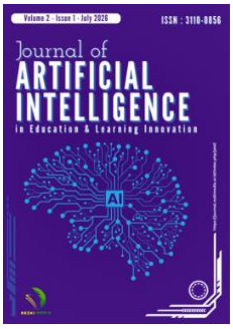

Sports technology acceptance as a predictor of academic commitment among undergraduate physical education students in China

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ABSTRACT

Background: Sports analytics and digital learning technologies are increasingly incorporated into physical education and sport-related higher education. However, evidence regarding the relationship between students' acceptance of sports-related technologies and their academic commitment remains limited, particularly among undergraduate Physical Education students in China.

Objectives: This study aimed to examine the association between Sports Technology Acceptance (STA) and Academic Commitment and to determine whether STA statistically predicts Academic Commitment within a cross-sectional structural model among undergraduate Physical Education students.

Methods: This quantitative study employed a cross-sectional correlational design involving 150 undergraduate students enrolled in the Bachelor of Physical Education program at Inner Mongolia Normal University, China, who were recruited using convenience sampling. Data were collected using the Higher Education Student Commitment Scale and an adapted Technology Use Tendency Scale in the Classroom to assess STA. Descriptive statistics, Pearson correlation analysis, and structural equation modeling (SEM) were performed using IBM SPSS Statistics 26 and IBM SPSS Amos 24.

Results: The mean Academic Commitment score was 3.68 (SD = 0.71), while the mean STA score was 4.01 (SD = 0.65). STA was moderately and positively correlated with Academic Commitment ($r = .47$, $p < .01$). The structural model showed a significant positive path from STA to Academic Commitment ($\beta = .49$, $t = 6.81$, $p < .001$), accounting for 24% of the variance in Academic Commitment ($R^2 = .24$). The reported model-fit indices indicated acceptable fit (CFI = .956, RMSEA = .057).

Conclusions: Sports Technology Acceptance was moderately and positively associated with Academic Commitment among undergraduate Physical Education students at one university in China. Within the cross-sectional structural model, STA accounted for 24% of the variance in Academic Commitment; therefore, the observed statistical prediction should not be interpreted as evidence of temporal or causal effects.

Keywords: academic commitment, physical education students, sports technology acceptance, technology acceptance, technology-enhanced learning.

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INTRODUCTION

The rapid development of digital technologies has transformed teaching and learning across higher education, including Physical Education and sport-related programs. Learning management systems, wearable devices, sports analytics platforms, motion-analysis software, and mobile applications provide opportunities for students to access learning resources, monitor physical performance, analyze movement patterns, and engage with performance data. Nevertheless, the availability of digital technology does not necessarily imply that students accept, regularly use, or effectively integrate these technologies into their learning. Students may differ substantially in their attitudes toward technology and their willingness to use technology-supported learning tools (Davis, 1989; Venkatesh et al., 2003). Understanding these individual differences is particularly relevant in Physical Education, where digital technologies increasingly intersect with both theoretical learning and practical performance analysis.

Academic commitment represents an important psychological dimension of students' experiences in higher education. It broadly reflects students' attachment and dedication to their academic experience and their willingness to persist in pursuing educational goals. Although academic commitment is related to student engagement, the two constructs should not be treated as interchangeable: engagement generally concerns students' behavioral, cognitive, and emotional involvement in learning activities, whereas commitment reflects a more enduring attachment and dedication to academic or institutional goals. Empirical evidence supports the relevance of commitment to important educational outcomes. A meta-analysis by Schuster and King (2022) found that institutional commitment had a small positive association with first-year student retention, although goal commitment was not significantly related to retention. Similarly, Nigussie Worku and Gita (2024) demonstrated that academic commitment was involved in the relationship between academic resilience and academic performance among undergraduate students. Longitudinal evidence further indicates that degree commitment assessed at university entry significantly predicts subsequent degree attainment, multi-year retention, and cumulative grade point average (Yukhymenko-Lescroart & Sharma, 2026). Related evidence also suggests that students' institutional attachment is associated with lower dropout intentions (Okros et al., 2025). Collectively, these findings indicate that commitment-related constructs are relevant to students' persistence and academic outcomes, while also highlighting the importance of distinguishing among academic, degree, and institutional forms of commitment.

Alongside technological developments, students' commitment to their academic experience remains an important consideration in higher education. Academic commitment refers to students' psychological attachment to their educational institution and their willingness to remain invested in their academic experience and goals. Although academic commitment is related to student engagement, the two concepts should not be treated as interchangeable. Engagement generally concerns students' behavioral, cognitive, and emotional involvement in learning activities, whereas commitment reflects a broader attachment and dedication to their educational experience. Higher levels of student engagement and commitment have been associated in the literature with favorable educational experiences, persistence, and academic outcomes (Kahu, 2013). Accordingly, identifying factors associated

with Academic Commitment may contribute to understanding how students relate to their university learning environment.

Technology acceptance provides one potential perspective for examining these relationships. The Technology Acceptance Model (TAM) proposes that perceived usefulness and perceived ease of use contribute to individuals' attitudes, behavioral intentions, and subsequent technology use (Davis, 1989). Related technology-acceptance frameworks have also demonstrated that users' perceptions and intentions are important in explaining technology adoption (Venkatesh et al., 2003). In educational contexts, technology-supported learning environments have been associated with student engagement, participation, and learning experiences (Schindler et al., 2017). More recent evidence has also linked technology acceptance with student engagement and perceived learning outcomes (Kala & Chaubey, 2023) and with self-regulated learning through motivational and engagement-related mechanisms (An et al., 2024).

However, the present study does not directly measure the core TAM constructs of perceived usefulness and perceived ease of use. Instead, Sports Technology Acceptance (STA) is operationalized through emotional and behavioral acceptance based on an adaptation of the Technology Use Tendency Scale in the Classroom developed by Günüç and Kuzu (2014). Therefore, TAM is used in this study as a theoretical perspective for understanding technology acceptance rather than as a complete empirical test or theoretical extension of the original TAM. This distinction is important because positive acceptance of technology should not be equated with actual frequency of technology use or with the quality of technology integration in teaching and learning.

Empirical research has begun to examine the relationship between technology acceptance and students' commitment to higher education. Doğan and Akça (2025), for example, reported a positive relationship between technology acceptance and student commitment among Turkish higher education students. However, evidence from general higher education settings cannot necessarily be assumed to represent discipline-specific contexts. Physical Education students encounter technologies that may serve both academic and performance-oriented purposes, including wearable devices, activity-monitoring technologies, and digital performance-analysis tools. Previous research has demonstrated educational applications of wearable technologies and their potential to support feedback, self-monitoring, and learning experiences (Ferrier et al., 2022; Page et al., 2020). These characteristics provide a relevant context in which to examine students' acceptance of technology in relation to their academic commitment.

Despite this emerging literature, evidence directly examining Sports Technology Acceptance in relation to Academic Commitment among undergraduate Physical Education students remains limited. Existing studies cited in the present research have primarily examined technology acceptance in broader educational contexts or investigated the educational applications of specific technologies rather than the relationship between acceptance of sports-related technologies and Academic Commitment. Furthermore, the evidence cited above represents different populations and educational contexts, including Turkish higher education and other technology-supported learning environments. Consequently, whether a comparable relationship is observed among undergraduate Physical Education students in a Chinese university remains an empirical question.

The present study addresses this gap by examining the relationship between Sports Technology Acceptance and Academic Commitment among undergraduate students enrolled in the Bachelor of Physical Education program at Inner Mongolia Normal University, China. Rather than proposing a theoretical extension of TAM, the study provides a discipline- and context-specific examination of whether students' emotional and behavioral acceptance of sports-related digital technologies is statistically associated with their Academic Commitment. In doing so, the study contributes evidence from a population and educational setting that has received limited attention within the literature considered in this study. Because the research employs a cross-sectional design, however, any predictive relationship estimated in the structural model represents statistical prediction and should not be interpreted as evidence of temporal precedence or causality.

Accordingly, the purpose of this study was to examine the association between Sports Technology Acceptance and Academic Commitment and to determine whether Sports Technology Acceptance statistically predicts Academic Commitment within a cross-sectional structural model among undergraduate Physical Education students at Inner Mongolia Normal University, China. Based on previous evidence indicating positive relationships between technology acceptance and student-related educational outcomes, the following hypothesis was proposed:

H1: Sports Technology Acceptance is positively associated with Academic Commitment among undergraduate Physical Education students.

METHODS

Study Design and Participants

This study employed a quantitative cross-sectional correlational design to examine the association between Sports Technology Acceptance (STA) and Academic Commitment among undergraduate Physical Education students. Structural equation modeling (SEM) was used as the primary analytical approach to estimate the hypothesized relationship between the study constructs.

The study involved 150 undergraduate students enrolled in the Bachelor of Physical Education program at Inner Mongolia Normal University, China. Participants were recruited using convenience sampling based on their accessibility and willingness to participate. Eligible participants were required to be actively enrolled as undergraduate students in the Bachelor of Physical Education program and to provide informed consent to participate.

The final sample consisted of 92 male (61.3%) and 58 female (38.7%) students. Participants ranged in age from 18 to 25 years, with a mean age of 21.1 years (SD = 1.8). No a priori power analysis was conducted to determine the sample size; rather, the sample size reflected the number of eligible and consenting students available during the data-collection period. Because sample-size requirements for SEM depend on several factors, including model complexity, estimator, indicator characteristics, and expected effect sizes, the adequacy of the present sample should be considered when interpreting the stability and generalizability of the model estimates.

Ethical approval statement

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki for research involving human participants. Ethical approval was obtained from the Ethics Committee of the Mongolian National University of

Medical Sciences on November 4, 2025 (Protocol No. 2025/4-28). Prior to data collection, all participants were informed of the study's purpose and procedures, the voluntary nature of their participation, and their right to withdraw at any time without penalty. Written informed consent was obtained from all participants before participation. The confidentiality and anonymity of participants' information were strictly maintained throughout the study, and all data were used solely for research purposes.

Research Instruments

Two self-report instruments were used to assess Academic Commitment and Sports Technology Acceptance (STA). Academic Commitment was measured using the Higher Education Student Commitment Scale developed by Çınkır, Kurum, and Yıldız (2021). The scale consists of 14 items covering three dimensions: emotional commitment, behavioral commitment, and cognitive commitment. Responses are rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating greater Academic Commitment. The original scale demonstrated satisfactory psychometric properties, with a Cronbach's alpha coefficient of .92. In the present study, the scale also demonstrated high internal consistency (Cronbach's $\alpha = .91$).

Sports Technology Acceptance (STA) was assessed using an adapted version of the Technology Use Tendency Scale in the Classroom developed by Günüç and Kuzu (2014). The original instrument was designed to assess students' tendencies toward technology use in educational settings. For the present study, the instrument was contextualized to sports-related and digitally supported learning environments. The adapted measure consisted of 12 items representing two dimensions: emotional acceptance and behavioral acceptance. Items were rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating greater acceptance of sports-related technologies. In the present sample, the adapted measure demonstrated high internal consistency (Cronbach's $\alpha = .89$).

In this study, STA refers specifically to students' self-reported emotional and behavioral acceptance of sports-related digital technologies. It should therefore be distinguished from actual technology use, frequency of technology use, or the quality of technology integration in teaching and learning. Although the Technology Acceptance Model (TAM) provides a broader theoretical perspective for understanding technology acceptance, the adapted STA measure used in this study does not directly assess the core TAM constructs of perceived usefulness and perceived ease of use. Accordingly, STA was treated as an operational measure of students' acceptance of sports-related technologies rather than as a complete measurement of the original TAM framework.

Data Collection Procedure

Data were collected on December 2, 2025, from undergraduate students enrolled in the Bachelor of Physical Education program at Inner Mongolia Normal University, China. Participants were recruited using convenience sampling based on their accessibility and willingness to participate. Before completing the questionnaires, participants were informed about the purpose of the study, the voluntary nature of participation, and the confidentiality of their responses. Informed consent was obtained from all participants before questionnaire completion.

Participants completed the Higher Education Student Commitment Scale and the adapted Technology Use Tendency Scale in the Classroom used to assess Sports Technology Acceptance (STA). Both instruments were administered during the same data-collection period, and responses were based on participants' self-reports. Participants were informed that their responses would be treated anonymously and confidentially.

Data Analysis

Data were analyzed using IBM SPSS Statistics 26 and IBM SPSS Amos 24. Descriptive statistics, including frequencies, percentages, means, standard deviations, skewness, and kurtosis, were calculated to summarize participant characteristics and the study variables. The distribution of the study variables was evaluated using skewness and kurtosis values.

Internal consistency and convergent validity were evaluated using Cronbach's alpha (α), composite reliability (CR), and average variance extracted (AVE). Pearson's correlation coefficient was used to examine the bivariate association between Sports Technology Acceptance (STA) and Academic Commitment.

Structural equation modeling (SEM) was subsequently used to estimate the hypothesized relationship between STA and Academic Commitment. Model fit was evaluated using the chi-square to degrees-of-freedom ratio (χ^2/df), Comparative Fit Index (CFI), Non-Normed Fit Index (NNFI), Standardized Root Mean Square Residual (SRMR), and Root Mean Square Error of Approximation (RMSEA). Model fit was considered acceptable when $\chi^2/df < 5.00$, CFI and NNFI $\geq .90$, SRMR $\leq .08$, and RMSEA $\leq .08$. The standardized path coefficient (β) and coefficient of determination (R^2) were used to describe the estimated relationship between STA and Academic Commitment and the proportion of variance in Academic Commitment accounted for by STA, respectively. Statistical significance was evaluated at $p < .05$. Because the study employed a cross-sectional design, the directional path specified in the structural model was interpreted as a statistical predictive relationship rather than evidence of temporal precedence or causality.

RESULTS

Descriptive statistics for Academic Commitment, overall Sports Technology Acceptance (STA), Emotional Acceptance, and Behavioral Acceptance are presented in Table 1. Academic Commitment had a mean score of 3.68 (SD = 0.71), while the mean overall STA score was 4.01 (SD = 0.65). Among the STA dimensions, Emotional Acceptance had a mean score of 4.08 (SD = 0.67), whereas Behavioral Acceptance had a mean score of 3.93 (SD = 0.74). Skewness values ranged from -0.41 to -0.27, and kurtosis values ranged from -0.21 to -0.08, indicating no substantial departures from normality based on the reported distributional indices.

Table 1. Descriptive Statistics of Scale Scores

Scale and Sub-scales	N	Min.	Max.	Mean	SD	Skewness	Kurtosis
Academic Commitment	150	1	5	3.68	0.71	-0.29	-0.21
Sports Technology Acceptance (STA)	150	1	5	4.01	0.65	-0.34	-0.17
Emotional Acceptance	150	1	5	4.08	0.67	-0.41	-0.12
Behavioural Acceptance	150	1	5	3.93	0.74	-0.27	-0.08

Pearson correlation analysis showed a statistically significant positive association between STA and Academic Commitment ($r = .47$, $p < .01$). Thus, participants

reporting higher levels of Sports Technology Acceptance also tended to report higher levels of Academic Commitment. The magnitude of the correlation indicated a moderate positive association between the two variables.

Table 2. Pearson Correlation Analysis Results

Variables	N	1	2
Academic Commitment	150	1	0.47**
Sports Technology Acceptance	150		1

*Note. *p < .05. **p < .01.*

Pearson correlation analysis revealed a positive and statistically significant relationship between Sports Technology Acceptance and Academic Commitment ($r = 0.47$, $p < 0.01$) (Table 2). The result indicates that students with higher acceptance of sports analytics and digital learning technologies tended to report stronger academic commitment.

Overall, the results indicate that greater acceptance of sports-related digital technologies is associated with stronger academic Commitment among sport science students. Therefore, the correlation analysis provides preliminary support for the proposed structural model.

Table 3. Structural Model Results for the Association Between Sports Technology Acceptance and Academic Commitment

Predictor	Outcome	β	*t*	*p*	R^2
Sports Technology Acceptance	Academic Commitment	.49	6.81	< .001	.24

Note. Model-fit indices: $\chi^2/df = 2.114$, SRMR = .048, NNFI = .948, CFI = .956, RMSEA = .057.

The structural model showed a statistically significant positive path from STA to Academic Commitment ($\beta = .49$, $t = 6.81$, $p < .001$) (Table 3). The coefficient of determination was $R^2 = .24$, indicating that STA accounted for 24% of the variance in Academic Commitment within the specified model.

The reported model-fit indices were $\chi^2/df = 2.114$, SRMR = .048, NNFI = .948, CFI = .956, and RMSEA = .057. Based on the prespecified fit criteria, these indices indicated an acceptable fit of the specified model to the observed data. The positive standardized path coefficient was consistent with H1, indicating that higher self-reported STA was statistically associated with higher Academic Commitment.

Given the cross-sectional design, however, the directional path should be interpreted as a statistical predictive relationship within the specified model rather than evidence that STA temporally or causally influences Academic Commitment.

DISCUSSION

This study examined the association between Sports Technology Acceptance (STA) and Academic Commitment among undergraduate Physical Education students in China. The findings showed a moderate positive correlation between STA and Academic Commitment ($r = .47$, $p < .01$). Consistent with this bivariate association, the structural model showed a significant positive path from STA to Academic Commitment ($\beta = .49$, $p < .001$), with STA accounting for 24% of the variance in Academic Commitment ($R^2 = .24$). These findings support H1 and indicate that students reporting greater emotional and behavioral acceptance of sports-related digital technologies also tended to report stronger Academic Commitment. Because the data were collected cross-sectionally, however, this relationship should be interpreted as a statistical association within the specified

model rather than evidence that technology acceptance causes or precedes changes in Academic Commitment.

The present findings are generally consistent with previous evidence linking technology acceptance with student-related educational outcomes. Doğan and Akça (2025) reported a positive relationship between technology acceptance and student commitment among university students in Türkiye, with technology acceptance accounting for approximately 12% of the variance in student commitment. The present study showed a larger proportion of accounted variance (24%) among undergraduate Physical Education students. However, this difference should be interpreted cautiously because the studies involved different populations, educational contexts, and operationalizations of technology acceptance and commitment. Rather than demonstrating that technology acceptance is more influential in Physical Education, the present findings suggest that the positive relationship reported in broader higher education settings may also be observed in a discipline-specific Physical Education context.

The findings can also be considered in relation to previous studies linking technology acceptance with engagement, motivation, and self-regulated learning. Kala and Chaubey (2023) reported associations between technology acceptance, student engagement, and perceived learning outcomes, while An et al. (2024) identified motivational and engagement-related mechanisms in the relationship between technology acceptance and self-regulated learning. Technology-supported learning environments have likewise been associated with student participation and learning experiences (Schindler et al., 2017). Nevertheless, engagement, self-regulated learning, and Academic Commitment represent conceptually distinct constructs. The present study measured Academic Commitment rather than engagement or self-regulated learning; therefore, these previous findings provide contextual support rather than direct evidence for the relationship examined here.

One possible interpretation of the observed association is that students who are more receptive to sports-related digital technologies may perceive technology-supported learning environments as more compatible with their academic experiences. In Physical Education, digital technologies can be used to provide performance-related information, facilitate self-monitoring, and support feedback during learning activities. Previous studies have described educational applications of wearable and digital technologies that can support feedback, self-monitoring, and participation in learning (Ferrier et al., 2022; Page et al., 2020). Such learning experiences may be relevant to students' connection with their academic environment. However, these mechanisms were not directly measured in the present study and should therefore be regarded as possible explanations requiring further empirical investigation rather than demonstrated mediating processes.

The findings should also be interpreted carefully in relation to the Technology Acceptance Model (TAM). TAM proposes that perceived usefulness and perceived ease of use contribute to attitudes and behavioral intentions toward technology use (Davis, 1989). However, the STA measure used in the present study assessed emotional and behavioral acceptance and did not directly measure perceived usefulness or perceived ease of use. Consequently, the findings should not be interpreted as a direct empirical test or extension of the original TAM. Instead, TAM provides a broader theoretical perspective for understanding why positive orientations toward technology may be relevant to students' educational experiences. Future studies could explicitly measure perceived usefulness, perceived ease of use,

behavioral intention, actual technology use, and Academic Commitment within the same model to examine these theoretical pathways more directly.

The proportion of variance accounted for by STA also warrants consideration. Although STA accounted for 24% of the variance in Academic Commitment, a substantial proportion of variance remained unaccounted for by the model. Academic Commitment is likely related to multiple individual, social, and institutional factors beyond technology acceptance. Previous research has linked commitment-related constructs with important educational outcomes, including academic performance, persistence, retention, and degree attainment (Schuster & King, 2022; Nigussie Worku & Gita, 2024; Yukhymenko-Lescroart & Sharma, 2026). Therefore, future models should examine STA alongside factors such as academic motivation, self-efficacy, social support, instructional quality, and learning environment to provide a more comprehensive account of Academic Commitment.

From an educational perspective, the findings suggest that students' acceptance of sports-related technologies is relevant to their broader academic experience. Universities and Physical Education programs may therefore benefit from considering students' perceptions and acceptance when implementing digital learning and sport-related technologies. However, the present findings do not demonstrate that introducing additional technologies will increase Academic Commitment. Technology acceptance should also be distinguished from actual technology use and from the pedagogical quality of technology integration. Accordingly, educational initiatives should focus not only on providing access to digital tools but also on ensuring that their use is pedagogically meaningful, accessible, and aligned with course learning objectives. Longitudinal and intervention-based research is required before stronger recommendations can be made regarding whether improvements in technology acceptance or technology-supported instruction lead to subsequent changes in Academic Commitment.

LIMITATIONS OF THE STUDY

Several limitations should be considered when interpreting the findings of this study. First, the cross-sectional design does not establish temporal precedence or causality between Sports Technology Acceptance (STA) and Academic Commitment. Although a directional path from STA to Academic Commitment was specified in the structural model, the findings represent a statistical predictive association at a single point in time. Reverse or reciprocal relationships are also plausible; for example, students with stronger Academic Commitment may be more receptive to sports-related digital technologies. Longitudinal and experimental studies are therefore needed to clarify the direction of this relationship.

Second, participants were recruited using convenience sampling from a single Bachelor of Physical Education program at Inner Mongolia Normal University, China. The findings should therefore not be generalized to all Physical Education or sport science students in China or to students in other disciplines, institutions, or cultural contexts. Future research should employ larger, multi-institutional samples and probability-based sampling approaches where feasible.

Third, both STA and Academic Commitment were assessed using self-report questionnaires during the same data-collection period. Consequently, the observed association may be affected by common-method variance, social desirability, and other response-related biases. A formal statistical assessment of common-method

variance was not available for the present analysis. Future studies should combine self-report measures with objective indicators of technology use, academic performance, or other behavioral outcomes and incorporate appropriate procedural and statistical approaches to evaluate common-method bias.

Fourth, STA was assessed using an adapted version of the Technology Use Tendency Scale in the Classroom. The adapted measure captured emotional and behavioral acceptance but did not directly assess the core Technology Acceptance Model constructs of perceived usefulness and perceived ease of use. In addition, detailed documentation regarding the linguistic translation and cultural adaptation procedures for the instruments was not available. These limitations constrain conclusions regarding the cross-cultural measurement equivalence and construct validity of the measures in the present Chinese context. Future studies should undertake and report systematic translation, cultural adaptation, and psychometric validation procedures before examining structural relationships across populations.

Fifth, the available SEM documentation did not include all recommended measurement- and structural-model statistics, such as separate confirmatory factor analysis results, the model chi-square and degrees of freedom, the 90% confidence interval for RMSEA, and confidence intervals for the structural estimates. Accordingly, the SEM findings should be interpreted on the basis of the available reported indices and replicated in future studies with more comprehensive measurement-model assessment and statistical reporting.

Finally, STA accounted for 24% of the variance in Academic Commitment, indicating that a substantial proportion of variability remained unaccounted for by the specified model. Academic Commitment is likely related to additional individual, interpersonal, and institutional factors that were not included in the present study. Future research could examine variables such as academic motivation, self-efficacy, social support, instructional quality, and learning environment within more comprehensive theoretical models.

CONCLUSIONS

This study found a moderate positive association between Sports Technology Acceptance (STA) and Academic Commitment among undergraduate Physical Education students at Inner Mongolia Normal University, China. Within the specified cross-sectional structural model, higher self-reported STA was associated with higher Academic Commitment, with STA accounting for 24% of the variance in Academic Commitment. These findings suggest that students' emotional and behavioral acceptance of sports-related digital technologies is relevant to their academic experience; however, the cross-sectional design does not establish temporal precedence or causality. Therefore, the findings should not be interpreted as evidence that increasing technology acceptance or integrating additional digital technologies will necessarily improve Academic Commitment. Future longitudinal and multi-institutional studies should examine the direction of this relationship and incorporate objective measures of technology use and academic outcomes, as well as additional individual, social, and institutional factors that may contribute to Academic Commitment.

AI DISCLOSURE STATEMENT

In sections where the authors considered the wording or sentence structure to be overly complex, DeepSeek was used to assist in paraphrasing and improving the readability, grammar, and clarity of the text. All AI-assisted outputs were carefully reviewed, revised, and adapted by the authors to ensure accuracy and consistency with the intended meaning. The authors take full responsibility for the accuracy, integrity, and content of the manuscript.

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DATA AVAILABILITY

The data supporting the findings of this study are available from the corresponding author upon reasonable request. Due to the qualitative nature of the study and the need to protect participant confidentiality, the full interview transcripts are not publicly available.

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This research received no external funding.

CONFLICT OF INTEREST

The author hereby declares that this research is free from conflicts of interest with any party.

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