

Academic Self-Efficacy, Online Learning Motivation, and Perceptions of ChatGPT Among Higher Education Students

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ABSTRACT

Online learning requires students to maintain confidence and motivation while independently managing academic and technological challenges. The growing use of ChatGPT has introduced further opportunities and concerns regarding technology-supported learning. This study examined academic self-efficacy, online learning motivation, and perceptions of ChatGPT among higher-education students. It also investigated differences according to gender, field of study, and level of study and examined the relationships among the variables. A quantitative survey design was employed with a convenience sample of 162 respondents. Data were collected using a 53-item, five-point Likert-scale questionnaire adapted from Fowler (2018) and Youssef et al. (2024) and analysed using descriptive statistics, independent-samples t-tests, and Pearson correlation analysis. Students generally demonstrated positive academic self-efficacy, online learning motivation, and perceptions of ChatGPT. No significant differences in online learning motivation or perceptions of ChatGPT were identified according to gender or field of study. However, degree students demonstrated higher online learning motivation and more positive perceptions of ChatGPT than diploma students. Academic self-efficacy was positively related to expectancy, value, social support, and perceptions of ChatGPT. The findings highlight the importance of strengthening students' confidence, providing meaningful and socially supportive online learning experiences, and integrating ChatGPT through structured AI-literacy guidance that promotes critical and responsible use.

Keywords: academic self-efficacy; online learning motivation; ChatGPT; higher education students; technology-supported learning

INTRODUCTION

Background of Study

The expansion of online learning requires students to manage their learning independently, remain engaged, and overcome academic and technological challenges. Their motivation is shaped by expectations of success, perceived task value, and social support (Fowler, 2018), while academic self-efficacy influences their effort and persistence when facing difficulties (Bandura, 1997). Research has shown that students' confidence, task value, and instructor support are closely associated with online learning motivation (Jenal et al., 2025; Taib et al., 2024). Meanwhile, ChatGPT has transformed online learning by providing immediate explanations, ideas, writing assistance, and alternative perspectives (Rahmat, 2026). Students are more likely to accept such technology when they perceive it as useful and easy to use (Davis, 1986), and studies have linked ChatGPT with improved understanding, productivity, engagement, autonomous learning, critical thinking, and academic achievement (Alqurni, 2026; Rahmat, 2026; Youssef et al., 2024). Other than that, institutional guidance may further

strengthen students' perceptions of AI-supported learning (Jeilani & Abubakar, 2025). However, greater ChatGPT use has also been associated with procrastination and poorer academic performance, and it may not consistently enhance the relationship between motivation and performance (Daha & Altelwany, 2025; Mahande et al., 2026). These mixed findings highlight the importance of examining academic self-efficacy, online learning motivation, and perceptions of ChatGPT together to better understand their relationships and promote purposeful AI use in higher education.

Statement of Problem

Online learning requires students to remain motivated, regulate their learning, and manage academic and technological challenges independently, making academic self-efficacy essential to their effort and persistence (Bandura, 1997). However, students may value online learning while remaining uncertain about their ability to succeed or experiencing assessment anxiety, and findings concerning demographic differences in motivation and ChatGPT use remain inconsistent (Fowler, 2018; Jenal et al., 2025; Rahmat, 2026; Taib et al., 2024). Although ChatGPT may support understanding, productivity, autonomy, engagement, and critical thinking (Alqurni, 2026; Rahmat, 2026; Youssef et al., 2024), greater use has also been associated with procrastination and poorer academic performance, and may not consistently strengthen the relationship between motivation and performance (Daha & Altelwany, 2025; Mahande et al., 2026). Its acceptance may further depend on perceived usefulness, ease of use, and institutional support (Davis, 1986; Jeilani & Abubakar, 2025). Since previous studies have generally examined these variables separately or in different combinations, limited understanding remains regarding students' levels of academic self-efficacy, online learning motivation, and perceptions of ChatGPT; differences according to gender and level of study; and the relationships among these variables. Therefore, this study examines these factors within a common student population to provide a more integrated understanding of their interrelationships.

Objective of the Study and Research Questions

- This study is done to examine the relationships between academic self-efficacy, dimensions of online learning motivation, and perceptions of ChatGPT. Specifically, this study is done to answer the following questions:
- RQ1: Are there significant differences in online learning motivation according to gender, field of study, and level of study?
- H₀₁: There are no statistically significant differences in online learning motivation according to gender, field of study, and level of study.
- RQ2: Are there significant differences in students' perceptions of ChatGPT according to gender, field of study, and level of study?
- H₀₂: There are no statistically significant differences in students' perceptions of ChatGPT according to gender, field of study, and level of study.
- RQ3: How do learners perceive their academic self-efficacy in online learning?
- RQ4: How do learners perceive their online learning motivation?
- RQ5: How do learners perceive ChatGPT in online learning?
- RQ6: Is there a relationship between academic self-efficacy and online learning motivation?
- H₀₃: There is no significant relationship between academic self-efficacy and online learning motivation.
- RQ7: Is there a relationship between academic self-efficacy and perceptions of ChatGPT?
- H₀₄: There is no significant relationship between academic self-efficacy and perceptions of ChatGPT.

LITERATURE REVIEW

Theoretical Framework of the Study

Self-Efficacy Theory by Bandura (1997)

Bandura's (1997) Self-Efficacy Theory explains that individuals' beliefs in their ability to perform a particular task influence their motivation, effort, persistence, and behaviour. Self-efficacy concerns what individuals

believe they can accomplish with their abilities rather than the abilities they possess. Those with high self-efficacy are more likely to accept challenging tasks, persist when difficulties arise, and recover from setbacks, whereas those with low self-efficacy may avoid challenges and give up more easily. These beliefs develop through four main sources: mastery experiences, vicarious experiences, verbal persuasion, and physiological and emotional states. In online learning, strong self-efficacy can help students manage their learning independently, overcome academic and technological challenges, and remain motivated to achieve their learning goals.

Technology Acceptance Model (TAM) by Davis (1986) and ChatGPT

The Technology Acceptance Model (TAM), introduced by Davis (1986), explains technology adoption primarily through perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which individuals believe that using a technology will improve their performance, whereas perceived ease of use concerns the effort required to use it. In the context of ChatGPT, students may be more inclined to adopt the tool when they perceive it as accessible and beneficial for understanding topics, exploring different perspectives, generating ideas, improving writing, and increasing learning productivity (Rahmat, 2026; Youssef et al., 2024). Alqurni (2026) similarly found that perceptions of AI intelligence and adaptability enhanced its perceived usefulness and ease of use, with ease of use strengthening users' AI-related self-efficacy. Institutional training, resources, and guidance may further promote favourable perceptions of AI-supported learning, particularly among students with lower technological confidence (Jeilani & Abubakar, 2025). Nevertheless, technology acceptance does not necessarily guarantee positive learning outcomes, as excessive or poorly regulated ChatGPT use may contribute to procrastination and poorer academic performance (Daha & Altelwany, 2025). Therefore, TAM provides a useful framework for understanding students' acceptance of ChatGPT, although its educational impact also depends on students' self-efficacy, motivation, patterns of use, and the support provided by their institutions.

Past Studies

Past Studies on Self-Efficacy and Online Learning Motivation

Self-efficacy refers to individuals' beliefs in their ability to organise and perform the actions required to achieve specific outcomes (Bandura, 1997). It is particularly important in online learning because students must independently manage their time and learning activities, use digital technologies, and overcome academic or technical difficulties. Students with stronger self-efficacy are more likely to undertake challenging tasks, invest effort, and persist when difficulties arise. Online learning motivation is similarly influenced by students' expectations of success, the value they attach to learning activities, and the social support they receive (Fowler, 2018). Taib et al. (2024) found a strong positive relationship between the value and expectancy components, indicating that students who recognise the importance of online learning are more likely to believe that they can succeed. However, assessment-related anxiety may negatively affect their confidence and ability to sustain motivation.

Students' self-efficacy and online learning motivation can be strengthened through meaningful learning activities, successful experiences, and supportive interactions. Jenal et al. (2025) found that students were motivated by task relevance and academic outcomes, although their moderate self-efficacy suggested that some remained uncertain about succeeding in online learning. Instructor feedback and encouragement are also important because social support is positively related to students' expectations of success and the value they place on learning (Jenal et al., 2025). Consistent with Bandura's (1997) theory, successful task completion, observation of capable peers, constructive feedback, and effective anxiety management can strengthen efficacy beliefs. Moreover, institutional training and technological resources may further increase students' confidence in participating in digitally supported learning (Jeilani & Abubakar, 2025). Thus, students who believe in their academic capabilities are more likely to value online learning, regulate their learning, persevere through challenges, and remain motivated to achieve their academic goals.

Past Studies on ChatGPT and Online Learning Motivation

ChatGPT may support online learning motivation by providing immediate and personalised assistance

that makes learning more accessible and engaging. Students can use the tool to clarify difficult information, explore alternative perspectives, develop ideas, improve their writing, and increase their productivity. Rahmat (2026) found that students used ChatGPT to support their understanding and productivity during online reading, while Youssef et al. (2024) reported positive relationships between ChatGPT use, student engagement, critical thinking, and academic achievement. ChatGPT may also promote learner autonomy by enabling students to obtain assistance outside formal class sessions and control the pace and direction of their learning. Meanwhile, Alqurni (2026) found that perceptions of AI as intelligent and adaptive enhanced its perceived usefulness, ease of use, and autonomy support, which subsequently contributed to stronger self-learning motivation and behaviour.

Nevertheless, ChatGPT does not automatically enhance motivation or learning outcomes because its effects depend on how students use it and the guidance they receive. Daha and Altelwany (2025) found that greater ChatGPT use was associated with increased procrastination and poorer academic performance, suggesting that excessive reliance may reduce independent effort and meaningful engagement. Mahande et al. (2026) similarly found that ChatGPT did not significantly strengthen the relationship between motivation and academic performance. Institutional training, resources, and clear guidance may encourage students to use AI more purposefully and develop positive perceptions of AI-supported learning (Jeilani & Abubakar, 2025). Students should also question ChatGPT's accuracy, request clarification, and compare its responses with other sources to engage more critically with generated information (Rahmat, 2026; Youssef et al., 2024). Therefore, ChatGPT is most likely to support online learning motivation when it is used as a tool for exploration and active learning rather than as a substitute for students' independent thinking and effort.

Conceptual Framework of the Study

The conceptual framework for this study (refer to Figure 1 below) is grounded in Self-Efficacy Theory, which posits that learners' beliefs in their capabilities strongly influence motivation, persistence, and performance (Bandura, 1997). Within this framework, self-efficacy is positioned as a key antecedent that shapes learners' expectancy of success, perceived task value, and their ability to seek and benefit from social support in learning environments. Drawing on research on online learning motivation, expectancy, value, and social support are recognised as core motivational dimensions that sustain engagement and persistence in digitally mediated learning contexts (Fowler, 2018). The framework further integrates the Technology Acceptance Model (TAM), which explains learners' motivation to use educational technologies through perceived usefulness and perceived ease of use (Davis, 1986). ChatGPT is also conceptualised as a digital learning support whose acceptance is strengthened when learners believe it enhances performance, reduces writing difficulty, and offers accessible assistance. Furthermore, empirical evidence supports this integration, as studies demonstrate that ChatGPT promotes learner engagement by enabling interaction, autonomy, and sustained participation in online learning (Rahmat, 2026). Moreover, ChatGPT has been shown to improve learners' critical thinking abilities, academic achievement, and overall engagement when used as a supportive learning tool rather than a substitute for instruction (Youssef et al., 2024). Collectively, the framework illustrates how self-efficacy influences motivational beliefs and social support, which in turn interact with technology acceptance to enhance learner motivation and engagement through ChatGPT-supported learning environments.

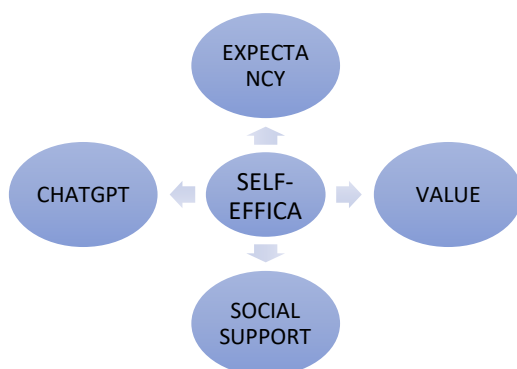


Figure 1- Conceptual Framework of the Study- The Relationships between Academic Self-Efficacy, Dimensions of Online Learning Motivation (Expectancy, Value, Social Support), and Perceptions of ChatGPT

METHODOLOGY

This quantitative study is done to examine relationships between academic self-efficacy, dimensions of online learning motivation, and perceptions of ChatGPT. A convenient sample of 162 respondents answered the survey. The instrument used is a 5-point Likert-scale survey that was adapted from Fowler (2018) for online learning motivation and Youssef et al. (2024) for ChatGPT to reveal the variables in Table 2 below. Table 1 below shows the categories used for the Likert scale: 1 is for never, 2 is for rarely, 3 is for sometimes, 4 is for often, and 5 is for always.

Table 1- Likert Scale Use

1	Never
2	Rarely
3	Sometimes
4	Often
5	Always

Table 2- Distribution of Items in the Survey

SECTION	VARIABLE	CONSTRUCT	SUB-CATEGORY	NO. OF ITEMS	TOTAL	CA
B	ONLINE MOTIVATI ON Fowler (2018)	EXPECTANCY	Self-Efficacy	7	7	.917
			Control of Learning Beliefs	4	4	.880
		VALUE	Intrinsic Goal Orientation	4	14	.939
			Extrinsic Goal Orientation	4		
			Task Value	6		
		SOCIAL SUPPORT	Social Engagement	5	12	.912
			Instructor Support	7		
C	CHATGPT Youssef et al. (2024)	Critical Thinking Abilities		4	16	.952
		Academic Achievement		4		
		ChatGPT Usage		5		
		Student Engagement		3		
					53	.974

Table 2 presents the distribution of the 53 items used in the survey and the Cronbach's alpha (CA) values for the measured variables and constructs. Section B measures online learning motivation using the instrument adapted from Fowler (2018). It contains 37 items across three constructs: expectancy, value, and social support. The expectancy construct comprises self-efficacy (7 items) and control of learning beliefs (4 items), with CA values of .917 and .880, respectively. The value construct contains 14 items covering intrinsic goal orientation (4 items), extrinsic goal orientation (4 items), and task value (6 items), and demonstrates excellent internal consistency (CA = .939). The social support construct consists of social engagement (5 items) and instructor support (7 items), totalling 12 items, with a CA value of .912.

Section C measures students' perceptions of ChatGPT using an instrument adapted from Youssef et al. (2024). It comprises 16 items across four dimensions: critical thinking abilities (4 items), academic achievement (4 items), ChatGPT usage (5 items), and student engagement (3 items). This section also demonstrates excellent internal consistency, with a CA value of .952. Overall, the complete 53-item survey achieved a Cronbach's alpha of .974, indicating excellent reliability. Therefore, the instrument can be considered highly reliable for measuring online learning motivation and students' perceptions of ChatGPT.

Table 3- Reliability Levels, Cronbach's Alpha Ranges, and Their Interpretations

Reliability Level	Cronbach's Alpha Range	Interpretation
Excellent	0.9 and above	Indicates very high internal consistency
Good	0.80-0.89	Reflects strong internal consistency
Acceptable	0.70-0.79	Indicates acceptable internal consistency
Questionable	0.60-0.69	Reflects questionable internal consistency
Poor	Below 0.6	Indicates poor internal consistency

To determine the internal consistency reliability of the instrument, a reliability analysis was conducted using Cronbach's alpha. Table 3 presents Cronbach's alpha ranges and their corresponding interpretations. According to Ahmad et al. (2024), Cronbach's alpha values ranging from .70 to .79 indicate acceptable internal consistency, values from .80 to .89 indicate good internal consistency, and values of .90 or above indicate excellent internal consistency.

Table 2 presents the internal consistency reliability of the variables and constructs measured in this study. The Cronbach's alpha values were .917 for self-efficacy, .880 for control of learning beliefs, .939 for value, .912 for social support, and .952 for students' perceptions of ChatGPT. The overall Cronbach's alpha for all 53 items was .974. Based on the interpretations presented in Table 3, all the scales demonstrated good to excellent internal consistency. The overall value of .974 indicates that the instrument used in this study had excellent internal consistency reliability.

FINDINGS

Demographic Analysis

According to Ziegenfuss et al. (2021), researchers report demographic data using percentages to describe the sample and assess its representativeness. This information provides an overview of the participants' characteristics and offers a clear and understandable picture of the sample composition.

Table 4- Percentage for Demographic Profile

Question	Demographic Profile	Categories	Percentage (%)
1	Gender	Male	48%
		Female	52%
2	Field of Study	Science & Technology	42%
		Social Sciences, Humanities & Business	58%
3	Level of Study	Diploma	46%
		Degree	54%

Table 4 presents the demographic profile of the respondents according to gender, field of study, and level of study. In terms of gender, 52% of the respondents were female, while 48% were male, indicating a relatively balanced gender distribution with slightly more female respondents.

In terms of field of study, 58% of the respondents were from Social Sciences, Humanities and Business, whereas 42% were from Science and Technology. This shows that respondents from Social Sciences, Humanities and Business formed the larger group.

In terms of level of study, 54% of the respondents were degree students, while 46% were diploma students. Therefore, degree students represented a slightly higher proportion of the sample. Overall, the respondents were fairly evenly distributed across gender and level of study, although there was a somewhat larger difference between the two fields of study.

Inferential Statistics

According to He (2024), t-tests and analysis of variance (ANOVA) are parametric statistical tests used to compare group means and test hypotheses concerning mean differences. A t-test is generally used to compare the means of two groups, whereas a one-way ANOVA is used to compare the means of three or more independent groups. These tests determine whether the observed differences between group means are statistically significant or likely to have occurred by chance. Statistical significance is assessed using a p-value. When the p-value is below the predetermined significance level, commonly .05, the null hypothesis is rejected, indicating a statistically significant difference between the groups. Specifically, a one-way ANOVA examines the effect of one categorical independent variable, known as a factor, on a continuous dependent variable.

Findings for Online Motivation

This section presents data to answer research question 1: Are there significant differences in online learning motivation according to gender, field of study, and level of study?

H_{01} : There are no statistically significant differences in online learning motivation according to gender, field of study, and level of study.

Table 5 - T-Test for Online Motivation

		MEAN	SD	T/F-Statistics <i>df</i>	p-value	OUTCOME
Gender	Male	3.82	0.70	$t(160) = -.583$	.561	H_0 Not Rejected
	Female	3.88	0.49			
Field of Study	Science & Technology	3.87	0.64	$t(160) = .344$	.732	H_0 Not Rejected
	Social Sciences, Humanities & Business	3.83	0.57			
Level of Study	Diploma	3.70	0.58	$t(160) = -3.029$	.003	H_0 Rejected
	Degree	3.98	0.58			

As shown in Table 5, independent-samples t-tests were conducted to determine whether students' online learning motivation differed according to gender, field of study, and level of study. The results revealed no statistically significant differences in online learning motivation according to gender, $t(160) = -.583$, $p = .561$, or field of study, $t(160) = .344$, $p = .732$. Therefore, the null hypotheses for gender and field of study were not rejected.

However, a statistically significant difference in online learning motivation was found between diploma and degree students, $t(160) = -3.029$, $p = .003$. Degree students reported higher online learning motivation ($M = 3.98$, $SD = .58$) than diploma students ($M = 3.70$, $SD = .58$). Therefore, the null hypothesis for level of study was rejected.

Findings for ChatGPT

This section presents the findings for Research Question 2: Are there significant differences in students' perceptions of ChatGPT according to gender, field of study, and level of study?

H₀₂: There are no statistically significant differences in students' perceptions of ChatGPT according to gender, field of study, and level of study.

Table 6 - T-Test for ChatGPT

		MEAN	SD	T/F-Statistics <i>df</i>	p-value	OUTCOME
Gender	Male	3.84	0.68	t(162)=-.137	.891	H ₀ Not Rejected
	Female	3.85	0.59			
Field of Study	Science & Technology	3.86	0.64	t(160)=-3.28	0.74	H ₀ Not Rejected
	Social Sciences, Humanities & Business	3.83	0.63			
Level of Study	Diploma	3.68	0.53	t(160)=-3.06	.003	H ₀ Rejected
	Degree	3.98	0.68			

As shown in Table 6, independent-samples t-tests were conducted to determine whether students' perceptions of ChatGPT differed according to gender, field of study, and level of study. The results revealed no statistically significant difference according to gender, $t(160) = -.137$, $p = .891$. Male students ($M = 3.84$, $SD = .68$) and female students ($M = 3.85$, $SD = .59$) reported similar perceptions of ChatGPT.

Similarly, no statistically significant difference was found according to field of study, $t(160) = -.328$, $p = .740$. Students from Science and Technology ($M = 3.86$, $SD = .64$) and those from Social Sciences, Humanities and Business ($M = 3.83$, $SD = .63$) reported comparable perceptions of ChatGPT. Therefore, the null hypotheses concerning gender and field of study were not rejected.

However, a statistically significant difference was found between diploma and degree students, $t(160) = -3.06$, $p = .003$. Degree students reported more positive perceptions of ChatGPT ($M = 3.98$, $SD = .68$) than diploma students ($M = 3.68$, $SD = .53$). Therefore, the null hypothesis concerning level of study was rejected.

Descriptive Statistics

The mean and standard deviation were used to describe the distribution of the data. According to Vetter (2017), the mean (M) represents the average or central value of a dataset, whereas the standard deviation (SD) indicates how far individual scores typically deviate from the mean. A low standard deviation indicates that the scores are clustered closely around the mean, suggesting less variability. In contrast, a high standard deviation indicates that the scores are more widely dispersed, suggesting greater variability in the data. Therefore, both statistics provide a clearer understanding of the respondents' overall scores and the extent to which their responses vary.

Findings for Academic Self-Efficacy

This section presents the findings related to students' academic self-efficacy in online learning. The findings address research question 3: How do learners perceive their self-efficacy in online learning?

Table 7- Mean (M) and Standard Deviation (SD) for Academic SELF- EFFICACY (ESE)

Statement	M	SD
ESEQ1 I believe I'll receive excellent grades in my classes.	3.76	0.81
ESEQ2 I'm certain I can understand the most difficult material presented in the readings.	3.60	0.84
ESEQ3 I'm confident I can learn the basic concepts that are being taught.	3.98	0.81
ESEQ4 I'm confident I can understand the most complex material presented by the instructor online.	3.44	0.93
ESEQ5 I'm confident I can do an excellent job on assessments online	3.82	0.90

ESEQ6 I'm certain I can master the skills being taught online.	3.46	0.89
ESEQ7 Although online classes can be challenging, I think I can do well.	3.70	0.87

Table 7 presents the mean and standard deviation scores for the seven items measuring students' academic self-efficacy in online learning. The mean scores ranged from 3.44 to 3.98, indicating that the students generally reported positive beliefs about their ability to learn and perform effectively in online classes.

ESEQ3 recorded the highest mean score ($M = 3.98$, $SD = 0.81$), indicating that students were most confident in their ability to learn the basic concepts being taught. This was followed by ESEQ5 ($M = 3.82$, $SD = 0.90$), which shows that students were confident in their ability to perform well in online assessments. ESEQ1 also recorded a relatively high mean score ($M = 3.76$, $SD = 0.81$), suggesting that students generally believed they could obtain excellent grades in their classes.

In contrast, ESEQ4 recorded the lowest mean score ($M = 3.44$, $SD = 0.93$), indicating that students were comparatively less confident in their ability to understand complex material presented by an online instructor. ESEQ6 recorded the second-lowest mean ($M = 3.46$, $SD = 0.89$), suggesting slightly lower confidence in mastering skills taught online. The standard deviations ranged from 0.81 to 0.93, indicating a moderate degree of variation in the students' responses.

Findings for Online Motivation

This section presents data to answer research question 4: How do learners perceive their online learning motivation? In the context of this study, this is measured by (i) Expectancy - Control of Learning Beliefs, (ii) Value - (a) Intrinsic Goal Orientation, (b) Extrinsic Goal Orientation, (c) Task Value, and (iii) Social Support - (a) Social Engagement and (b) Instructor Support.

Expectancy – Control of Learning Beliefs (ECB)

Table 8- Mean (M) and Standard Deviation (SD) for Expectancy - CONTROL OF LEARNING BELIEFS (ECB)

Statement	M	SD
ECBQ1 If I study in appropriate ways, then I'll be able to learn the material.	3.87	0.85
ECBQ2 It's my own fault if I don't learn the material taught.	3.93	0.93
ECBQ3 If I try hard enough, then I'll understand the material presented.	3.96	0.91
ECBQ4 If I don't understand the material presented, it's because I didn't try hard enough.	3.79	0.97

Table 8 presents the mean and standard deviation scores for the four items measuring students' control of learning beliefs. The mean scores ranged from 3.79 to 3.96, indicating that students generally believed their learning outcomes were influenced by their own effort and study approaches.

ECBQ3 recorded the highest mean score ($M = 3.96$, $SD = 0.91$), indicating that students most strongly believed they could understand the material if they tried hard enough. This was followed by ECBQ2 ($M = 3.93$, $SD = 0.93$), suggesting that students generally accepted personal responsibility when they did not learn the material taught. ECBQ1 also recorded a relatively high mean ($M = 3.87$, $SD = 0.85$), showing that students believed using appropriate study methods would help them learn the material.

ECBQ4 recorded the lowest mean score ($M = 3.79$, $SD = 0.97$). Although this was the lowest score, it still suggests that students generally believed a lack of understanding could be related to insufficient effort. Its comparatively higher standard deviation indicates greater variation in students' responses to this statement.

Value (V)

Table 9-Mean (M) and Standard Deviation (SD) for Intrinsic Goal Orientation (VI)

Statement	M	SD
VIQ1I prefer online material that really challenges me, so I can learn new things.	3.43	0.92
VIQ2I prefer online material that arouses my curiosity, even if it's difficult to learn.	3.46	0.97
VIQ3 The most satisfying thing for me is trying to understand the online content as thoroughly as possible.	3.65	0.90
VIQ4I choose assignments that I can learn from even if they don't guarantee a good grade.	3.60	0.90

Table 9 presents the mean and standard deviation scores for the four items measuring students' intrinsic goal orientation in online learning. The mean scores ranged from 3.43 to 3.65, indicating a moderately positive level of intrinsic motivation among the students.

VIQ3 recorded the highest mean score ($M = 3.65$, $SD = 0.90$), indicating that students were most motivated by the satisfaction of understanding online learning content as thoroughly as possible. This was followed by VIQ4 ($M = 3.60$, $SD = 0.90$), suggesting that students generally preferred assignments that provided opportunities to learn, even when the assignments did not guarantee good grades.

VIQ2 recorded a mean score of 3.46 ($SD = 0.97$), showing that students were moderately interested in online materials that stimulated their curiosity, even when the materials were difficult to learn. VIQ1 recorded the lowest mean score ($M = 3.43$, $SD = 0.92$), indicating that students were comparatively less inclined to prefer challenging online materials that could help them learn new things.

Table 10-Mean (M) and Standard Deviation (SD) for Extrinsic Goal Orientation(VE)

Statement	M	SD
VEQ1 Getting a good grade is the most satisfying thing for me.	4.35	0.87
VEQ2 I want to do well in my classes so that I can get awards and recognition.	4.05	0.96
VEQ3I want to get better grades than most of the other students in my classes.	4.04	0.92
VEQ4I want to do well in my classes because it's important to show my ability to my family, friends, employer, or others.	4.19	0.93

Table 10 presents the mean and standard deviation scores for the four items measuring students' extrinsic goal orientation in online learning. The mean scores ranged from 4.04 to 4.35, indicating that students generally demonstrated a high level of extrinsic goal orientation.

VEQ1 recorded the highest mean score ($M = 4.35$, $SD = 0.87$), indicating that obtaining good grades was the strongest source of external motivation for the students. This was followed by VEQ4 ($M = 4.19$, $SD = 0.93$), suggesting that students were strongly motivated to perform well in order to demonstrate their abilities to family members, friends, employers, and others.

VEQ2 ($M = 4.05$, $SD = 0.96$) shows that students were also motivated by rewards and recognition. VEQ3 recorded the lowest mean score ($M = 4.04$, $SD = 0.92$), indicating that outperforming other students was comparatively the least influential external goal. Nevertheless, its mean remained high.

Table 11-Mean (M) and Standard Deviation (SD) for Task Value (VT)

Statement	M	SD
VTQ1 I think I will be able to use what I learn in this course in other courses.	4.04	0.82
VTQ2 It is important for me to learn the course material in this class.	4.12	0.79
VTQ3 I am very interested in the content area of this course.	3.96	0.86

VTQ4 I think the course material in this class is useful for me to learn.	3.97	0.87
VTQ5 I like the subject matter of this course.	3.93	0.86
VTQ6 Understanding the subject matter of this course is very important to me.	4.04	0.87

Table 11 presents the mean and standard deviation scores for the six items measuring students' task value in online learning. The mean scores ranged from 3.93 to 4.12, indicating that students generally placed a high value on the course and perceived its content as important, useful, and interesting.

VTQ2 recorded the highest mean score ($M = 4.12$, $SD = 0.79$), indicating that students strongly believed it was important to learn the course material. This item also had the lowest standard deviation, suggesting relatively consistent responses among the students. VTQ1 and VTQ6 recorded the second-highest mean score ($M = 4.04$), showing that students believed they could apply what they learned to other courses and considered understanding the subject matter important.

VTQ4 ($M = 3.97$, $SD = 0.87$) and VTQ3 ($M = 3.96$, $SD = 0.86$) indicate that students generally perceived the course material as useful and were interested in its content. VTQ5 recorded the lowest mean score ($M = 3.93$, $SD = 0.86$), suggesting that liking the subject matter was comparatively the weakest aspect of task value. Nevertheless, the mean remained relatively high.

Social Support (S)

Table 12-Mean (M) and Standard Deviation (SD) for Social Engagement (SSE)

Statement	M	SD
SSEQ1 I feel "disconnected" from my teacher and fellow students in classes.	2.73	1.07
SSEQ2 I pay attention in classes.	3.95	0.85
SSEQ3 I enjoy class discussions.	3.86	0.85
SSEQ4 I feel like I can freely communicate with other students in classes.	3.73	0.93
SSEQ5 I have strong relationships with fellow students in this course.	3.64	0.94

Table 12 presents the mean and standard deviation scores for the five items measuring students' social engagement in online classes. The mean scores ranged from 2.73 to 3.95.

SSEQ2 recorded the highest mean score ($M = 3.95$, $SD = 0.85$), indicating that students generally paid attention during online classes. This was followed by SSEQ3 ($M = 3.86$, $SD = 0.85$), suggesting that students generally enjoyed participating in class discussions. The identical and relatively low standard deviations for these two items show that the responses were comparatively consistent.

SSEQ4 recorded a mean score of 3.73 ($SD = 0.93$), indicating that students generally felt able to communicate freely with their classmates. Similarly, SSEQ5 ($M = 3.64$, $SD = 0.94$) suggests that students generally perceived themselves as having positive relationships with other students in the course.

SSEQ1 recorded the lowest mean score ($M = 2.73$, $SD = 1.07$). As this item is negatively worded—"I feel disconnected from my teacher and fellow students in class"—the comparatively low mean indicates that students generally did not feel disconnected. However, its higher standard deviation shows greater variation in students' experiences of disconnection.

Overall, the findings suggest that students demonstrated a moderately positive level of social engagement. They generally paid attention, enjoyed class discussions, communicated with other students, and developed positive peer relationships.

Table 13-Mean (M) and Standard Deviation (SD) for Instructor Support (SIS)

Statement	M	SD
SISQ1 I feel like I can freely communicate with the instructor in this class.	3.90	0.84
SISQ2 The instructor responds to questions, clearly, completely, and in a timely manner.	4.14	0.82
SISQ3 The instructor's expectations for me in this class are clear.	4.01	0.82
SISQ4 The instructor provides the guidance I need to be successful in this class.	4.19	0.78
SISQ5 The instructor presents the material in a way that makes it relevant to me.	4.20	0.76
SISQ6 In this course, I have the freedom to guide my own learning	3.98	0.79
SISQ7 The instructor provides regular feedback that helps me gauge my performance in this class.	4.06	0.82

Table 13 presents the mean and standard deviation scores for the seven items measuring students' perceptions of instructor support in online classes. The mean scores ranged from 3.90 to 4.20, indicating that students generally perceived a high level of support from their instructors.

SISQ5 recorded the highest mean score ($M = 4.20$, $SD = 0.76$), indicating that students generally believed their instructors presented course materials in a relevant and meaningful way. This item also had the lowest standard deviation, suggesting relatively consistent responses. SISQ4 recorded the second-highest mean ($M = 4.19$, $SD = 0.78$), showing that students generally received sufficient guidance to succeed in their classes. This was followed by SISQ2 ($M = 4.14$, $SD = 0.82$), suggesting that instructors responded to questions clearly, completely, and promptly.

Students also generally agreed that instructors provided regular feedback that helped them evaluate their performance (SISQ7: $M = 4.06$, $SD = 0.82$) and communicated their expectations clearly (SISQ3: $M = 4.01$, $SD = 0.82$). SISQ6 recorded a mean of 3.98 ($SD = 0.79$), indicating that students generally felt they had the freedom to guide their own learning.

SISQ1 recorded the lowest mean score ($M = 3.90$, $SD = 0.84$), suggesting that students were comparatively less positive about their ability to communicate freely with their instructors. Nevertheless, the mean remained relatively high.

Findings for ChatGPT

This section presents data to answer research question 5: How do learners perceive ChatGPT in online learning? In the context of this study, this is measured by (i) Critical Thinking Abilities, (ii) Academic Achievements, (iii) ChatGPT Usage, and (iv) Student Engagement.

Table 14-Mean (M) and Standard Deviation (SD) for CRITICAL THINKING ABILITIES (CT)

ITEM	M	SD
CTQ1 I usually need clarification on the precision and reliability of information provided by ChatGPT, which enhances my critical thinking skills.	3.98	0.82
CTQ2 ChatGPT's responses made me doubt their validity, leading me to seek further clarification or evidence.	4.06	0.85
CTQ3 I actively explore alternative viewpoints or sources of information when using ChatGPT to ensure a comprehensive understanding of the topic.	4.00	0.78
CTQ4 I need clarification about the accuracy of ChatGPT's output, which often encourages me to evaluate the information and conduct additional research independently.	4.01	0.79

Table 14 presents the mean and standard deviation scores for the four items measuring students' critical thinking abilities when using ChatGPT. The mean scores ranged from 3.98 to 4.06, indicating that students generally engaged in critical evaluation of ChatGPT-generated information.

CTQ2 recorded the highest mean score ($M = 4.06$, $SD = 0.85$), suggesting that ChatGPT's responses often caused students to question their validity and seek further clarification or supporting evidence. This was followed by

CTQ4 ($M = 4.01$, $SD = 0.79$), indicating that students generally sought clarification about the accuracy of ChatGPT's output and independently evaluated the information through additional research.

CTQ3 recorded a mean score of 4.00 ($SD = 0.78$), showing that students actively explored alternative viewpoints or information sources to develop a more comprehensive understanding of a topic. This item had the lowest standard deviation, indicating comparatively more consistent responses. CTQ1 recorded the lowest mean score ($M = 3.98$, $SD = 0.82$). Nevertheless, its relatively high mean suggests that students generally sought clarification regarding the precision and reliability of information provided by ChatGPT.

Table 15-Mean (M) and Standard Deviation (SD) for ACADEMIC ACHIEVEMENTS (AA)

ITEM	M	SD
AAQ1 I actively explore alternative viewpoints or sources of information when using ChatGPT to ensure a comprehensive understanding of the topic.	3.94	0.77
AAQ2 ChatGPT brings innovative ideas that are ready to be shared with students.	3.56	0.91
AAQ3 Students can anticipate robust writing guidance from ChatGPT.	3.73	0.84
AAQ4 ChatGPT has improved my academic performance.	3.83	0.80

Table 15 presents the mean and standard deviation scores for the four items intended to measure students' perceptions of ChatGPT's contribution to their academic achievement. The mean scores ranged from 3.56 to 3.94, indicating generally positive perceptions.

AAQ1 recorded the highest mean score ($M = 3.94$, $SD = 0.77$), suggesting that students frequently explored alternative viewpoints or information sources when using ChatGPT. Its relatively low standard deviation indicates that the responses were comparatively consistent.

AAQ4 recorded the second-highest mean ($M = 3.83$, $SD = 0.80$), indicating that students generally perceived ChatGPT as contributing positively to their academic performance. This was followed by AAQ3 ($M = 3.73$, $SD = 0.84$), suggesting that students believed ChatGPT could provide useful writing guidance.

AAQ2 recorded the lowest mean score ($M = 3.56$, $SD = 0.91$). This indicates that students were comparatively less convinced that ChatGPT generates innovative ideas that are ready to be shared with them. The item also had the highest standard deviation, showing greater variation in students' opinions.

Table 16-Mean (M) and Standard Deviation (SD) for CHATGPT USAGE (CU)

ITEM	M	SD
CUQ1 ChatGPT is a state-of-the-art writing model that is favorably used today.	3.90	0.88
CUQ2 Students seek help from ChatGPT's assistance in composing essays and articles.	3.86	0.79
CUQ3 ChatGPT helps students in English language translation.	3.88	0.90
CUQ4 Employing ChatGPT significantly improves human productivity.	3.70	0.88
CUQ5 The advent of ChatGPT marks a groundbreaking transformation in Natural Language Processing capabilities.	3.79	0.78

Table 16 presents the mean and standard deviation scores for the five items measuring students' perceptions of ChatGPT usage. The mean scores ranged from 3.70 to 3.90, indicating generally positive perceptions of ChatGPT and its applications.

CUQ1 recorded the highest mean score ($M = 3.90$, $SD = 0.88$), suggesting that students generally perceived ChatGPT as a modern writing model that is widely and favourably used. This was closely followed by CUQ3 ($M = 3.88$, $SD = 0.90$), indicating that students believed ChatGPT was helpful for English-language translation. CUQ2 also recorded a relatively high mean score ($M = 3.86$, $SD = 0.79$), showing that students commonly sought ChatGPT's assistance when composing essays and articles.

CUQ5 recorded a mean score of 3.79 ($SD = 0.78$), suggesting that students generally recognised ChatGPT as an important development in natural language processing. This item had the lowest standard deviation, indicating

comparatively consistent responses. CUQ4 recorded the lowest mean score ($M = 3.70$, $SD = 0.88$), showing that students were comparatively less convinced that using ChatGPT significantly improves human productivity. Nevertheless, the score still indicates a generally positive perception.

Table 17-Mean (M) and Standard Deviation (SD) for STUDENT ENGAGEMENT (SE)

ITEM	M	SD
SEQ1 ChatGPT is more interactive, human-like, and engaging for the students.	3.64	0.93
SEQ2 ChatGPT increases confidence in my ability to conduct research/to search for materials	3.80	0.78
SEQ3 ChatGPT is easy to use and more engaging for me	3.86	0.78

Table 17 presents the mean and standard deviation scores for the three items measuring students' engagement when using ChatGPT. The mean scores ranged from 3.64 to 3.86, indicating that students generally had positive perceptions of ChatGPT's role in supporting their engagement.

SEQ3 recorded the highest mean score ($M = 3.86$, $SD = 0.78$), indicating that students generally found ChatGPT easy to use and engaging. This was followed by SEQ2 ($M = 3.80$, $SD = 0.78$), suggesting that ChatGPT increased students' confidence in their ability to conduct research and search for relevant materials. The identical standard deviations for SEQ2 and SEQ3 indicate a similar degree of variation in the responses to both items.

SEQ1 recorded the lowest mean score ($M = 3.64$, $SD = 0.93$). Although it was the lowest-rated item, the result still suggests that students generally perceived ChatGPT as interactive, human-like, and engaging. Its higher standard deviation indicates greater variation in students' opinions regarding this characteristic.

Correlation Analysis

According to He (2024), correlation is a statistical technique that shows how strongly two variables are related to each other or the degree of association between the two. It's a common tool for describing simple relationships without making a statement about cause and effect. This section presents the results of the correlation analyses conducted to answer the research questions concerning the relationships among the variables.

According to He (2024), the coefficient is significant at the .05 level and a positive correlation is measured on a 0.1 to 1.0 scale. A weak positive correlation would be in the range of 0.1 to 0.3, a moderate positive correlation from 0.3 to 0.5, and a strong positive correlation from 0.5 to 1.0.

To determine if there is a significant relationship in the mean scores between Self-Efficacy, Expectancy, Value, Social Support and ChatGPT, the data were analysed using SPSS for correlations. The results are presented separately in Table 18 below.

Table 18- Correlation for Self-Efficacy, Expectancy, Value, Social Support and ChatGPT

CORRELATION					
		EXPECTANCY	VALUE	SOCIAL SUPPORT	CHATGPT
SELF EFFICACY	Pearson Correlation	.706**	.692**	.624**	.515**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001
	N	162	162	162	162
**. Correlation is significant at the 0.01 level (2-tailed).					

4.4.1 Findings for the Relationship between self-efficacy and online learning motivation

This section presents the data to answer research question 6: Is there a relationship between academic self-efficacy and online learning motivation? In the context of this study, online learning motivation is measured by (i) Expectancy, (ii) Value and (iii) Social Support.

H₀₃: There is no significant relationship between self-efficacy and online motivation.

Table 18 reveals there are significant relationships between academic self-efficacy and online learning motivation (expectancy, value, and social support). All 3 interactions show strong positive relationship; academic self-efficacy and expectancy ($r=.706^{**}$) and ($p<.001$), academic self-efficacy and value ($r=.692^{**}$) and ($p<.001$), and academic self-efficacy and social support ($r=.624^{**}$) and ($p<.001$). Hence, the null hypothesis for H₀₃ is rejected.

Findings for Relationship between Academic Self-Efficacy and ChatGPT

This section presents data to answer research question 7: Is there a relationship between academic self-efficacy and perceptions of ChatGPT?

H₀₄: There is no significant relationship between academic self-efficacy and perceptions of ChatGPT.

Table 18 also shows there are significant relationships between academic self-efficacy and perceptions of ChatGPT. The analysis shows that there is a strong positive relationship between academic self-efficacy and perceptions of ChatGPT ($r=.515^{**}$) and ($p<.001$). Hence, the null hypothesis for H₀₄ is rejected.

CONCLUSION

Summary of Findings and Discussions

RQ1: Are there significant differences in online learning motivation according to gender, field of study, and level of study?

The findings revealed that students' online learning motivation did not differ significantly according to gender or field of study. Male and female students demonstrated comparable levels of motivation, as did students from Science and Technology and those from Social Sciences, Humanities and Business. However, a significant difference was found according to level of study, with degree students demonstrating higher online learning motivation than diploma students. Therefore, the null hypothesis was rejected only for level of study.

The gender finding contrasts with Fowler (2018), who found higher overall motivation, extrinsic goal orientation, and social engagement among female students, but is broadly consistent with Rahmat (2026), who reported no gender differences in online reading strategies or ChatGPT usage. The comparable motivation across fields of study suggests that expectancy of success, perceived task value, and social support may be more influential than academic discipline (Fowler, 2018; Jenal et al., 2025; Taib et al., 2024).

However, degree students demonstrated significantly higher motivation than diploma students. Although the reviewed studies did not directly compare these two groups, Bandura's (1997) Self-Efficacy Theory suggests that degree students may have developed greater confidence, persistence, and learning-regulation skills through accumulated academic experiences. They may also perceive online learning as more relevant to their academic and professional goals, consistent with evidence linking motivation to task value, expectancy of success, and learning support (Jenal et al., 2025; Taib et al., 2024). Thus, level of study appears to influence online learning motivation more strongly than gender or field of study, although further research is needed to explain this difference.

RQ2: Are there significant differences in students' perceptions of ChatGPT according to gender, field of study, and level of study?

Students' perceptions of ChatGPT did not differ significantly according to gender or field of study. Male and female students held similar perceptions, while students from the two fields of study also viewed ChatGPT comparably. Nevertheless, a significant difference was identified according to level of study. Degree students had more positive perceptions of ChatGPT than diploma students. Thus, the null hypothesis was rejected only for level of study.

The gender finding is consistent with Rahmat (2026), who found no significant gender difference in ChatGPT usage, suggesting that male and female students may perceive and use the technology similarly. Comparable perceptions across fields of study may indicate that ChatGPT's perceived usefulness and ease of use are more influential than students' academic disciplines, as proposed by the Technology Acceptance Model (Davis, 1986). Students across disciplines may value ChatGPT for clarifying information, generating ideas, improving writing, exploring alternative perspectives, and increasing productivity (Rahmat, 2026; Youssef et al., 2024).

However, degree students held significantly more positive perceptions than diploma students. Although the reviewed studies did not directly compare these groups, degree students may have greater academic experience, digital confidence, or exposure to complex tasks for which ChatGPT is perceived as useful. This interpretation is supported by Alqurni (2026), who connected favourable perceptions of AI's intelligence and adaptability with its perceived usefulness and ease of use, and Jeilani and Abubakar (2025), who showed that technological self-efficacy and institutional support shape students' perceptions of AI-supported learning. Thus, the level of study may influence how students recognise and evaluate ChatGPT's educational value, although further research is required to determine the reasons for this difference.

RQ3: How do learners perceive their academic self-efficacy in online learning?

Overall, students demonstrated positive academic self-efficacy in online learning. They were particularly confident in their ability to learn basic concepts and perform well in online assessments. They also generally believed that they could obtain good grades and succeed despite the challenges of online classes. However, they were comparatively less confident in understanding complex materials presented online and mastering skills taught through online instruction.

This supports Bandura's (1997) Self-Efficacy Theory, which proposes that students who believe in their capabilities are more likely to invest effort, persist through difficulties, and expect successful outcomes. The findings are also broadly consistent with Taib et al. (2024), who reported positive expectancy beliefs among online learners, and Mahande et al. (2026), who found that self-efficacy contributed positively to performance in blended learning.

However, students were less confident in understanding complex online materials and mastering skills through online instruction. This resembles Jenal et al.'s (2025) finding that students demonstrated only moderate self-efficacy, suggesting some uncertainty about succeeding in demanding online learning tasks. From Bandura's (1997) perspective, these weaker areas may reflect insufficient mastery experiences, modelling, constructive feedback, or emotional support. Therefore, instructors should provide structured explanations, guided practice, progressively challenging activities, and regular feedback to strengthen students' confidence in managing more complex content and skill-based learning online.

RQ4: How do learners perceive their online learning motivation?

Overall, students demonstrated positive online learning motivation. They believed that their learning outcomes were influenced by their effort and study strategies. Their motivation was particularly driven by external factors, especially obtaining good grades, demonstrating their abilities to others, and receiving recognition. They also considered the course content important, useful, and applicable to other courses. Although their intrinsic motivation was positive, they were comparatively less interested in challenging learning materials.

Students also demonstrated positive social engagement and generally did not feel disconnected from their instructors and classmates. They paid attention during online classes, enjoyed class discussions, communicated with their peers, and developed positive relationships. In addition, students perceived strong instructor support, particularly through relevant course materials, clear guidance, timely responses, and regular feedback.

This reflects Bandura's (1997) view that beliefs about personal control and capability encourage effort and persistence. Their strong motivation to obtain good grades, demonstrate their abilities, and receive recognition is consistent with Jenal et al. (2025), who found that students were strongly motivated by extrinsic goals. Students also considered the course content important, useful, and applicable to other courses, supporting Taib

et al.'s (2024) finding that learners positively valued online learning and that task value was strongly related to expectancy of success. However, their comparatively lower interest in challenging materials may indicate some uncertainty about managing demanding tasks, consistent with Jenal et al.'s (2025) finding of moderate self-efficacy.

Furthermore, students' positive social engagement and strong perceptions of instructor support reflect Fowler's (2018) conceptualisation of social engagement and instructor support as dimensions of online learning motivation. These findings also align with Jenal et al. (2025), who found that encouragement, feedback, and student–instructor interaction supported motivation, particularly because social support was strongly associated with task value. Overall, students' motivation appeared to be sustained by perceived control, extrinsic goals, useful course content, social interaction, and responsive instructor support, although their willingness to engage with challenging learning materials could be further strengthened.

RQ5: How do learners perceive ChatGPT in online learning?

Students generally held positive perceptions of ChatGPT in online learning. They critically evaluated its responses by questioning their accuracy, seeking clarification, consulting other sources, and conducting further research. They also believed that ChatGPT supported their academic performance and provided useful assistance with writing, although they were less convinced that it consistently generated innovative ideas.

Students viewed ChatGPT as a useful tool for writing, translation, and composing essays and articles. They also recognised its importance as a development in language-processing technology, although they were comparatively less certain about its contribution to improving productivity. In terms of engagement, students generally found ChatGPT easy to use and engaging, and believed that it increased their confidence in conducting research and locating relevant information.

This is consistent with Rahmat (2026) and Youssef et al. (2024), who found that students evaluated ChatGPT's responses and compared them with other information sources, practices that may promote critical thinking. Students' perceptions that ChatGPT supported academic performance and assisted with writing, translation, and composing essays and articles also align with Rahmat (2026), who identified benefits for understanding and learning productivity, and Youssef et al. (2024), who associated ChatGPT with idea development, writing improvement, engagement, and academic achievement. Furthermore, students' perceptions of ChatGPT as easy to use, useful, and engaging support Davis's (1986) Technology Acceptance Model, which identifies perceived usefulness and perceived ease of use as central determinants of technology acceptance. Their increased confidence in conducting research and locating information may also reflect AI-supported self-efficacy and autonomous learning (Alqurni, 2026).

RQ6: Is there a relationship between academic self-efficacy and online learning motivation?

The findings showed significant positive relationships between academic self-efficacy and all three dimensions of online learning motivation: expectancy, value, and social support. This indicates that students with stronger beliefs in their academic abilities also tended to demonstrate greater control over their learning, place greater value on their learning activities, and perceive stronger social support. Therefore, the null hypothesis was rejected.

This supports Bandura's (1997) Self-Efficacy Theory, which explains that students who believe in their academic capabilities are more likely to invest effort, persist through challenges, and expect successful outcomes. The positive relationship with expectancy is consistent with Taib et al. (2024), who found a strong association between students' perceived learning value and beliefs about their ability to succeed. Similarly, the relationship between self-efficacy and value suggests that confident students are more likely to regard learning activities as important, useful, and worthwhile, corresponding with Jenal et al.'s (2025) emphasis on task relevance as a source of online learning motivation. The positive relationship with social support also aligns with Fowler's (2018) inclusion of social engagement and instructor support within online learning motivation and with Jenal et al. (2025), who reported positive relationships among expectancy, value, and social support. Supportive feedback and encouragement may strengthen efficacy beliefs, while students with stronger self-

efficacy may also be more willing to interact with instructors and classmates. These findings further complement Mahande et al. (2026), who found that both self-efficacy and motivation positively contributed to performance in blended learning.

RQ7: Is there a relationship between academic self-efficacy and perceptions of ChatGPT?

A significant positive relationship was found between academic self-efficacy and students' perceptions of ChatGPT. This suggests that students who were more confident in their academic abilities were also more likely to hold positive perceptions of ChatGPT and its role in online learning. Therefore, the null hypothesis was rejected.

This finding is consistent with Bandura's (1997) Self-Efficacy Theory, as confident learners may be more willing to explore and use technological resources to support their goals. It also corresponds with Davis's (1986) Technology Acceptance Model, which suggests that favourable perceptions develop when users consider a technology useful and easy to use. Alqurni (2026) similarly found connections among perceived ease of use, AI-related self-efficacy, and autonomous learning, while Jeilani and Abubakar (2025) showed that technology self-efficacy influenced students' responses to AI-supported learning. The finding also complements Mahande et al. (2026), who reported that ChatGPT strengthened the positive relationship between self-efficacy and academic performance, suggesting that confident students may use the tool more effectively.

However, Daha and Altelwany (2025) found that students with higher academic self-efficacy used ChatGPT less frequently. This apparent difference may be explained by the distinction between perception and frequency of use: academically confident students may recognise ChatGPT's usefulness while using it selectively rather than relying on it extensively. Therefore, positive perceptions of ChatGPT among students with high academic self-efficacy may reflect purposeful and critical acceptance of the technology, although the correlational finding does not establish that either variable causes the other.

Implications and Suggestions for Future Research

Theoretical and Conceptual Implications

The findings support Bandura's (1997) Self-Efficacy Theory by demonstrating that academic self-efficacy was positively related to expectancy, value, and social support. Students who were more confident in their academic capabilities tended to demonstrate greater control over their learning, value their learning activities more highly, and perceive stronger support from instructors and peers. This extends the role of self-efficacy beyond individual confidence and persistence by showing its connection with the cognitive, motivational, and social dimensions of online learning. The findings also support the conceptualisation of expectancy, value, and social support as interrelated dimensions of online learning motivation (Fowler, 2018; Jenal et al., 2025; Taib et al., 2024).

The positive relationship between academic self-efficacy and perceptions of ChatGPT also supports the integration of Self-Efficacy Theory with the Technology Acceptance Model. According to Davis (1986), users are more likely to accept a technology when they perceive it as useful and easy to use. The present findings suggest that students' academic confidence may also be associated with how favourably they evaluate ChatGPT as a learning tool. Thus, technology acceptance in education may depend not only on the characteristics of the technology but also on learners' beliefs about their own academic capabilities. However, because the study employed a correlational design, the findings do not establish that self-efficacy causes positive perceptions of ChatGPT. Instead, they provide empirical support for a conceptual framework in which academic self-efficacy, online learning motivation, and technology acceptance are closely interconnected.

Pedagogical Implications

The findings suggest that instructors should strengthen students' academic self-efficacy through structured explanations, guided practice, achievable tasks, peer modelling, and constructive feedback. Although students were generally confident in learning basic concepts and completing online assessments, they were less confident in understanding complex materials and mastering skills taught online. Instructors should therefore divide

difficult content into manageable stages and gradually increase task complexity so that students can develop confidence through successful learning experiences. Since students' motivation was strongly influenced by grades and recognition but they were less interested in challenging materials, instructors should also design meaningful and authentic activities that promote curiosity, problem-solving, and personal improvement.

The positive role of social engagement and instructor support indicates that online courses should provide regular opportunities for discussion, peer collaboration, timely responses, and individualised feedback. ChatGPT may be incorporated as a supporting tool for writing, translation, research, and information exploration because students generally perceive it as useful, easy to use, and engaging. Nevertheless, lecturers should explicitly teach AI literacy by requiring students to evaluate accuracy, consult credible sources, disclose appropriate AI use, and revise generated content independently.

Suggestions for Future Research

Future research should replicate the study with larger and more representative samples from different institutions, countries, academic disciplines, and educational levels because convenience sampling limits the generalisability of the findings. Particular attention should be given to the differences between diploma and degree students, as level of study was the only demographic factor significantly associated with both online learning motivation and perceptions of ChatGPT. Qualitative interviews or focus groups could explore whether these differences arise from academic experience, digital competence, exposure to ChatGPT, task complexity, institutional support, or other contextual factors.

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APPENDIX ONLINE MOTIVATION & CHATGPT

(This instrument is adapted from Fowler, 2018 and Youssef et al., 2024)

PAR T	VARIABLE	CONSTRUCT		NO. OF ITEMS		TOTA L
B	ONLINE MOTIVATIO N Fowler (2018)	EXPECTANCY	Self-Efficacy	7	11	37
			Control of Learning Beliefs	4		
		VALUE	Intrinsic Goal Orientation	4	14	
			Extrinsic Goal Orientation	4		
			Task Value	6		
		SOCIAL SUPPORT	Social Engagement	5	12	
			Instructor Support	7		
C	CHAT GPT Youssef, et.al (2024)	Critical thinking abilities		4		16
		Academic achievement		4		
		ChatGPT usage		5		
		Student engagement		3		
						53

SECTION B – ONLINE MOTIVATION

(i) EXPECTANCY(E)

(a) SELF- EFFICACY (ESE)

Statement	1	2	3	4	5
ESEQ 1 I believe I'll receive excellent grades in my classes.					
ESEQ2 I'm certain I can understand the most difficult material presented in the readings.					
ESEQ3 I'm confident I can learn the basic concepts that are being taught.					
ESEQ4 I'm confident I can understand the most complex material presented by the instructor online.					
ESEQ5 I'm confident I can do an excellent job on assessments online					
ESEQ6 I'm certain I can master the skills being taught online.					
ESEQ7 Although online classes can be challenging, I think I can do well.					

(b) CONTROL OF LEARNING BELIEFS (ECB)

Statement	1	2	3	4	5
ECBQ1 If I study in appropriate ways, then I'll be able to learn the material.					
ECBQ2 It's my own fault if I don't learn the material taught.					
ECBQ3 If I try hard enough, then I'll understand the material presented.					
ECBQ4 If I don't understand the material presented, it's because I didn't try hard enough.					

(ii) VALUE (V)

(a) Intrinsic Goal Orientation (VI)

Statement	1	2	3	4	5
VIQ1I prefer online material that really challenges me, so I can learn new things.					
VIQ2I prefer online material that arouses my curiosity, even if it's difficult to learn.					
VIQ3 The most satisfying thing for me is trying to understand the online content as thoroughly as possible.					
VIQ4I choose assignments that I can learn from even if they don't guarantee a good grade.					

(b) Extrinsic Goal Orientation(VE)

Statement	1	2	3	4	5
VEQ1 Getting a good grade is the most satisfying thing for me.					

VEQ2 I want to do well in my classes so that I can get awards and recognition.					
VEQ3I want to get better grades than most of the other students in my classes.					
VEQ4I want to do well in my classes because it's important to show my ability to my family, friends, employer, or others.					

(c) Task Value (VT)

Statement	1	2	3	4	5
VTQ1 I think I will be able to use what I learn in this course in other courses.					
VTQ2 It is important for me to learn the course material in this class.					
VTQ3 I am very interested in the content area of this course.					
VTQ4 I think the course material in this class is useful for me to learn.					
VTQ5 I like the subject matter of this course.					
VTQ6 Understanding the subject matter of this course is very important to me.					

(iii) SOCIAL SUPPORT (S)

(a) Social Engagement (SSE)

Statement	1	2	3	4	5
ISSEQ1 feel "disconnected" from my teacher and fellow students in classes.					
SSEQ2 I pay attention in classes.					
SSEQ3 I enjoy class discussions.					
SSEQ4 I feel like I can freely communicate with other students in classes.					
SSEQ5 I have strong relationships with fellow students in this course.					

(b) Instructor Support (SIS)

Statement	1	2	3	4	5
SISQ1I feel like I can freely communicate with the instructor in this class.					
SISQ2 The instructor responds to questions, clearly, completely, and in a timely manner.					
SISQ3 The instructor's expectations for me in this class are clear.					
SISQ4 The instructor provides the guidance I need to be successful in this class.					
SISQ5 The instructor presents the material in a way that makes it relevant to me.					

SISQ6 In this course, I have the freedom to guide my own learning					
SISQ7 The instructor provides regular feedback that helps me gauge my performance in this class.					

SECTION B-CHATGPT

(i) CRITICAL THINKING ABILITIES (CT)

ITEM	1	2	3	4	5
CTQ1 I usually need clarification on the precision and reliability of information provided by ChatGPT, which enhances my critical thinking skills.					
CTQ2 ChatGPT's responses made me doubt their validity, leading me to seek further clarification or evidence.					
CTQ3 I actively explore alternative viewpoints or sources of information when using ChatGPT to ensure a comprehensive understanding of the topic.					
CTQ4I need clarification about the accuracy of ChatGPT's output, which often encourages me to evaluate the information and conduct additional research independently.					

(ii) ACADEMIC ACHIEVEMENTS (AA)

ITEM	1	2	3	4	5
AAQ1 I actively explore alternative viewpoints or sources of information when using ChatGPT to ensure a comprehensive understanding of the topic.					
AAQ2 ChatGPT brings innovative ideas that are ready to be shared with students.					
AAQ3 Students can anticipate robust writing guidance from ChatGPT.					
AAQ4 ChatGPT has improved my academic performance.					

(iii) CHATGPT USAGE (CU)

ITEM	1	2	3	4	5
CUQ1 ChatGPT is a state-of-the-art writing model that is favorably used today.					
CUQ2 Students seek help from ChatGPT's assistance in composing essays and articles.					
CUQ3 ChatGPT helps students in English language translation.					
CUQ4 Employing ChatGPT significantly improves human productivity.					
CUQ5 The advent of ChatGPT marks a groundbreaking transformation in Natural Language Processing capabilities.					

(iv) STUDENT ENGAGEMENT (SE)

ITEM	1	2	3	4	5
SEQ1 ChatGPT is more interactive, human-like, and engaging for the students.					
SEQ2 ChatGPT increases confidence in my ability to conduct research/to search for materials					
SEQ3 ChatGPT is easy to use and more engaging for me					