. A., & Nasseef, O. A. (2013). Factors impacting EFL teaching: An exploratory study in the Saudi Arabian context. *Arab World English Journal*, *4*(3), 104–123.

Suharnadi, P., Neviyarni, S., & Nirwana, H. (2024). The role and function of learning motivation in improving student academic achievement. *Manajia: Journal of Education and Management*, *2*(1), 1-8. https://doi.org/10.58355/manajia.v2i1.25

Tejero-Mena, R., Cuevas-Sosa, S. T., & Solís-Guillén, J. F. (2020). The learner's self-regulation and academic success in the university context. *Revista Electrónica de Investigación Educativa*, *22*, 1–12.

Turoski, S. A., & Schell, W. J. (2020). *Advancing student motivation and course interest through a utility value intervention in an engineering design context*. Paper presented at the Proceedings of the Canadian Engineering Education Association.

Van Zile-Tamsen, C. (1997). Examining metacognitive self-regulation within the context of daily academic tasks. Doctoral Dissertation, Buffalo, United States: State University of New York.

Wang, K. S., Yang, Y.-Y., & Delgado, M. R. (2021). How perception of control shapes decision making. *Current Opinion in Behavioral Sciences*, *41*, 85-91. https://doi.org/10.1016/j.cobeha.2021.04.003

Xiong, X. (2025). Influence of teaching styles of higher education teachers on students 'engagement in learning: The mediating role of learning motivation. *Education for Chemical Engineers*, *51*, 87-102. https://doi.org/10.1016/j.ece.2025.02.005

Yang, Y., Chen, J., & Zhuang, X. (2025). Self-determination theory and the influence of social support, self-regulated learning, and flow experience on student learning engagement in self-directed e-learning. *Frontiers in Psychology*, *16*, 1545980. https://doi.org/10.3389/fpsyg.2025.1545980

Appendix 1. Measurement Indicators.

Constructs	Indicator	References
Self-regulation	During class time, I often miss important points because I am thinking of other things.	Pintrich, Smith, García, and McKeachie (1991)
	When reading for this course, I make up questions to help focus my reading.	
	When I become confused about something, I read for this class and go back to try to figure it out.	
	If course materials are difficult to understand, I change the way I read the material.	
Task value	I think I will be able to use what I learn in this course in other courses	Pintrich et al. (1991)
	It is important for me to learn the course material in this class	
	I am very interested in the content area of this course	
	I think the course material in this class is useful for me to learn.	
Control of learning	If I study appropriate methods, then I will be able to learn the material in this course.	Pintrich et al. (1991)
	It is my own fault if I don't understand the material in this course.	
	If I try hard enough, then I will understand the course material.	
	If I don't understand the course materials, it is because I didn't try hard enough.	
Student motivation	Getting a good grade in this class is the most satisfying thing for me right now.	Pintrich et al. (1991)
	The most important thing for me right now is improving my overall grade point average, so my main concern in this class is getting a good grade.	
	I want to do well in this class because it is important to demonstrate my ability to family, friends, employers, or others.	
	I want to get better grades in this class than most of the other students.	