

Exploring the Role of Task Value in Online Learning Motivation and ChatGPT Use

Nurul Nadiah Rasdi^{1*}, D. Rohayu Mohd Yunos², Ahmad Najmie Rusli³, Nursyuhada Zakaria⁴,
Nurul Kamalia Yusuf⁵

^{1,2,4,5}Academy of Language Studies, Universiti Teknologi MARA

³Faculty of Mechanical Engineering, Universiti Teknologi MARA

***Corresponding Author**

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ABSTRACT

The expansion of online education and generative artificial intelligence (GenAI) has created new opportunities for university students to engage with learning in different ways. Among these developments, ChatGPT has become increasingly relevant as a tool for academic support, although its use is closely connected to how students perceive and engage with their learning. This study aimed to investigate the relationships between task value, online learning motivation, and ChatGPT use among university students. A quantitative approach was adopted, using an online questionnaire comprising four sections covering demographic profile, task value, online learning motivation, and ChatGPT use. Data were collected from undergraduate students at a public university in Malaysia. The findings showed that students generally placed importance on their course learning, while task value was strongly associated with both online learning motivation and ChatGPT use. Students also demonstrated a tendency to evaluate ChatGPT-generated responses critically by checking information and seeking alternative sources. In addition, instructor support emerged as an important aspect of the online learning experience, particularly the provision of clear and timely responses. These findings indicate that students' perceptions of learning value, critical engagement with AI-generated content, and continued instructor involvement are important considerations in online learning. The study highlights the need for purposeful integration of ChatGPT that complements, rather than replaces, instructional support and students' active learning.

Keywords: Task value, Online learning motivation, ChatGPT, Critical thinking, AI-supported learning

INTRODUCTION

Background of Study

Digital technologies have significantly changed higher education by transforming how students access information, communicate, and complete academic tasks. In recent years, the emergence of generative artificial intelligence (GenAI), particularly ChatGPT, has further influenced learning practices by providing students with new forms of academic support. ChatGPT is a conversational AI tool that can generate human-like responses, explain concepts, answer questions, provide feedback, and assist with activities such as brainstorming, academic writing, and language learning (Kasneci et al., 2023). As a result, ChatGPT has gained increasing attention in higher education and is now widely used by students to support their online learning activities.

However, the educational value of ChatGPT depends not only on the capabilities of the technology but also on students' willingness and motivation to engage with learning tasks. Previous research has highlighted that students' learning behaviours are strongly influenced by their motivational beliefs, particularly how they perceive the value of the tasks they are required to complete. The concept of task value originates from

Expectancy-Value Theory (EVT), which was initially developed by Eccles et al. (1983) to explain students' achievement-related choices and behaviours. The theory was further expanded into the Situated Expectancy-Value Theory (SEVT) by Eccles and Wigfield (2020), which emphasises that students' motivation is shaped by their expectations of success and the value they attach to specific learning activities within particular social and educational contexts. In this framework, task value refers to students' perceptions of the importance, usefulness, interest, and relevance of a learning task. Students who perceive higher task value are more likely to demonstrate greater effort, persistence, and engagement in learning activities (Eccles & Wigfield, 2020).

The role of task value is particularly relevant in online learning environments, where students are required to take greater responsibility for managing their own learning. Online learning motivation refers to the processes that encourage students to initiate, sustain, and regulate their participation in online learning activities (Hartnett, 2016). Motivated learners are more likely to engage actively, apply effective learning strategies, and persist despite challenges. In the context of AI-supported learning, students' motivational beliefs may influence how they utilize ChatGPT. Students who perceive learning tasks as meaningful and valuable may use ChatGPT as a tool to enhance understanding, generate ideas, and support knowledge development, whereas students with lower task value perceptions may use it mainly to complete academic requirements.

The rapid adoption of ChatGPT has resulted in a growing body of research examining its role in education. Existing studies have mainly focused on students' acceptance of ChatGPT, including factors such as perceived usefulness, ease of use, behavioural intention, learning performance, and concerns related to academic integrity (Dwivedi et al., 2023; Kasneci et al., 2023). While these studies provide important insights into technology adoption, they provide less explanation of the motivational factors that influence students' educational use of ChatGPT. In particular, limited research has examined how task value influences online learning motivation and how these motivational processes relate to students' use of ChatGPT. This gap is important because students may interact with AI tools differently depending on how they perceive the value and purpose of the learning tasks they encounter.

As generative AI continues to become integrated into higher education, understanding the motivational factors that shape students' use of ChatGPT remains essential. Examining the relationship between task value, online learning motivation, and ChatGPT use extends the application of Situated Expectancy-Value Theory into the emerging context of AI-supported learning. Such understanding may assist educators and institutions in designing learning experiences that encourage students to use ChatGPT effectively and responsibly as a learning support tool rather than merely as a means of completing academic tasks. Therefore, this study explores the influence of task value on online learning motivation and ChatGPT use among university students.

Statement of Problem

The rapid development of generative artificial intelligence (GenAI) has transformed discussions on the role of artificial intelligence in higher education. Among various GenAI applications, ChatGPT has gained significant attention due to its ability to support academic activities such as information searching, writing assistance, idea generation, language support, and feedback provision. Although ChatGPT can provide students with immediate and personalised learning support, concerns have been raised regarding overdependence, reduced cognitive engagement, and inappropriate use without proper pedagogical guidance (Kasneci et al., 2023; Tlili et al., 2023). Therefore, recent research has shifted from examining only the availability of AI tools towards understanding the factors that influence students' engagement with these technologies.

Previous studies on ChatGPT adoption have mainly focused on technology-related factors. Using technology acceptance perspectives, researchers have identified perceived usefulness, perceived ease of use, performance expectancy, trust, and AI literacy as important factors influencing students' intention to use ChatGPT for learning (Dwivedi et al., 2023; Al-Abdullatif & Alsubaie, 2024). However, these perspectives

provide limited explanations of the motivational processes that influence how students use ChatGPT as part of their learning activities. Technology acceptance alone does not necessarily indicate meaningful learning engagement, as students may use the same AI tool differently depending on their learning goals, beliefs, and motivation.

From an educational psychology perspective, students' engagement with learning activities is strongly influenced by the value they attach to those activities. The Situated Expectancy-Value Theory (SEVT), developed from the expectancy-value framework proposed by Eccles et al. (1983) and extended by Eccles and Wigfield (2020), explains that students' achievement-related behaviours are shaped by their expectations of success and the value they assign to learning tasks. Task value refers to students' perceptions of the importance, usefulness, interest, and relevance of a task, which subsequently influence their effort, persistence, and engagement.

The role of task value is particularly relevant in online learning environments, where students are required to demonstrate greater autonomy and self-regulation. Previous studies have shown that motivational beliefs significantly influence students' engagement and learning outcomes in technology-mediated learning contexts (Hartnett, 2016; Broadbent & Fuller-Tyszkiewicz, 2018). However, with the increasing integration of GenAI into education, limited attention has been given to how motivational factors, particularly task value, influence students' interaction with AI-supported learning tools such as ChatGPT.

Recent discussions on GenAI in education have highlighted the importance of considering learner-related factors rather than focusing solely on technological capabilities. Kasneci et al. (2023) and Tlili et al. (2023) emphasised that the educational value of large language models depends on how learners and educators integrate these technologies into meaningful learning processes. Hence, investigating motivational constructs alongside technology-related factors is essential to better understand students' engagement with ChatGPT.

Therefore, this study examines the role of task value in influencing online learning motivation and ChatGPT use among university students. Specifically, it investigates students' perceptions of task value, online learning motivation, and ChatGPT usage; examines differences based on gender and learner clusters; and explores the relationships among these variables. By applying SEVT within the context of AI-supported learning, this study contributes to a deeper understanding of the motivational factors shaping students' engagement with generative AI technologies in higher education.

Objective of the Study and Research Questions

This study aims to explore task value and its influence on online learning motivation and ChatGPT use. Specifically, the study seeks to answer the following research questions:

- Is there a significant difference in online learning motivation across gender and clusters?

H₀₁: There is no significant difference in online learning motivation across gender and clusters.

- Is there a significant difference in ChatGPT use across gender and clusters?

H₀₂: There is no significant difference in ChatGPT use across gender and clusters.

- How do learners perceive task value in online learning?
- How do learners perceive online learning motivation?
- How do learners perceive the use of ChatGPT in learning?

- Is there a relationship between task value and online learning motivation?

H₀₃: There is no relationship between task value and online learning motivation.

- Is there a relationship between task value and ChatGPT?

H₀₄: There is no relationship between task value and ChatGPT.

LITERATURE REVIEW

Theoretical Framework of the Study

Expectancy-Value Theory (EVT)

This study is guided by Expectancy-Value Theory (EVT), which explains that students' motivation is shaped by their belief in their ability to succeed and the value they place on a learning task. According to Wigfield and Eccles (2000), students are more likely to be motivated when they perceive a task as important, useful, interesting, or enjoyable. In this study, task value refers to how students perceive the importance, usefulness, and relevance of online learning activities. When students place greater value on these activities, they may show stronger motivation to participate, persist, and engage in online learning, including the use of ChatGPT as a learning tool. Therefore, EVT provides a suitable theoretical foundation for examining the relationship between task value, online learning motivation, and ChatGPT use. Previous studies have applied EVT to online learning and found that task value is associated with learning persistence and engagement (Lee & Song, 2022). Recent research has also applied EVT to students' perceptions and intentions to use generative AI (Chan & Zhou, 2023).

Scaffolding Theory and Using ChatGPT for Learning

The Scaffolding Theory, introduced by Vygotsky (1978), proposed the concept of learning through the support of others in order to achieve a goal. The support is offered through the Zone of Proximal Development (ZPD) where learners are guided as needed and the support gradually fades as the autonomy grows. In the era of digital education, generative AI tools such as ChatGPT are widely used to assist learners in learning, and this is also considered as one type of digital scaffolding.

Previous studies have shown that ChatGPT helps learners by giving them feedback that is tailored to their needs, breaking down tasks into steps and encouraging self-reflective thinking through problem-solving processes (Huda et al., 2025). ChatGPT acts as an interactive tool that is really useful for language learning because it can help learners come up with ideas and make revisions to their work. The support and feedback received can reduce cognitive load and increase student confidence (Putri et al., 2026; Teng, 2024). However, recent research also highlights that if students are passively dependent on ChatGPT, ZPD will not be effectively applied in this situation. Therefore, structured pedagogical activities that can encourage students to critically evaluate AI-generated outputs and actively engage with the scaffolded content must be incorporated in the educational frameworks (Albadarin et al., 2024; Huda et al., 2025).

Past Studies

Many studies have investigated how motivational dimensions, such as expectancy, value, and social support, shape student engagement in online learning environments, as well as how generative AI tools like ChatGPT influence students' academic achievement, writing motivation, self-efficacy, and critical thinking.

Fowler (2018) investigated the multidimensional nature of online learning motivation and the validity of a new measurement tool. The study examined assessing key motivational constructs, specifically expectancy, task value, and social support within web-based courses. The respondents were 160 college students enrolled in online classes at a large public university in the United States. Data were gathered using a quantitative

survey instrument named the Motivation to Learn Online Questionnaire (MLOQ). Findings revealed that the MLOQ demonstrated satisfactory reliability across subscales and identified significant gender differences in overall motivation, extrinsic goal orientation, and social engagement. The implications of this study suggest that online learning motivation is a complex, multidimensional construct that requires educators to consider both individual cognitive beliefs and environmental social dynamics when designing online instruction.

Next, Izni et al. (2024) examined the structural relationships among expectancy, task value, and social support within technology-mediated environments. This research examined how these interconnected motivational factors influence overall student engagement. The respondents were 208 higher education learners from various institutions in Malaysia. The instrument used was a quantitative survey adapted from Fowler's (2018) MLOQ. Findings demonstrated significant positive interrelationships among expectations, perceived task value, and social support in online learning contexts. The implications of this study highlight that motivational factors operate collectively rather than in isolation, indicating that fostering high task value and strong social support systems is essential for sustaining learner engagement in technology-mediated education.

Youssef et al. (2024) investigated the effects of ChatGPT integration on students' academic learning, engagement, and critical thinking. This research examined how utilising ChatGPT as an educational support tool influences overall academic achievement and student involvement in higher education. The respondents were 353 university students in the United Arab Emirates. The data were collected using a structured quantitative survey instrument. Findings indicated that ChatGPT usage was positively associated with enhanced learning experiences, particularly in driving student engagement and academic learning. The implications of this study suggest that ChatGPT functions beyond mere information retrieval and can serve as an effective interactive scaffold to boost academic performance when purposefully integrated into learning activities.

Next, the study by Teng (2024) also looked at learners' perceptions, writing motivation, engagement, self-efficacy, and collaborative tendencies when using ChatGPT for automated feedback. This research focused on the application of ChatGPT as a formative feedback tool within language acquisition contexts. The respondents were 45 English as a Foreign Language (EFL) learners in Macau. The study employed a mixed-methods instrument combining quantitative questionnaires and qualitative semi-structured interviews. Findings showed that receiving AI-supported feedback significantly improved participants' writing motivation, self-efficacy, and behavioral engagement; however, learners also expressed critical concerns regarding over-reliance and content accuracy. The implications of this study demonstrate that while ChatGPT is an effective tool for improving writing confidence and engagement, its success depends heavily on developing students' digital literacy and critical evaluation skills.

In summary, the past studies discussed above demonstrate that online learning success relies heavily on core motivational factors like task value and social support (Fowler, 2018; Izni et al., 2024), while AI integration through tools like ChatGPT can significantly enhance student engagement, academic learning, and self-efficacy (Youssef et al., 2024; Teng, 2024). However, these studies have predominantly examined digital learning motivation and ChatGPT usage as separate research domains. In relation to the present study, these findings collectively indicate that adopting AI technology cannot be fully understood through technical utility alone but must be paired with motivational theories. Therefore, the present study proposes that investigating task value across both online learning environments and ChatGPT integration provides a crucial, unified lens-revealing whether students use generative AI to meaningfully deepen their learning or primarily to complete academic tasks with minimal cognitive effort.

Conceptual Framework of the Study

The conceptual framework for this study (refer to Figure 1) is grounded in Expectancy-Value Theory, which posits that learners' motivation is shaped by their beliefs about succeeding in a task (expectancy) and the perceived importance, usefulness, and interest of the task (task value) (Wigfield & Eccles, 2000). In online learning environments, task value plays a pivotal role in sustaining motivation, engagement, and persistence,

particularly when learners perceive tasks as relevant and meaningful to their academic goals. This relationship aligns with research on online learning motivation, which identifies expectancy, task value, and social support as key determinants of learner engagement and persistence in digitally mediated learning contexts (Fowler, 2018). To support the operationalisation of task value, the framework integrates Scaffolding Theory, derived from Vygotsky's (1978) concept of the Zone of Proximal Development, positioning ChatGPT as a form of digital scaffold that provides timely guidance, feedback, and cognitive support beyond learners' current independent abilities. By reducing task difficulty and enhancing perceived usefulness, ChatGPT increases learners' valuation of online academic tasks. Empirical evidence further supports this relationship, as ChatGPT has been shown to foster learner motivation and sustained engagement through interactive, autonomous learning experiences (Rahmat, 2026). Moreover, the use of ChatGPT has been associated with improvements in learners' critical thinking abilities, academic achievement, and active engagement when integrated as a pedagogically guided support tool (Youssef et al., 2024). Collectively, the framework illustrates how task value, supported by expectancy and scaffolded AI assistance, enhances online learning motivation and meaningful engagement with ChatGPT-enhanced learning environments.

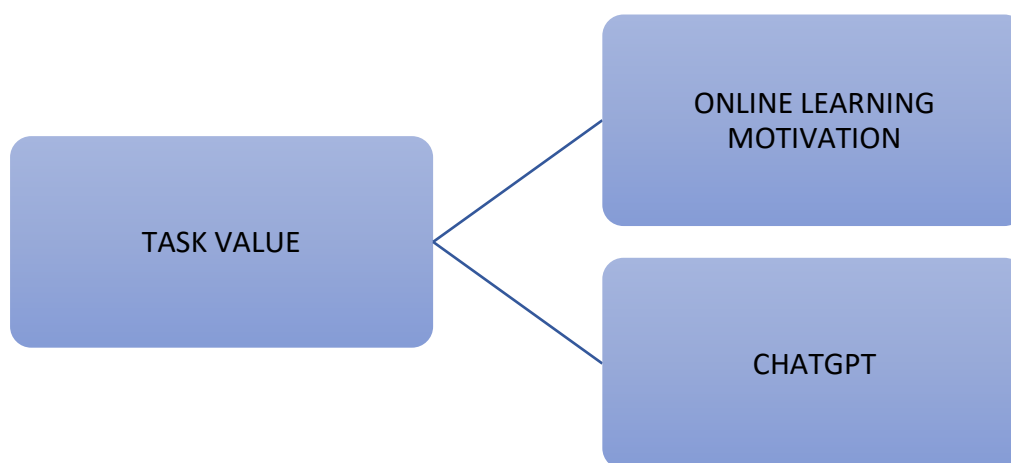


Figure 1- Conceptual Framework of the Study- Task Value and its Influence on Online Learning Motivation and ChatGPT

METHODOLOGY

This quantitative study aims to examine task value and its influence on online learning motivation and ChatGPT use. A convenience sample of 121 participants responded to the survey. The instrument used was a five-point Likert-scale survey adapted from Fowler (2018) for online learning motivation and Youssef et al. (2024) for ChatGPT-related constructs. 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		NO OF ITEMS INDICATORS	Cronbach's alpha
B		TASK VALUE		6	6(.893)
B	ONLINE	EXPECTANCY	Self-Efficacy	7	31(.932)

	LEARNING MOTIVATION Fowler (2018)				
			Control of Learning Beliefs	4	
		VALUE	Intrinsic Goal Orientation	4	
			Extrinsic Goal Orientation	4	
		SOCIAL SUPPORT	Social Engagement	5	
			Instructor Support	7	
C	CHATGPT Youssef, et.al (2024)	CRITICAL THINKING ABILITIES		4	15(.941)
		ACADEMIC ACHIEVEMENT		4	
		CHATGPT USAGE		4	
		STUDENT ENGAGEMENT		3	
					52 (.962)

Table 2 shows the distribution of items in the survey. Section A measured task value and consisted of six items assessing students' perceptions of the importance and usefulness of their learning tasks. The items measuring task value were developed based on the conceptualisation of task value adopted in this study. Section B measured online learning motivation and was adapted from Fowler (2018). It consisted of 31 items covering three main dimensions: expectancy, value, and social support. The expectancy dimension comprised self-efficacy (7 items) and control of learning beliefs (4 items). The value dimension consisted of intrinsic goal orientation (4 items) and extrinsic goal orientation (4 items). The social support dimension comprised social engagement (5 items) and instructor support (7 items). Section C measured ChatGPT-related constructs and was adapted from Youssef et al. (2024). This section consisted of 15 items covering four constructs: critical thinking abilities (4 items), academic achievement (4 items), ChatGPT usage (4 items), and student engagement (3 items). Overall, the survey consisted of 52 items.

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 reliability of the instrument, reliability analysis is conducted. Table 3 above shows the distribution and interpretation of Cronbach Alpha range. According to Ahmad et al. (2024), Cronbach's alpha scores between 0.7 to 0.9 are considered acceptable to excellent.

The reliability analysis showed an overall Cronbach's alpha of 0.962, indicating excellent internal consistency of the instrument. The Cronbach's alpha values for the individual sections were also high, with a value of 0.893 for Task Value, 0.932 for Online Learning Motivation, and 0.941 for ChatGPT-related

constructs. These values indicate high internal consistency among the items within each section. The collected data were further analysed using SPSS to obtain the findings and address the research questions of the study.

FINDINGS

Demographic Analysis

According to Ziegenfuss, et.al (2021), researchers report demographic data in percentages to establish sample representatives and allow for generalisability to a larger population. The reporting also provides an overview of participants' characteristics. Percentages offer a clear and understandable picture of the sample makeup.

Table 4 shows the demographic profile of the participants. A total of 121 participants took part in the study, consisting of 47% males and 53% females. Most respondents were from the Science and Technology cluster (65%), while 35% were from the Social Sciences, Humanities, and Business cluster. In terms of level of study, 74% of the participants were enrolled in diploma programmes, while 26% were pursuing bachelor's degrees.

Table 4- Percentage for Demographic Profile

Question	Demographic Profile	Categories	Percentage (%)
1	Gender	Male	47%
		Female	53%
2	Cluster	Science & Technology	65%
		Social Sciences Humanities & Business	35%
3	Level of Study	Diploma	74%
		Bachelor's Degree	26%

Inferential Statistics

According to He (2024), there are three main functions of a T-test and ANOVA. Firstly, both are done to compare means. This test is also done to determine if the average scores (mean) or values of two groups, or one group against a known value, are different enough to be considered statistically meaningful and are not just due to random chance. Secondly, T-test and ANOVA are done to test hypotheses. Researchers use t-tests and ANOVA to test hypotheses about means, such as whether a new treatment significantly impacts a variable or if there's a difference in performance between two distinct groups. Lastly, T-test and ANOVA are done to identify significant differences. The output of a t-test provides a p-value (significance value). If this p-value is below a predetermined threshold (often 0.05), it indicates a statistically significant difference, allowing researchers to draw conclusions about the populations from which their samples were drawn. A one-way ANOVA (Analysis of Variance) is a statistical method used to compare the means of three or more independent (unrelated) groups to determine if there is a statistically significant difference between them. It is a parametric test that evaluates the effect of a single independent variable (the factor) on a dependent variable.

Findings for Online Learning Motivation across Genders and Clusters

This section presents data to answer research question 1: Is there a significant difference in online learning motivation across gender and clusters?

H₀₁: There is no significant difference in online learning motivation across gender and clusters.

Table 5- T-Test for Online Learning Motivation across Gender and Clusters

		MEAN	SD	T-Statistics <i>df</i>	p-value	OUTCOME
Gender	Male	3.93	0.47	$t(119)=-.306$	0.760	H_0 Accepted
	Female	3.95	0.41			
Cluster	Science & Technology	3.97	0.43	$t(119)=-1.006$	0.317	H_0 Accepted
	Social Sciences, Humanities & Business	3.89	0.44			

With reference to Table 5, a T-test was conducted to examine the effects of online learning motivation across gender and clusters. The analysis shows there is no significant difference in online learning motivation across gender and clusters. Null hypothesis is accepted for H_{01} .

Findings for ChatGPT Use across Gender and Clusters

This section presents data to answer research question 2: Is there a significant difference in ChatGPT use across gender and clusters?

H_{02} : There is no significant difference in ChatGPT use across gender and clusters.

Table 6- T-Test for ChatGPT Use across Gender and Clusters

		MEAN	SD	T-Statistics <i>df</i>	p-value	OUTCOME
Gender	Male	3.83	0.70	$t(119)=-.188$	0.851	H_0 Accepted
	Female	3.85	0.56	243.48		
Cluster	Science & Technology	3.86	0.43	$t(119)=-.306$	0.761	H_0 Accepted
	Social Sciences, Humanities & Business	3.82	0.44			

With reference to Table 5, the analysis shows there is no significant difference in ChatGPT use across gender and clusters. Null hypothesis is accepted for H_{02} .

Descriptive Statistics

Why is there a need to report the mean and standard deviation? According to Vetter (2017), Mean (M) represents the average, or centre of a data set. Standard deviation (SD) indicates the typical distance of individual observations from the mean which shows the data's variability or spread. A low SD means the data points are clustered close to the mean while a high SD indicates they are more spread out. It is good to have a high SD.

Findings for Task Value

This section presents data to answer research question 3: How do learners perceive task value in online learning?

Table 7- 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 the course.	4.09	0.61
VTQ2 It is important for me to learn the course material in class.	4.22	0.65
VTQ3 I am very interested in the content area of the course.	4.12	0.67
VTQ4 I think the course material online is useful for me to learn.	3.97	0.69
VTQ5 I like the subject matter of the course.	3.99	0.70
VTQ6 Understanding the subject matter is very important to me.	4.21	0.64

Table 7 reports the findings on task value in online learning based on six statements. Item VTQ2 recorded the highest mean score ($M = 4.22$, $SD = 0.65$), indicating that respondents considered learning the course material important. This was closely followed by Item VTQ6 ($M = 4.21$, $SD = 0.64$), which indicated that

respondents considered understanding the subject matter to be very important. In contrast, Item VTQ4 recorded the lowest mean score ($M = 3.97$, $SD = 0.69$), suggesting that respondents were slightly less positive about the usefulness of the course material online compared with the other statements. Overall, the findings indicate that respondents demonstrated a high level of task value in the online learning environment.

Findings for Online Learning Motivation

This section presents data to answer research question 4: How do learners perceive online learning motivation? In the context of this study, this is measured by (i) EXPECTANCY; (a) self-efficacy, (b) control of learning beliefs, (ii) VALUE; (a) intrinsic goal orientation, (b) external goal orientation, and (iii) SOCIAL SUPPORT; (a) social engagement and (b) instructor support.

Expectancy (E)

Table 8- Mean (M) and Standard Deviation (SD) for Self- Efficacy (ESE)

Statement	M	SD
ESEQ1 I believe I'll receive excellent grades in my classes.	3.84	0.71
ESEQ2 I'm certain I can understand the most difficult material presented in the readings.	3.45	0.70
ESEQ3 I'm confident I can learn the basic concepts that are being taught.	4.05	0.73
ESEQ4 I'm confident I can understand the most complex material presented by the instructor online.	3.51	0.79
ESEQ5 I'm confident I can do an excellent job on assessments online	3.81	0.72
ESEQ6 I'm certain I can master the skills being taught online.	3.56	0.69
ESEQ7 Although online classes can be challenging, I think I can do well.	3.68	0.74

Table 8 presents the findings for self-efficacy in the Expectancy construct. Overall, the respondents demonstrated a moderate level of confidence in their ability to succeed online. Item ESEQ3 recorded the highest mean value of 4.05 ($SD = 0.73$), which indicated that the respondents felt highly capable of mastering the basic curriculum contents taught. However, the confidence slightly decreased when they had to deal with difficult materials read during online learning, with the lowest mean score recorded for this item ($M = 3.45$, $SD = 0.70$).

Table 9- Mean (M) and Standard Deviation (SD) for Control of Learning Beliefs (ECB)

Statement	M	SD
ECBQ1 I'll be able to learn the materials provided via online.	3.81	0.70
ECBQ2 It's my own fault if I don't learn the material taught online.	4.10	0.76
ECBQ3 If I try hard enough, then I'll understand the material presented online.	4.11	0.77
ECBQ4 If I don't understand the material presented online, it's because I didn't try hard enough.	3.90	0.89

Table 9 shows that the respondents generally held positive control of learning beliefs, with mean scores ranging from 3.81 to 4.11. The highest mean score was recorded for ECBQ3 (If I try hard enough, then I'll understand the material presented online) ($M = 4.11$, $SD = 0.77$), followed closely by ECBQ2 (It's my own fault if I don't learn the material taught online) ($M = 4.10$, $SD = 0.76$). These findings suggest that most respondents believed that learning is influenced by their own effort and commitment. ECBQ4 (If I don't understand the material presented online, it's because I didn't try hard enough) also received a relatively high mean ($M = 3.90$, $SD = 0.89$), although the higher standard deviation indicates greater variation in respondents' views. The lowest mean was recorded for ECBQ1 (I'll be able to learn the materials provided via online) ($M = 3.81$, $SD = 0.70$), but the score still reflects general agreement with the statement. Overall,

the findings indicate that the respondents believed that their learning outcomes were largely within their control and could be improved through appropriate learning strategies and personal effort.

Value (V)

Table 10- Mean (M) and Standard Deviation (SD) for Intrinsic Goal Orientation (VI)

Statement	M	SD
VIQ1 I prefer online material that really challenges me, so I can learn new things.	3.54	0.76
VIQ2 I prefer online material that arouses my curiosity, even if it's difficult to learn.	3.70	0.78
VIQ3 The most satisfying thing for me is trying to understand the online content as thoroughly as possible.	3.80	0.82
VIQ4 I choose assignments that I can learn from even if they don't guarantee a good grade.	3.68	0.78

Table 10 outlines the findings for intrinsic goal orientation under the value construct of online learning motivation. Item VIQ3 recorded the highest mean score ($M = 3.80$, $SD = 0.82$), indicating that respondents felt most satisfied when they were able to gain a deep understanding of the online content. This was followed by Item VIQ2 ($M = 3.70$, $SD = 0.78$), suggesting that respondents were motivated by online materials that stimulated their curiosity, even when the content was challenging. Item VIQ4 obtained a mean score of 3.68 ($SD = 0.78$), showing that respondents were willing to choose assignments that offered meaningful learning opportunities despite not guaranteeing high grades. Meanwhile, Item VIQ1 recorded the lowest mean score ($M = 3.54$, $SD = 0.76$), suggesting that respondents were less motivated by highly challenging online materials. Overall, the findings indicate that respondents demonstrated a positive level of intrinsic goal orientation within the value dimension of online learning motivation.

Table 11- 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.	4.50	0.70
VEQ2 I want to do well in my classes so that I can get awards and recognition.	4.14	0.85
VEQ3 I want to get better grades than most of the other students in my classes.	4.04	0.77
VEQ4 I want to do well in my classes because it's important to show my ability to my family, friends, employer, or others.	4.21	0.82

Table 11 illustrates the findings related to extrinsic goal orientation within the value construct. The findings suggest that learners are heavily influenced by academic achievement and validation from others. This is reflected in Item VEQ1 with the highest mean score of 4.50 ($SD = 0.70$), indicating that obtaining good grades is the most significant incentive for the respondents. The lowest mean score was recorded for Item VEQ3 ($M = 4.04$, $SD = 0.77$), in which they showed a sense of competitiveness among their peers in the class. The consistent results across all indicators ($M > 4.00$) further highlight that external rewards remain a primary focus in their academic journey.

Social Support (S)

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

Statement	M	SD
SSEQ1 I feel "disconnected" from my lecturer and fellow students in classes.	2.57	1.13
SSEQ2 I pay attention in classes.	3.91	0.66
SSEQ3 I enjoy class discussions.	4.17	0.66
SSEQ4 I feel like I can freely communicate with other students in classes.	4.07	0.74
SSEQ5 I have strong relationships with fellow students in classes.	4.06	0.77

Table 12 presents the descriptive statistics for the social engagement construct. Mean scores ranged from 2.57 to 4.17. The highest mean was recorded for SSEQ3 (I enjoy class discussions) ($M = 4.17$, $SD = 0.66$), followed by SSEQ4 (I feel like I can freely communicate with other students in classes) ($M = 4.07$, $SD =$

0.74) and SSEQ5 (I have strong relationships with fellow students in classes) ($M = 4.06$, $SD = 0.77$). SSEQ2 (I pay attention in classes) also recorded a relatively high mean ($M = 3.91$, $SD = 0.66$). In contrast, SSEQ1 (I feel "disconnected" from my lecturer and fellow students in classes) recorded the lowest mean ($M = 2.57$, $SD = 1.13$). Overall, the results indicate relatively high levels of social engagement among the respondents, with lower agreement for the negatively worded item on feeling disconnected from teachers and classmates.

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 lecturer in class.	4.02	0.77
SISQ2 The lecturer responds to questions, clearly, completely, and in a timely manner.	4.30	0.65
SISQ3 The lecturer's expectations for me in are clear.	4.07	0.79
SISQ4 The lecturer provides the guidance I need to be successful in class.	4.29	0.71
SISQ5 The lecturer presents the material in a way that makes it relevant to me.	4.17	0.75
SISQ6 I have the freedom to guide my own learning	4.06	0.70
SISQ7 The lecturer gives regular feedback that helps me understand my performance in this class.	4.11	0.68

Table 13 describes the findings for instructor support under the social support category of online learning motivation. Item SISQ2 recorded the highest mean score ($M = 4.30$, $SD = 0.65$), indicating that respondents appreciated receiving clear and prompt answers from their lecturer. This was followed by Item SISQ4 ($M = 4.29$, $SD = 0.71$), suggesting that the lecturer provided helpful guidance for students to succeed in the course. Item SISQ1 had the lowest mean score ($M = 4.02$, $SD = 0.77$). However, respondents still felt comfortable talking to their lecturer. Overall, the findings indicate positive perceptions of instructor support among the respondents.

Findings for ChatGPT Use

This section presents data to answer research question 5: How do learners perceive the use of ChatGPT in 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)

Statement	M	SD
CTQ1 I often check the accuracy of information from ChatGPT, which improves my critical thinking.	3.93	0.81
CTQ2 ChatGPT's responses made me question their accuracy, so I look for more evidence or clarification.	4.18	0.80
CTQ3 I actively explore alternative viewpoints or sources of information when using ChatGPT to ensure a comprehensive understanding of the topic.	4.12	0.83
CTQ4 I need clarification about the accuracy of ChatGPT's output, which often encourages me to evaluate the information and conduct additional research independently.	4.06	0.78

Table 14 displays the results for critical thinking abilities when using ChatGPT. The highest mean score was recorded for Item CTQ2 ($M = 4.18$, $SD = 0.80$), indicating that respondents tended to question the accuracy of ChatGPT responses and seek further clarification. Conversely, the lowest mean score was recorded for Item CTQ1, with the mean score of 3.93 ($SD = 0.81$).

Although this item recorded the lowest mean score, it is still considered as a strong agreement that consistently checking on the accuracy of responses given by ChatGPT generally improves their critical thinking skills.

Table 15- Mean (M) and Standard Deviation (SD) for Academic Achievements (AA)

Statement	M	SD
AAQ1 ChatGPT brings innovative ideas that are ready to be shared with students.	3.89	0.81
AAQ2 Students can expect strong writing guidance from ChatGPT.	3.48	0.90
AAQ3 ChatGPT has improved my academic performance.	3.67	0.79
AAQ4 ChatGPT has improved my learning pace.	3.65	0.90

Table 15 shows the descriptive statistics for four items that evaluate the perceived impact of ChatGPT on academic achievement. Item AAQ1 received the highest mean score of 3.89 (SD = 0.81). This indicates that respondents perceived ChatGPT as a useful tool for providing new and innovative ideas that could be shared with students. In contrast, Item AAQ2 had the lowest mean score of 3.48 (SD = 0.90), suggesting that respondents were less positive about the writing guidance provided by ChatGPT. The other items in this section also indicate that learners generally recognized the academic benefits of ChatGPT. Item AAQ3 showed that respondents perceived ChatGPT as having improved their academic performance (M = 3.67, SD = 0.79). Additionally, Item AAQ4 received a mean score of 3.65 (SD = 0.90), reflecting respondents' perception that ChatGPT helped improve their learning pace.

Table 16- Mean (M) and Standard Deviation (SD) for Chatgpt Usage (CU)

Statement	M	SD
CUQ1 ChatGPT is an advanced writing tool widely used today.	3.80	0.87
CUQ2 Students seek help from ChatGPT's to help complete their course assignments.	3.99	0.83
CUQ3 ChatGPT helps students in English language translation.	3.97	0.82
CUQ4 Employing ChatGPT significantly improves human productivity.	3.67	0.92

Table 16 presents the descriptive statistics for the ChatGPT usage construct. The mean scores ranged from 3.67 to 3.99. CUQ2 (Students seek help from ChatGPT's to help complete their course assignments) recorded the highest mean (M = 3.99, SD = 0.83), followed by CUQ3 (ChatGPT helps students in English language translation) (M = 3.97, SD = 0.82) and CUQ1 (ChatGPT is an advanced writing tool widely used today) (M = 3.80, SD = 0.87). CUQ4 (Employing ChatGPT significantly improves human productivity) recorded a mean of 3.67 (SD = 0.92). Overall, the findings show higher levels of agreement with items related to the use of ChatGPT for writing and language translation than with items describing its broader impact on productivity and natural language processing.

Table 17- Mean (M) and Standard Deviation (SD) for Student Engagement (SE)

Statement	M	SD
SEQ1 ChatGPT is more interactive, human-like, and engaging for the students.	3.55	0.97
SEQ2 ChatGPT increases confidence in my ability to conduct research/to search for materials.	3.74	0.81
SEQ3 ChatGPT is easy to use and more engaging for me.	3.88	0.80

Table 17 summarises the findings related to students' engagement with ChatGPT. Among the three items, SEQ3 obtained the highest mean score (M = 3.88, SD = 0.80), showing that the respondents generally found ChatGPT easy to use and engaging. SEQ2 achieved the second-highest mean score (M = 3.74, SD = 0.81), indicating that the use of ChatGPT helped improve respondents' confidence in carrying out research and locating relevant materials. SEQ1 had the lowest mean score (M = 3.55, SD = 0.97). However, respondents still found ChatGPT interactive, human-like, and engaging. Overall, the findings suggest that the respondents experienced a moderate level of engagement when using ChatGPT.

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 data to answer the research question on correlation.

To determine if there is a significant association in the mean scores between task value, online learning motivation and ChatGPT, data are analysed using SPSS for correlations. Results are presented separately in Table 18 below.

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

Table 18- Correlation between Task Value, Online Learning Motivation and ChatGPT

		ONLINE MOTIVATION	CHATGPT
TASK VALUE	Pearson Correlation	.747**	.619**
	Sig. (2-tailed)	<.001	<.001
	N	121	121
**. Correlation is significant at the 0.01 level (2-tailed).			

Findings for Relationship between Task Value and Online Learning Motivation

This section presents data to answer research question 6: Is there a relationship between task value and online learning motivation?

H₀₃: There is no relationship between task value and online learning motivation

Table 18 shows there is an association between task value and online learning motivation. Correlation analysis shows that there is a high significant association between task value and online learning motivation ($r=.747^{**}$) and ($p=<.001$). This means that there is also a strong positive relationship between task value and online learning motivation.

Findings for Relationship between Task Value and ChatGPT

This section presents data to answer research question 7: Is there a relationship between task value and ChatGPT?

H₀₄: There is no relationship between task value and ChatGPT

Table 18 shows there is an association between task value and ChatGPT. Correlation analysis shows that there is a high significant association between task value and ChatGPT ($r=.619^{**}$) and ($p=<.001$). This means that there is also a strong positive relationship between task value and ChatGPT.

CONCLUSION

Summary of Findings and Discussions

This section presents and discusses the findings of the study in relation to the research questions and previous literature. The discussion focuses on task value, online learning motivation, and ChatGPT use among university students.

The findings for Research Question 1 indicated that there was no significant difference in online learning motivation across gender and clusters. This finding is consistent with Rahmat et al. (2025), who reported no significant gender influence on expectancy beliefs, task value, or social support in relation to online learning motivation among undergraduate students. This consistency may suggest that gender does not play a significant role in students' online learning motivation within the context of the present study.

The findings for Research Question 2 indicated that there was no significant difference in ChatGPT use across gender and clusters. This finding contrasts with Elshaer et al. (2024), who found that gender moderated the relationship between university students' acceptance and use of ChatGPT, with performance expectancy having a stronger influence on ChatGPT usage among male students. The study also found that study discipline moderated certain factors influencing ChatGPT use. This difference may be attributed to variations in participants' academic disciplines, educational contexts, or patterns of ChatGPT use.

The findings for Research Question 3 indicated that respondents considered learning the course material important, suggesting that they recognized the value of acquiring the knowledge and skills presented in the course. In accordance with Eccles and Wigfield (2020), task value reflects the importance and usefulness that learners attach to an activity, which can influence their motivation and engagement. However, respondents of this study were slightly less positive about the usefulness of the course material compared with the other task value statements. This may indicate that although students viewed the material as important, they were somewhat less certain about its practical usefulness or relevance to their learning needs.

The findings for Research Question 4 indicated that the highest mean was recorded for the item under the extrinsic goal orientation construct, suggesting that obtaining good grades was an important source of satisfaction for students. This finding indicates that students placed considerable value on academic achievement and were motivated by desirable learning outcomes. In accordance with Eccles and Wigfield (2020), the value learners attach to particular outcomes can influence their motivation and engagement. The high mean for extrinsic goal orientation therefore suggests that academic achievement was an important motivational factor among the students in the present study.

The second-highest mean was found for the item reflecting instructor support, indicating that students valued instructors who responded to their questions clearly, completely, and in a timely manner. This finding highlights the importance of effective communication and responsiveness in the online learning environment. In accordance with Izni et al. (2024), social support is an important component of students' motivation to learn online. The relatively high mean for instructor support therefore highlights the role of instructors in supporting students' motivation in an online learning environment.

In contrast, the lowest mean was recorded for the item indicating that students felt disconnected from their instructors and fellow students. As this was a negatively worded item, the low mean suggests that students generally did not feel strongly disconnected from their teachers and peers. This finding therefore indicates a relatively positive level of social engagement among the students. In accordance with Hartnett (2016), social interaction and supportive relationships are important aspects of students' motivation and engagement in online education.

To examine learners' perceptions of ChatGPT use for Research Question 5, four categories were considered: critical thinking abilities, academic achievement, ChatGPT usage, and student engagement. Among these categories, the highest-rated finding was related to critical thinking. The results indicate that learners tended to question the accuracy of information generated by ChatGPT and sought additional clarification or supporting evidence when uncertain about its responses. This finding is consistent with Youssef et al. (2024), who reported that students questioned the precision and reliability of information provided by ChatGPT and consequently sought further clarification and evidence. This suggests that learners tend to evaluate AI-generated information critically rather than relying solely on ChatGPT responses.

The second-highest-rated item was also related to critical thinking, particularly learners' tendency to consider other perspectives and consult additional sources when using ChatGPT. This indicates that learners may recognize the limitations of relying solely on AI-generated information and therefore seek to broaden their understanding through other sources. This finding is consistent with Teng (2024), who reported that although EFL learners generally viewed ChatGPT positively as a writing feedback tool, they also expressed concerns about over-reliance on the technology and the accuracy of its generated content. These concerns

highlight the importance of critically evaluating information provided by ChatGPT and consulting additional sources to support understanding.

However, the current study found that students were less positive about the writing guidance provided by ChatGPT. This may suggest that although learners recognise the potential of ChatGPT to support academic writing, they remain cautious about relying on its suggestions. This finding is relevant to Teng (2024), who found that ChatGPT-supported feedback improved learners' writing motivation, self-efficacy, and behavioural engagement, while learners also expressed concerns about over-reliance and content accuracy. In the present study, the relatively high ratings for critical thinking further suggest that students tend to approach ChatGPT-generated information with caution by questioning its accuracy and seeking additional sources. Therefore, the lower rating for writing guidance may reflect students' awareness that AI-generated suggestions should be critically evaluated and revised rather than accepted without further consideration.

For Research Question 6, the findings revealed a strong positive relationship between task value and online learning motivation. This suggests that learners who perceived their online learning tasks as useful, meaningful, or relevant were more likely to be motivated to participate in and complete those tasks. This finding is consistent with Eccles and Wigfield (2020), who explained that the value learners attach to a task influences their motivation, effort, and engagement in learning activities. Therefore, when learners recognise the importance or usefulness of an online learning task, they may be more willing to invest effort and remain engaged in the learning process.

Similarly, Research Question 7 revealed a strong positive relationship between task value and ChatGPT use. This indicates that learners who perceived their learning tasks as more valuable also tended to report greater ChatGPT use. One possible explanation is that learners may be more likely to use ChatGPT when they perceive it as useful for supporting meaningful learning activities, such as understanding difficult concepts, generating ideas, or completing academic tasks. This interpretation is consistent with Albadarin et al. (2024), who found that ChatGPT is used in education for various forms of learning support. The finding therefore suggests that task value may be associated not only with learners' motivation to engage in online learning but also with their willingness to use ChatGPT to support their learning activities.

Implications and Suggestions for Future Research

Theoretical and Conceptual Implications

The findings support the application of Expectancy-Value Theory (EVT) in understanding students' online learning motivation. The strong positive relationship between task value and online learning motivation indicates that students who perceive learning tasks as important, useful, and relevant are more likely to be motivated to engage in online learning. This finding is in accordance with Wigfield and Eccles (2000), who emphasized the role of task value in shaping learners' motivation and engagement.

The findings also extend the conceptual framework by demonstrating a strong positive relationship between task value and ChatGPT use. This suggests that students who perceive their learning tasks as valuable may be more willing to use ChatGPT to support their learning. In accordance with Eccles and Wigfield (2020), the value attached to a learning activity can influence learners' effort and engagement. Thus, task value may be relevant not only to online learning motivation but also to students' engagement with AI-supported learning.

The findings also provide support for conceptualising ChatGPT as a potential digital learning scaffold. Students' tendency to question ChatGPT-generated information, seek additional evidence, and consider alternative perspectives suggests that ChatGPT can support learning when students actively evaluate and develop the information provided. In accordance with Vygotsky (1978), effective scaffolding supports learners' development while maintaining their active involvement and increasing autonomy. Therefore, the findings suggest that ChatGPT is more appropriately viewed as a supportive learning tool rather than a replacement for students' own thinking.

Pedagogical Implications

The findings suggest that instructors should make the value and relevance of online learning tasks more explicit to students. The positive relationship between task value and online learning motivation indicates that students may be more motivated when they understand the importance, usefulness, and relevance of what they are learning. Therefore, instructors can design activities that are connected to students' academic goals, future careers, and real-world applications. At the beginning of an online activity, instructors could also explain how the task contributes to the intended learning outcomes and why the knowledge or skills are useful beyond the course. Providing meaningful contexts and authentic examples may help students recognise the purpose of online learning activities and encourage more active and sustained participation.

The findings also suggest that ChatGPT should be incorporated through structured and purposeful learning activities rather than being presented as a substitute for students' own work. The positive relationship between task value and ChatGPT use indicates that students may be more willing to engage with ChatGPT when they perceive the learning task as meaningful. Instructors can therefore integrate ChatGPT into activities that require students to use the technology for specific learning purposes, such as generating initial ideas, explaining difficult concepts, providing alternative explanations, or receiving feedback. Clear instructions should be provided regarding when and how ChatGPT should be used so that its role remains supportive rather than replacing students' independent learning and decision-making.

The findings on critical evaluation of ChatGPT-generated information further indicate the need for instructors to explicitly develop students' ability to evaluate AI-generated content. Since students reported questioning the accuracy of ChatGPT responses and consulting additional sources, instructors can build these practices into classroom and online activities. For example, students can be asked to compare ChatGPT-generated responses with information from academic sources, identify inaccurate or unsupported claims, consider alternative perspectives, and explain why particular information should or should not be accepted. Such activities can encourage students to engage with ChatGPT critically rather than accepting its responses without verification. This approach is particularly important when students use ChatGPT for academic tasks, where accuracy, evidence, and responsible use of information are essential.

Finally, the relatively high mean for instructor support highlights the continued importance of teacher involvement in online and AI-supported learning. Instructors should continue to provide clear, complete, and timely responses to students' questions while also offering guidance on the appropriate use of ChatGPT. Rather than allowing students to rely solely on AI-generated assistance, instructors can monitor how ChatGPT is incorporated into learning activities, provide feedback on students' use of AI-generated information, and encourage reflection on what has been learned through the process. Combining responsive instructor support with structured ChatGPT activities may help students benefit from the technology while maintaining active participation, critical thinking, and responsibility for their own learning.

Suggestions for Future Research

Future research could examine the relationships between task value, online learning motivation, and ChatGPT use across different groups of university students. As the present study focused on a specific student population, the findings may not fully represent students from other institutions or educational settings. Research involving students from different universities could provide a broader understanding of whether the relationships identified in the present study remain consistent across different contexts.

Future studies could also examine how students use ChatGPT rather than focusing only on the extent of its use. While the present study examined students' ChatGPT use, it did not explore in detail the purposes, strategies, or decision-making involved in their use of the technology. Qualitative interviews, observations, or analyses of ChatGPT interactions could provide deeper insights into these aspects. Such research could distinguish between productive uses, such as brainstorming, explanation, feedback, and self-directed learning, and less productive uses, such as excessive reliance on AI-generated answers. This would provide

a more comprehensive understanding of how ChatGPT can be integrated into online learning while supporting students' autonomy and critical engagement.

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APPENDIX

Online Learning Motivation & ChatGPT

SECTION	VARIABLE	CONSTRUCT		NO OF ITEMS INDICATORS		TOT
B	ONLINE LEARNING MOTIVATION 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	CHATGPT Youssef, et.al (2024)	Critical thinking abilities		4		15
		Academic achievement		4		
		ChatGPT usage		4		
		Student engagement		3		
						52

Section B – Online Learning Motivation

Expectancy (E)

Self- Efficacy (ESE)

Statement	1	2	3	4	5
ESEQ1 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.					

Control of Learning Beliefs (ECB)

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

Value (V)

Intrinsic Goal Orientation (VI)

Statement	1	2	3	4	5
VIQ1 I prefer online material that really challenges me, so I can learn new things.					
VIQ2 I 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.					
VIQ4 I choose assignments that I can learn from even if they don't guarantee a good grade.					

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.					
VEQ3 I want to get better grades than most of the other students in my classes.					
VEQ4 I want to do well in my classes because it's important to show my ability to my family, friends, employer, or others.					

Task Value (VT)

Statement	1	2	3	4	5
VTQ1 I think I will be able to use what I learn in the course.					
VTQ2 It is important for me to learn the course material in class.					
VTQ3 I am very interested in the content area of the course.					

VTQ4 I think the course material online is useful for me to learn.					
VTQ5 I like the subject matter of the course.					
VTQ6 Understanding the subject matter is very important to me.					

Social Support (S)

Social Engagement (SSE)

Statement	1	2	3	4	5
SSEQ1 I feel "disconnected" from my lecturer 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 classes.					

Instructor Support (SIS)

Statement	1	2	3	4	5
SISQ1 I feel like I can freely communicate with the lecturer in this class.					
SISQ2 The lecturer responds to questions, clearly, completely, and in a timely manner.					
SISQ3 The lecturer's expectations for me in class are clear.					
SISQ4 The lecturer provides the guidance I need to be successful in this class.					
SISQ5 The lecturer 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 lecturer gives regular feedback that helps me understand my performance in this class.					

Section C – ChatGPT

Critical Thinking Abilities (CT)

Statement	1	2	3	4	5
CTQ1 I often check the accuracy of information from ChatGPT, which improves my critical thinking.					
CTQ2 ChatGPT's responses made me question their accuracy, so I look for more evidence or clarification.					
CTQ3 I actively explore alternative viewpoints or sources of information when using ChatGPT to ensure a comprehensive understanding of the topic.					
CTQ4 I need clarification about the accuracy of ChatGPT's output, which often encourages me to evaluate the information and conduct additional research independently.					

Academic Achievements (AA)

Statement	1	2	3	4	5
AAQ1 ChatGPT brings innovative ideas that are ready to be shared with students.					
AAQ2 Students can expect strong writing guidance from ChatGPT.					
AAQ3 ChatGPT has improved my academic performance.					
AAQ4 ChatGPT has improved my learning pace.					

ChatGPT Usage (CU)

Statement	1	2	3	4	5
CUQ1 ChatGPT is an advanced writing tool widely used today.					
CUQ2 Students seek help from ChatGPT's to help complete their course assignments.					

CUQ3 ChatGPT helps students in English language translation.					
CUQ4 Employing ChatGPT significantly improves human productivity.					

Student Engagement (SE)

Statement	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.					