

Exploring the Relationship Between Online Learning Motivation and ChatGPT Usage among University ESL Students

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ABSTRACT

Rapid development of Artificial Intelligence (AI), particularly ChatGPT, has transformed online learning motivation and influenced learners' motivation in higher education. With the increasing reliance on AI-assisted tools for academic support, concerns have emerged regarding their influence on learners' motivation, engagement and learning experiences. Therefore, this study investigated the influence of ChatGPT on learners' online motivation to learn especially in terms of expectancy, value and social support. This study employed quantitative survey research involving 137 students from various academic fields and levels of study. The research instrument consisted of three sections containing 53 items adapted from Fowler (2018) and Youssef et al. (2024). The findings revealed that learners perceived ChatGPT positively particularly in enhancing critical thinking, academic achievement and student engagement. Furthermore, significant positive relationships were found between ChatGPT and expectancy, value and social support. The findings suggest that when used appropriately, ChatGPT has the potential to support learners' motivation and engagement in online learning. This study contributes to the growing body of literature on AI-assisted learning and provides useful implications for educators, institutions and further research in regards to the implementation of generative AI in higher education.

Keywords: ChatGPT, online motivation, artificial intelligence, online learning, Self-Determination Theory

INTRODUCTION

Background of Study

Artificial Intelligence (AI), a technology that enables machines and computers to mimic human intelligence, learning, and problem-solving skills, is not a new technology to begin with. Its existence was recorded way back, even before the emergence of COVID-19. Despite that, the development of AI today is growing at a rapid pace, especially in a time where information technology is deemed important worldwide and in most crucial sectors, especially in the medical, political, economy as well as in the education sector. In education, for example, AI is said to have the ability to address some of the most pressing issues facing education today, improve the teaching and learning methods, and accelerate progress towards Sustainable Development Goal (SDG) 4, which is to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (UNESCO, n.d., para. 1).

In terms of teaching and learning methods, Baidoo-Anu and Owusu Ansah (2023) mentioned that AI allows for personalised tutoring, automated essay grading, language translation, interactive learning, and adaptive learning. Some notable AI tools for education today include NotebookLM, QuillBot, MagicSchool, Eduaide.ai, Canva Magic Write, OpenAI, and many more, which benefit both educators and students in different ways. There are also many AI tools and applications that assist in the teaching and learning of the English language. These AI-enhanced English learning applications act as auxiliary tools and are said to have become increasingly popular

due to their advanced features and adaptability (Qu & Wu, 2024). Among the AI tools used for English language learning are *Speakly*; which functions for real-time pronunciation and fluency practice, *Elsa Speak*; a good precision pronunciation trainer and *Duolingo Max*, which focuses on improving learners' vocabulary and grammar.

Specifically, the advances of AI have led to the creation of another tool, which is AI chatbots. Chatbots, or what others refer to as "smart bots" or "interactive agents," are quite helpful for L2 development among students (Zhang & Huang, 2024), including in learning the English language. One well-known generative AI chatbot used for language learning today is ChatGPT, a Large Language Model (LLM) released by OpenAI in 2022. This chatbot produces text that mimics that of a human by using deep learning techniques (Zare et al., 2025) and is intended to communicate with users and respond to prompts in a contextually appropriate manner. It has shown an extensive ability to automate and enhance educational tasks while successfully capturing the diversity and complexity of human language (Zhang & Huang, 2024). Students frequently use ChatGPT as assistance to translate different languages, edit texts, and refine their assignments. Due to the widespread demand for ChatGPT, researchers have carried out numerous studies to determine its effectiveness in education. Current evidence indicates a promising trajectory for the integration of ChatGPT in education and fosters positive outcomes across various learning domains (Annamalai, 2025). However, some noticeable drawbacks of ChatGPT are a lack of human interaction, limited contextual understanding, generating wrong answers, and creating fictitious articles (Baidoo-Anu & Owusu Ansah, 2023). Hence, students must exercise their critical thinking skills by carefully assessing the quality and relevance of the ChatGPT feedback they received. However, despite its drawbacks, generative AI chatbots like ChatGPT still continue to learn and imitate human intelligence over time, and they have unquestionably advanced far past their initial "chat" phase by becoming agentic AI that serves as a digital coworker. Its rapid advancement has also led to increased attention from researchers to explore more in the area of Computer-Assisted Language Learning (CALL). Nevertheless, Qu and Wu (2024) argued that there is still limited understanding regarding the adoption of generative AI chatbots within the context of English language learning, especially because of their fast learning ability and changes made to the tool every day, proving that more research is still needed in exploring ChatGPT.

Statement of the Problem

Recent studies show that generative artificial intelligence, especially ChatGPT, strongly impacts how students learn online. Many researchers agree that ChatGPT can act as a helpful tool that supports student engagement and performance. For example, Li et al. (2025) found that using ChatGPT in classes significantly improves students' autonomous motivation, research skills, and self-directed learning behaviours. When students use ChatGPT to understand difficult topics, they often feel more confident and engaged in their studies.

However, despite these obvious benefits, there are growing concerns about how ChatGPT actually affects students' real motivation to learn over time. A major issue linked to this topic is the high risk of overreliance. Galindo-Domínguez et al. (2026) noticed that while ChatGPT provides immediate and helpful answers, it can cause severe dependence. This is especially true for students who already struggle with procrastination or lack personal drive. When learners rely too much on AI to complete their assignments, their own cognitive effort drops significantly. This creates a clear problem: while ChatGPT might spark some initial interest, it can negatively affect long-term intrinsic motivation. If students just copy answers without thinking, they might lose their control of learning beliefs and their appreciation for the value of the task. Ultimately, this makes them feel less responsible for their own academic success and disconnected from the learning process.

These conflicting outcomes show exactly why we need to look closer at how different groups of students interact with ChatGPT. A recent 2026 study in the *Journal of Applied Research in Higher Education* strongly suggested that future research must investigate the impact of AI across diverse educational settings, disciplines, and student populations (Mahande et al., 2026). This recommendation points directly to a clear research gap regarding how demographic factors influence the relationship between AI usage and learning motivation.

Responding directly to this call for future research, the reason for this study is to explore how learners from different academic backgrounds use ChatGPT and how it influences their online motivation. Specifically, this study aims to answer the following questions: Is there any significant difference in online motivation and

ChatGPT usage across different levels of study and fields of study? Also, how do learners perceive the use of ChatGPT, alongside their perceptions of expectancy, value, and social support? Ultimately, this leads to the main objective of determining whether there is a significant relationship between ChatGPT and online motivation.

Objective of the Study and Research Questions

This study is done to explore ChatGPT and online learning motivation. Specifically, this study is done to answer the following questions;

1. Is there any significant difference in online motivation across levels of study?

H₀₁: There is no significant difference in online motivation across levels of study.

2. Is there any significant difference for ChatGPT across fields?

H₀₂: There is no significant difference for ChatGPT across fields?

3. How do learners perceive the use of ChatGPT in online learning?

4. How do learners perceive expectancy in online learning?

5. How do learners perceive value in online learning?

6. How do learners perceive social support in online learning?

7. Is there a significant relationship between ChatGPT on online motivation?

H₀₃: There is no significant relationship between ChatGPT on online motivation

LITERATURE REVIEW

Theoretical Framework of the Study

Self-Determination Theory and ChatGPT in Learning

ChatGPT has quietly become one of the most talked-about tools in higher education, and its growing presence in online learning raises questions that researchers are only beginning to work through. It is developed by OpenAI and relies on natural language processing to carry on conversations that feel genuinely responsive, answering questions on demand, adjusting explanations to suit the individual, and delivering feedback without delay. Students reach for it regularly, and that alone makes it worth studying seriously, particularly for researchers interested in what sustains motivation in online learning environments.

The fact that learners use ChatGPT frequently, however, does not automatically explain the motivational forces shaping that behaviour. The frequency of use says nothing about whether learners find it genuinely meaningful or whether they simply default to it out of convenience. Deci and Ryan (2012) developed Self-Determination Theory precisely to make sense of these distinctions. Their framework rests on the premise that people bring three psychological needs into every learning situation, needs that the environment either supports or quietly erodes. Learners need to feel that their choices carry weight, that their efforts actually move them forward, and that they belong somewhere in the process rather than studying in a vacuum. When these conditions hold, motivation tends to be self-sustaining. When they collapse, even well-designed courses struggle to hold learners' attention. Incentive-based approaches have historically dominated attempts to address this problem, yet Ryan and Deci (2020) make clear that motivation built on external pressure rarely holds once that pressure disappears.

This argument finds strong grounding in existing research on online learning environments. Chen and Jang (2010) found that psychological need satisfaction mediates the relationship between environmental support and self-determined motivation in online programmes, meaning the structural qualities of a learning environment shape motivation in ways that go far deeper than content or delivery format. ChatGPT, perhaps unexpectedly, touches

each of these needs in practice. When working through a difficult concept with tailored explanations, it gradually builds the kind of quiet confidence that competence requires. Learners who control the pace and direction of their own enquiry tend to develop a stronger sense of ownership over what they study, something that structured courses do not always allow. Many learners also carry a degree of social anxiety into their studies, and asking questions openly in class or approaching an instructor directly does not always feel comfortable. In that sense, ChatGPT simply removes the social dimension from the equation, letting learners engage with course material on their own terms (Zhou & Li, 2023; Annamalai & Nasor, 2025). Wang, Xu, and Wang (2025) tested these effects experimentally and found that ChatGPT use produced meaningful improvements in both student motivation and psychological well-being. The present study builds on these findings to examine how ChatGPT shapes motivation among Malaysian university learners, using Self-Determination Theory to interpret the constructs of expectancy, value, and social support.

Vroom's Expectancy Motivation Theory and Online Motivation

Motivational force is understood as the internal drive that influences an individual's decision to engage in a particular behavior. Victor Vroom's Expectancy Motivation Theory (1964) explains this force by proposing that motivation arises from the cognitive evaluation of three interconnected components, namely expectancy, instrumentality and valence.

$$M = E \times I \times V$$

This relationship is commonly represented through the formula above, illustrating that motivation is the product of all three components. Expectancy refers to an individual's belief that effort will lead to successful performance, while instrumentality reflects the belief that good performance will result in a desired outcome. Valence, on the other hand, represents the value an individual places on that outcome and the extent to which it is perceived as desirable. The multiplicative nature of the model suggests that low expectancy, instrumentality or valence can significantly reduce overall motivation. As such, a clearer understanding of this theory requires a closer examination of what each component represents.

Although Vroom's theory was originally conceptualised within organisational management, contemporary scholars have successfully extended it to various educational settings. For instance, Lokman et al. (2022) utilised the framework to examine student motivation in higher education, demonstrating its broader applicability to academic performance. More specifically, within digital environments, Massive Open Online Course (MOOC) applications were examined by Lee and Song (2022), who applied the theory to analyse how learners' expectations influence continuous usage intentions. Furthermore, the theory has also been adapted to specialised contexts, such as Rahmat's (2022) investigation of student motivation in foreign language learning. Collectively, these studies suggest that motivation in academic and virtual learning environments remains a conscious, cognitive evaluation, in which learners assess the value and utility of engagement based on expectancy, instrumentality and valence.

Review of Past Studies

AI generative tools like ChatGPT have become an area of interest for current researchers to explore, based on the numerous studies reported. This includes the area of education, where some researchers have shifted their attention to investigate the effectiveness of ChatGPT use in various educational settings. One intriguing area related to education is online motivation. A study by Yamaoka (2024), for example, investigated the online motivation of 10 English as a Foreign Language students who have used ChatGPT in their learning. These students joined Massive Open Online Courses (MOOCs) at their university and used ChatGPT as a supporting tool. The research data were gathered using a four-item survey, adapted from the study of Ebadi and Amini. Results indicated that the students were motivated and felt less anxious when ChatGPT was used throughout their learning. They, however, pointed out that although this tool could motivate them as a personal learning assistant in accomplishing their learning tasks, the tool could lessen their confidence if they do not use it properly. This thus implies that ChatGPT can function as a personalised teaching and learning aid, however, students should not over-rely on it, as it could lead to a decrease in confidence. Similarly, Tersta et al. (2026) studied how ChatGPT affected students' motivation to learn online. The study focused on the four variables from the Self-Determination

Theory (SDT), which are perceived choice, perceived value, perceived competence, and stress–strain. A 5-point Likert-scale questionnaire was adapted from previous studies, with 2,027 fifth-semester students from the University of Jambi becoming the respondents of the study. The findings found that when students used ChatGPT, it improved their perceived choice, perceived competence, and perceived value while lowering the last factor in SDT, which is their stress-strain. This shows that the tool boosts their motivation to learn online. The study implies that educators and universities can use ChatGPT as a learning tool to lessen the academic burden of students, encourage self-directed learning, and improve their conceptual understanding of the subject learned.

Previous studies have also examined the impact of ChatGPT on learners' online motivation and engagement during class. Firstly, Dewi and Ibrahim (2025) looked at how ChatGPT influences learners' emotional, behavioural, and cognitive engagement as well as their intrinsic and extrinsic motives. A Likert-scale questionnaire, also based on the SDT and Fredrick's engagement framework, was used with 385 University of Muhammadiyah East Kalimantan students selected as the respondents. The findings demonstrated that ChatGPT enhances learners' learning environments by offering personalised, interactive, and supportive features that boost their intrinsic motivation while simultaneously promoting active engagement in the learning activities. Moreover, the moderate positive relationship found between motivation and engagement thus shows the importance of motivation in driving students' engagement during learning. This study suggests that education instructors should incorporate AI generative technologies like ChatGPT into their teaching to foster both student motivation and engagement. Extra training and support about ChatGPT should also be given in order to guarantee optimal use of the tool by educators and students. Correspondingly, Rehman and Kang (2024) also investigated the impacts of ChatGPT on these two variables (motivation and engagement) in students' online learning environment. 400 undergraduates from public and private universities in Karachi participated in the survey. Main findings presented that ChatGPT significantly influences students' motivation, academic engagement, and online learning environments. It was also discovered that the increased use of ChatGPT among undergraduates would inspire the groups of instructors, policymakers, and educational professionals to prepare more comprehensive measures to enhance the online learning environments through the use of AI-generative tools.

Interestingly, some studies also examined the online motivation among students when they incorporate ChatGPT to learn English. Zhou (2024), for instance, studied how ChatGPT affected undergraduates' extrinsic and intrinsic motivation, achievement, and social motivations for learning online. This qualitative research study used a semi-structured interview method to collect the data. Two groups of interviewees, consisting of 16 students, were formed; the first group learned English using ChatGPT, and the second group did not use ChatGPT in learning the language. According to the findings, this tool manages to help learners improve their English homework, help them in self-learning the language, improve their self-efficacy in finishing English writing tasks, and enhance their sociability with international friends, all of which are related to elements of motivation to learn. However, the second group (control group) revealed that ChatGPT could lead to losing the ability to think independently, as they depend too much on the tool for giving ideas. Other results indicated that ChatGPT can provide timely support and responses based on learners' learning situations, making them realise their weaknesses when learning English, thus allowing them to formulate future learning strategies. This proves that ChatGPT is beneficial to improve undergraduates' English learning motivation thus, future instructors can use this tool to improve classroom feedback and help learners use ChatGPT to improve their competence during the learning of the language. Another study, which is by Afkarin and Asmara (2024), explored how 35 seventh-semester English language students' motivation and academic performance are affected after using ChatGPT. The study incorporated a mixed-method approach by comparing the experiences of 25 ChatGPT users with 10 non-users of ChatGPT. It was demonstrated that there was a significant difference in terms of motivation between ChatGPT users and non-users, as well as a higher cumulative GPA among the ChatGPT users. On the other hand, the qualitative findings found that this tool has increased the learners' academic efficiency as well as their productivity and also improved their knowledge and independence towards their own learning. The findings thus demonstrate how ChatGPT has successfully become a facilitating tool in improving students' comprehension and learning sessions through their motivation to learn online.

Based on the reported studies, it proves that ChatGPT, as an AI-generative tool, helps to increase students' motivation, improve their engagement with others, enhance understanding and lessen anxiety during independent learning, including during English lessons. However, these studies did not explore the online motivation

differences of the students across different fields and levels of study. Therefore, the current study aimed to fill the current gap, while at the same time still looking at the relationship between ChatGPT and online motivation.

Conceptual Framework of the Study

Figure 1 shows the conceptual framework of the study. This study explores ChatGPT and online motivation. The emergence of ChatGPT has changed the way learners view online learning. One important factor that improves online learning is engagement (Rahmat, 2025). Engagement gives a sense of presence to the learners amidst a non-face-to-face setting. This presence motivates learners. According to Fowler (2018) online motivation, learners stay motivated in online classes because of expectancy, value and social support.

One motivating factor for online learning is the use of ChatGPT. Youssef et al. (2024) proposed that ChatGPT has influence on learners' critical thinking abilities, their academic achievement, and also their engagement during online sessions. ChatGPT provides immediate, personalized, and interactive support that can enhance motivation. By offering instant explanations, examples, and guidance, ChatGPT helps students better understand complex concepts, thereby increasing their sense of competence and confidence. This perceived improvement in academic ability can strengthen students' self-efficacy, a key driver of motivation in online learning contexts. Additionally, the flexibility of ChatGPT supports learner autonomy, allowing students to seek help at their own pace and according to their individual learning needs, which further promotes intrinsic motivation. The conversational nature of the tool can also reduce feelings of loneliness and anxiety often associated with online learning, fostering a sense of support and engagement.

In light of the above, this study is done to explore the relationship between ChatGPT on online motivation among learners.

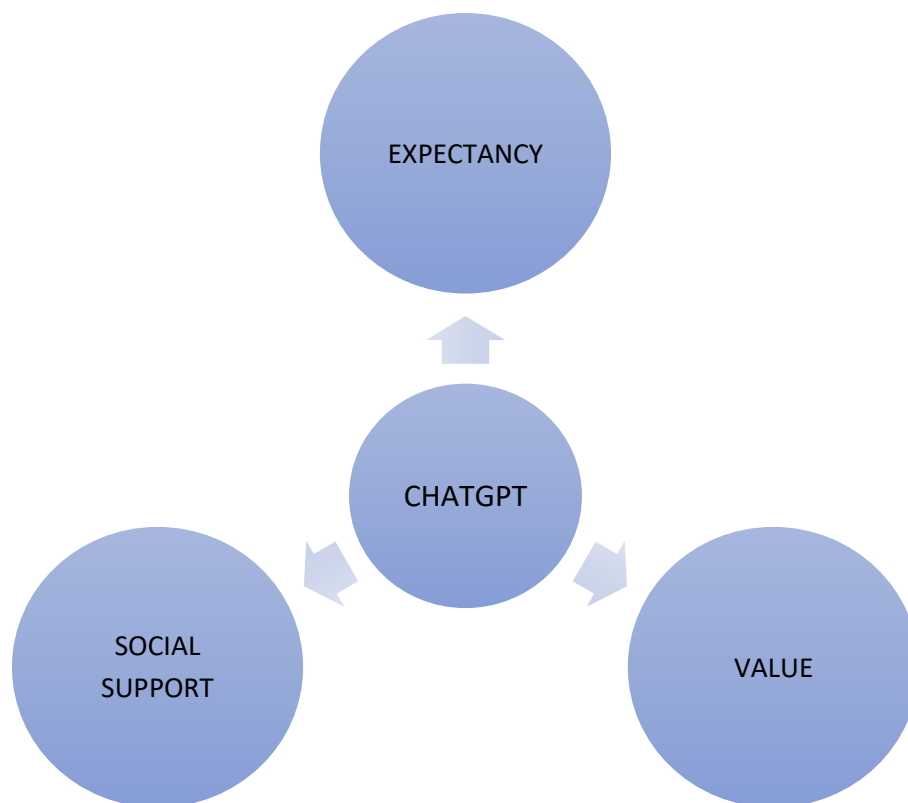


Figure 1- Conceptual Framework of the Study

The Influence of ChatGPT on Online Motivation

METHODOLOGY

This quantitative study is done to explore ChatGPT and online motivation. A convenient sample of 137 participants responded to the survey. The instrument used is a 5-point Likert-scale survey and is rooted from

Fowler (2018) for online motivation and Youssef et al. (2024) for ChatGPT. Table 1 below shows the categories used for the Likert scale; 1 is for Strongly Disagree, 2 is for Disagree, 3 is for Neutral, 4 is for Agree, and 5 is for Strongly Agree.

Table 1- Likert Scale Use

1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

Table 2- Distribution of Items in the Survey

SECTION	VARIABLE	CONSTRUCT	INDICATORS	ITEMS	NO	CA
B	ONLINE MOTIVATION (Fowler, 2018)	EXPECTANCY	Self-Efficacy	7	11	.898
			Control of Learning Beliefs	4		

Table 2 presents the distribution of items in the survey instruments used in this study. The instrument was adapted from Fowler (2018) for Online Motivation and Youssef et al. (2024) for ChatGPT-related constructs. The survey consisted of two main sections: Section B (Online Motivation) and Section C (ChatGPT) with a total of 53 items.

Section B measured Online Motivation and was adapted from Fowler (2018). This section consisted of three main variables: Expectancy, Value and Social Support. The Expectancy variable contained two constructs: Self-Efficacy (7 items) and Control of Learning Beliefs (4 items), contributing to 11 items with a Cronbach's Alpha value of .898. The Value variable consists of Intrinsic Goal Orientation (4 items), Extrinsic Goal Orientation (4 items) and Task Value (6 items) contributing a total of 14 items with a Cronbach's Alpha value of .917. Meanwhile, the Support Social variable included Social Engagement (5 items) and Instructor Support (7 items) with a total of 12 items and a Cronbach's Alpha value of .806.

Section C measured learners' perception of ChatGPT and was adapted from Youssef et al. (2024). This section consisted of four constructs: Critical Thinking Abilities (4 items), Academic Achievement (4 items), ChatGPT Usage (5 items) and Student Engagement (3 items). Altogether this section consisted of 16 items with a Cronbach's Alpha value of .938.

Overall, the survey instrument consisted of 53 items and demonstrated excellent reliability with an overall Cronbach's Alpha value of .967.

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

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

Table 2 also shows the reliability of the survey (refer to Table 3) is adapted from Ahmed et al. (2024). The

analysis shows a Cronbach alpha of .89 for Expectancy, .917 for Value, .906 for Social support, and .938 for ChatGPT. The overall Cronbach alpha for all 53 items is .967; thus, revealing a good reliability of the instrument chosen/used. Further analysis using SPSS is done to present findings to answer the research questions for this study

FINDINGS

Demographic Analysis

According to Zienefuss et al. (2021), demographic data in percentages is to establish sample representatives and support the generalizability of findings to a larger population. The reporting also provides an overview of participants' characteristics and presents the sample makeup clearly and understandably.

Table 4- Percentage for Demographic Profile

Question	Demographic Profile	Categories	Percentage (%)
1	Gender	Male	37%
		Female	63%
2	Age	18-20	71%
		21-23	22%
		24 and above	7%
3	English Proficiency	A-B	81%
		C-D	19%
4	Level of Study	Diploma	71%
		Degree	29%
3	Field	Science & Technology	66%
		Social Sciences, Humanities & Business	34%

Table 4 represents the demographic profile of the respondents in this study. The majority of the respondents are female (63%) and male respondents constitute 37% of the sample. The majority of the respondents were between 18-20 years old, followed by 21-23 and a small number of 24 and above. In terms of English proficiency, the majority of the respondents obtained grades A-B (81%) while 19% obtained grades C-D. In terms of the level of study, most of the respondents were diploma students (71%) while 29% were degree students. Finally, most of the respondents were from the Science and Technology field (66%) while 34% were from the Social Sciences, Humanities and Business field.

Inferential Statistics

According to Shah (2023), there are three main functions of a T-test. Firstly, T-tests 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 is done to test hypotheses. Researchers use t-tests 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 is used 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.

Across Level

This section presents data to answer research question 1: Is there any significant difference in online motivation across level of study?

H_{01} : There is no significant difference in online motivation across levels of study.

Table 5- T-Test for online motivation across level of study

Group Statistics											
	Q4LEVEL	N	Mean	Std. Deviation	Std. Error Mean						
ONLINE_MOTIVATION	DIPLOMA	97	3.9323	.55574	.05643						
	DEGREE	40	3.9899	.41478	.06558						
CHAT_GPT	DIPLOMA	97	3.7461	.61574	.06252						
	DEGREE	40	3.8172	.47775	.07554						

Independent Samples Test											
Levene's Test for Equality of Variances						t-test for Equality of Means					
		F	Sig.	t	df	Significance One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
ONLINE_MOTIVATION	Equal variances assumed	.915	.340	-.590	135	.278	.556	-.05757	.09752	-.25043	.13529
	Equal variances not assumed			-.665	96.608	.254	.507	-.05757	.08652	-.22929	.11415
CHAT_GPT	Equal variances assumed	2.310	.131	-.653	135	.258	.515	-.07105	.10885	-.28632	.14421
	Equal variances not assumed			-.725	93.001	.235	.470	-.07105	.09805	-.26577	.12366

A two-sample t-test (refer to Table 5) was performed to compare online motivation and ChatGPT across levels of study. There was no significant difference between online motivation ($p=0.556$) and ChatGPT ($p=0.515$) across levels of study. This means the null hypothesis is accepted.

Across Fields

This section presents data to answer research question 2: Is there any significant difference for ChatGPT across fields?

H_{02} : There is no significant difference in online motivation across fields.

Table 6- T-Test for online motivation across field of study

Group Statistics											
	Q5FIELD	N	Mean	Std. Deviation	Std. Error Mean						
ONLINE_MOTIVATION	ST	90	3.9994	.47311	.04987						
	SS,H ,B	47	3.8528	.58733	.08567						
CHAT_GPT	ST	90	3.8639	.53737	.05664						
	SS,H ,B	47	3.5811	.61278	.08938						

Independent Samples Test											
Levene's Test for Equality of Variances						t-test for Equality of Means					
		F	Sig.	t	df	Significance One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
ONLINE_MOTIVATION	Equal variances assumed	.047	.829	1.582	135	.058	.116	.14661	.09266	-.03665	.32987
	Equal variances not assumed			1.479	77.837	.072	.143	.14661	.09913	-.05075	.34397
CHAT_GPT	Equal variances assumed	.748	.389	2.785	135	.003	.006	.28277	.10154	.08197	.48358
	Equal variances not assumed			2.672	83.413	.005	.009	.28277	.10582	.07232	.49323

A two-sample t-test (refer to table 6) was performed to compare online motivation and ChatGPT across fields of study. There is no significant difference between online motivation ($p=0.116$). However, there is a significant

difference for ChatGPT ($p=0.006$) across levels of study. This means the null hypothesis is accepted for online motivation but rejected for ChatGPT across fields of study.

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 ChatGPT

This section presents data to answer research question 3: How do learners perceive the use of 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.

(i) Table 7- 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.	3.86	0.81
CTQ2 ChatGPT's responses made me doubt their validity, leading me to seek further clarification or evidence.	4.09	0.77
CTQ3 I actively explore alternative viewpoints or sources of information when using ChatGPT to ensure a comprehensive understanding of the topic.	3.97	0.70
CTQ4 I need clarification about the accuracy of ChatGPT's output, which often encourages me to evaluate the information and conduct additional research independently.	3.94	0.74

Table 7 highlights the findings for critical thinking abilities. The highest score is obtained by item CTQ2, which states that ChatGPT's responses made students feel doubted about the validity of the information shared, which led to them having to search for further evidence ($M=4.09$, $SD=0.77$). This is followed by item CTQ3, whereby students will search for other perspectives or information sources when using ChatGPT for a complete understanding of the subject. This item obtained ($M=3.97$, $SD=0.70$). The lowest mean score in this category can be seen in item CTQ1 with a score of ($M=3.86$, $SD=0.81$). Here, the students typically needed clarification regarding the accuracy and dependability of the data that ChatGPT provides, which improves their capacity for critical thought. These findings thus suggest that students still need to rely on other sources of information, as the data provided by ChatGPT might not be one hundred percent accurate.

(ii) Table 8- 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.	3.82	0.74
AAQ2 ChatGPT brings innovative ideas that are ready to be shared with students.	3.57	0.86
AAQ3 Students can anticipate robust writing guidance from ChatGPT.	3.58	0.80
AAQ4 ChatGPT has improved my academic performance.	3.65	0.85

Table 8 illustrates the findings on how ChatGPT affects students' academic achievements. Item AAQ1 obtained the highest score, ($M=3.82$, $SD=0.74$) whereby when using ChatGPT, the students actively explore other perspectives and different sources of information in order to ensure a thorough understanding of the learned topic. The second highest score was obtained by item AAQ4, which states that students' academic performance has improved with the help of ChatGPT ($M=3.65$, $SD=0.85$). The item with the lowest mean score is AAQ2 ($M=3.57$, $SD=0.86$). Here, ChatGPT offers students creative ideas that are ready to be shared with them. The findings indicate that ChatGPT is an effective assistance tool that helps students to improve their learning.

(iii) Table 9- 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.	3.88	0.79
CUQ2 Students seek help from ChatGPT's assistance in composing essays and articles.	3.86	0.67
CUQ3 ChatGPT helps students in English language translation.	3.91	0.85
CUQ4 Employing ChatGPT significantly improves human productivity.	3.50	0.92
CUQ5 The advent of ChatGPT marks a groundbreaking transformation in Natural Language Processing capabilities.	3.72	0.77

Table 9 presents findings on learners' general use of ChatGPT. The results show that students mostly rely on the tool for language support, as the highest score was for its help with English language translation (M=3.91, SD=0.85). Respondents also strongly agreed that it is a popular, modern writing model (M=3.88, SD=0.79) and frequently use it for assistance when writing essays and articles (M=3.86, SD=0.67). On the other hand, the statement claiming that using ChatGPT greatly improves human productivity received the lowest score in this section (M=3.50, SD=0.92). This suggests that while students find the AI very helpful for specific language and writing tasks, they are slightly less convinced about its overall impact on their broader productivity.

(iv) Table 10- 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.	3.47	0.89
SEQ2 ChatGPT increases confidence in my ability to conduct research/to search for materials	3.66	0.79
SEQ3 ChatGPT is easy to use and more engaging for me	3.77	0.88

Moving on to student engagement, Table 10 illustrates how interacting with the AI affects learners. The highest mean score shows that students find ChatGPT easy to use and personally engaging (M=3.77, SD=0.88). Additionally, using the tool seems to successfully boost their confidence when conducting research or searching for study materials (M=3.66, SD=0.79). However, they scored the statement about ChatGPT being highly interactive and "human-like" the lowest (M=3.47, SD=0.89). This indicates that even though the tool is user-friendly and helps them feel more capable during their studies, students still clearly recognise that they are interacting with a machine rather than a real person.

Findings for Expectancy

This section presents data to answer research question 4: How do learners perceive expectancy in online learning? In the context of this study, this is measured by (i) self-efficacy and (ii) control of learning beliefs.

(i) Table 11- Mean (M) and Standard Deviation (SD) for Self-Efficacy (ESE)

Statement	M	SD
ESEQ1 I believe I'll receive excellent grades in my classes.	3.75	0.74
ESEQ2 I'm certain I can understand the most difficult material presented in the readings.	3.65	0.74
ESEQ3 I'm confident I can learn the basic concepts that are being taught.	4.11	0.71
ESEQ4 I'm confident I can understand the most complex material presented by the instructor online.	3.61	0.80
ESEQ5 I'm confident I can do an excellent job on assessments online	3.92	0.76
ESEQ6 I'm certain I can master the skills being taught online.	3.59	0.86
ESEQ7 Although online classes can be challenging, I think I can do well.	3.88	0.79

Table 11 presents the mean and standard deviation scores for Self-Efficacy (ESE), which refers to learners' self-appraisal of their ability to master learning tasks in online environments (Fowler, 2018). Overall, respondents demonstrated a moderately high level of self-efficacy, with all seven items recording means between 3.59 and 4.11, indicating that learners *often* felt confident in their capacity to perform academically online. The highest

mean was recorded for ESEQ3 (*I'm confident I can learn the basic concepts being taught*; $M = 4.11$, $SD = 0.71$), suggesting that learners felt most assured about grasping foundational content. However, confidence appeared to diminish when learners considered more complex academic demands, as seen in the comparatively lower means for ESEQ6 (*I'm certain I can master the skills being taught online*, $M = 3.59$, $SD = 0.86$) and ESEQ4 (*I'm confident I can understand the most complex material presented by the instructor online*, $M = 3.61$, $SD = 0.80$). This pattern suggests that while learners generally possess a solid baseline of academic competence, their self-efficacy becomes less certain when they face higher-order cognitive challenges in online learning, underscoring the need for structured academic support within digital learning environments.

(ii) Table 12- Mean (M) and Standard Deviation (SD) for Control of Learning Beliefs (ECB)

Statement	M	SD
ECBQ1 If I study in appropriate ways, then I'll be able to learn the material.	3.97	0.77
ECBQ2 It's my own fault if I don't learn the material taught.	4.05	0.77
ECBQ3 If I try hard enough, then I'll understand the material presented.	4.11	0.68
ECBQ4 If I don't understand the material presented, it's because I didn't try hard enough.	3.92	0.83

Table 12 presents the mean and standard deviation scores for Control of Learning Beliefs (ECB), which measures how strongly learners believe that their own effort and study strategies, rather than outside factors, determine what they achieve academically, essentially capturing whether learners see themselves as in control of their own learning (Fowler, 2018). The scores across all four items were notably high, which means falling between 3.92 and 4.11, and that consistency alone says something meaningful about how these learners think about effort and responsibility. ECBQ3 (*If I try hard enough, then I'll understand the material presented*, $M = 4.11$, $SD = 0.68$) and ECBQ2 (*It's my own fault if I don't learn the material taught*, $M = 4.05$, $SD = 0.77$) drew the strongest agreement, which reflects a learner group that genuinely holds itself accountable rather than looking elsewhere when things get difficult. ECBQ4 (*If I don't understand the material presented, it's because I didn't try hard enough*, $M = 3.92$, $SD = 0.83$) scored slightly lower, and that gap is worth paying attention to. Most learners still made an effort to understand, but some were less willing to pin every instance of confusion entirely on themselves, perhaps because lived academic experience teaches that hard work alone does not always guarantee clarity. Thus, these scores collectively suggest that the respondents came into their online learning with a well-developed internal motivational orientation, something that maps naturally onto the autonomy dimension of Self-Determination Theory (Deci & Ryan, 2012) and speaks directly to the kind of self-directed mindset that online learning genuinely requires.

Findings for Value

(i) Table 13- 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	0.80
VIQ2 I prefer online material that arouses my curiosity, even if it's difficult to learn.	3.66	0.85
VIQ3 The most satisfying thing for me is trying to understand the online content as thoroughly as possible.	3.77	0.79
VIQ4 I choose assignments that I can learn from even if they don't guarantee a good grade.	3.79	0.81

Table 13 indicates that participants generally demonstrate a moderate level of intrinsic goal orientation in online learning, as reflected by the mean score range of 3.50 - 3.80. The highest mean score is for VIQ4 ($M=3.79$, $SD=0.81$), which suggests that students are strongly motivated to engage in learning tasks for their inherent value, even when such tasks may not directly contribute to achieving high grades. Closely following this, VIQ3 ($M=3.77$, $SD=0.79$) shows that students derive satisfaction from thoroughly understanding online content, further reinforcing the presence of intrinsic motivation. Moderate levels of agreement are observed for VIQ2 ($M=3.66$, $SD=0.85$), indicating that while students are attracted to materials that stimulate curiosity, some may be slightly cautious when the content becomes difficult. Similarly, VIQ1 ($M=3.54$, $SD=0.80$) records the lowest mean, suggesting that highly challenging materials are somewhat less preferred compared to other factors, although still positively regarded overall.

(ii) Table 14- 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.	4.58	0.76
VEQ2 I want to do well in my classes so that I can get awards and recognition.	4.20	0.92
VEQ3 I want to get better grades than most of the other students in my classes.	4.12	0.94
VEQ4 I want to do well in my classes because it's important to show my ability to my family, friends, employer, or others.	4.31	0.94

Table 14 presents the opposing dimension of the learners' perceived value of online learning: their extrinsic motivation for online learning. The participants exhibit a very high level of extrinsic goal orientation in online learning, as all mean scores are above 4.00. This indicates that external factors such as grades, recognition, and social approval strongly motivate their learning behaviour. The highest mean score is recorded for VEQ1 ($M=4.58$, $SD=0.76$), suggesting that obtaining good grades is the most satisfying outcome for most participants. Next, VEQ4 ($M=4.31$, $SD=0.94$) indicates that students are also motivated to perform well in order to demonstrate their abilities to their significant others. Similarly, VEQ2 ($M = 4.20$, $SD = 0.92$) shows that recognition and rewards are important motivating factors. Meanwhile, VEQ3 ($M = 4.12$, $SD = 0.94$) suggests a competitive element, with students aiming to outperform their peers, although this is the least emphasised among the extrinsic factors.

(iii) Table 15- 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.	4.12	0.79
VTQ2 It is important for me to learn the course material in this class.	4.18	0.72
VTQ3 I am very interested in the content area of this course.	4.96	0.75
VTQ4 I think the course material in this class is useful for me to learn.	3.98	0.76
VTQ5 I like the subject matter of this course.	3.96	0.74
VTQ6 Understanding the subject matter of this course is very important to me.	4.19	0.74

As regards the participants' perceived attractiveness or importance of a task's outcome, Table 15 indicates that participants perceive the task value of the courses of their choice highly, as reflected by the generally elevated mean scores all close to or above 4.00. This suggests that students consider the courses both important and beneficial to their learning. The highest mean score is observed for VTQ3 ($M=4.96$, $SD=0.75$), indicating that students show a very strong interest in the content area. This highlights that the courses of their choice are highly engaging and appealing for them. In addition, VTQ6 ($M=4.19$, $SD=0.74$) and VTQ2 ($M=4.18$, $SD=0.72$) suggest that students place great importance on understanding and learning the course material, reinforcing the perceived relevance of the subject. Similarly, VTQ1 ($M=4.12$, $SD=0.79$) shows that students believe the knowledge gained can be applied to other courses, indicating its broader academic value. On the other hand, slightly lower—but still positive—mean scores are seen for VTQ4 ($M=3.98$, $SD=0.76$) and VTQ5 ($M=3.96$, $SD=0.74$), suggesting that while students find the material useful and they do generally like the subject, these aspects are somewhat less strongly endorsed compared to interest and importance.

Overall, the findings from Tables 13, 14, and 15 suggest that learners place high value on online learning, but this value is shaped more strongly by extrinsic factors, followed closely by task value, with intrinsic motivation being comparatively moderate.

Findings for Social Support

This section presents data to answer research question 6: How do learners perceive social support in online learning? In the context of this study, this is measured by (i) social engagement, and (ii) instructor support

(i) Table 16-Mean (M) and Standard Deviation (SD) for Social Engagement (SSE)

Statement	M	SD
ISSEQ1 I feel "disconnected" from my teacher and fellow students in classes.	2.64	1.04
SSEQ2 I pay attention in classes.	3.99	0.70
SSEQ3 I enjoy class discussions.	3.99	0.82
SSEQ4 I feel like I can freely communicate with other students in classes.	3.89	0.85
SSEQ5 I have strong relationships with fellow students in this course.	3.76	0.90

Table 16 presents the mean and standard deviation scores for Social Engagement (SSE). Item SSEQ2, which reflects learners' attentiveness during class, and Item SSEQ3, which concerns learners' enjoyment of classroom discussion, recorded the highest mean ($M = 3.99$), with standard deviations of 0.70 and 0.82 respectively. This is followed by Item SSEQ4, indicating learners' ability to communicate freely with peers in class ($M = 3.89$, $SD = 0.85$). Item SSEQ5, which relates to development of strong relationships with fellow students, recorded a mean of 3.76 ($SD = 0.90$). Meanwhile, Item SSEQ1, reflecting feelings of disconnection from teachers and peers, recorded the lowest mean ($M = 2.64$, $SD = 1.04$). Overall, the findings indicate that learners generally reported positive levels of social engagement in online learning, particularly in terms of attentiveness, classroom participation, and peer communication.

(ii) Table 17- 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.	3.92	0.80
SISQ2 The instructor responds to questions, clearly, completely, and in a timely manner.	4.16	0.75
SISQ3 The instructor's expectations for me in this class are clear.	4.06	0.72
SISQ4 The instructor provides the guidance I need to be successful in this class.	4.26	0.71
SISQ5 The instructor presents the material in a way that makes it relevant to me.	4.27	0.70
SISQ6 In this course, I have the freedom to guide my own learning	4.06	0.74
SISQ7 The instructor provides regular feedback that helps me gauge my performance in this class.	4.12	0.78

Table 17 shows the mean and standard deviation scores for Instructor Support (SIS). Item SISQ5, which addresses the relevance of instructional materials, recorded the highest mean ($M = 4.27$, $SD = 0.70$). Similarly strong perceptions were recorded for SISQ4 ($M = 4.26$, $SD = 0.71$), indicating the concern on guidance provided for learners' success. Responsiveness also emerged as a notable strength, with SISQ2 ($M = 4.16$, $SD = 0.75$), showing that students view the instructor as timely and clear in addressing questions. Feedback practices were also rated positively, as seen in SISQ7 ($M = 4.12$, $SD = 0.78$). Participants further reported clarity in expectations (SISQ3) and opportunities for learner autonomy (SISQ6) both recorded means of 4.06 ($SD = 0.72$ and $SD = 0.74$ respectively). The lowest score appears in SISQ1, which concerns ease of communication with the instructor ($M = 3.92$, $SD = 0.80$), though the mean remains relatively high. Overall, the results indicate strong perceptions of instructor support, particularly in relevance of instruction, guidance, responsiveness and feedback.

Exploratory Statistics (Correlation)

According to He (2024), correlation is a statistical technique used to determine the strength and direction of relationship between two variables. It is commonly used to describe association between variables without implying a cause and effect relationship. Therefore, this section presents the data analysis conducted to answer the research questions to correlation.

Findings for Relationship between ChatGPT and Online Motivation (Expectancy, Value and Social Support)

This section presents data to answer research question 5: Is there a significant relationship between ChatGPT on online motivation (expectancy, value and social support)?

H_{01} : There is no significant relationship between ChatGPT on online motivation (expectancy, value and social support).

To determine if there is a significant association in the mean scores between ChatGPT with online motivation (expectancy, value and social support), data is analysed using SPSS for correlations. Results are presented separately in Tables 18, 19, and 20 below.

Table 18- Correlation between ChatGPT and Expectancy

		ChatGPT	EXPECTANCY
ChatGPT	Pearson (Correlation	1	.533**
	Sig (2-tailed)		<.001
	N	137	137
EXPECTANCY	Pearson (Correlation	.533**	1
	Sig (2-tailed)	<.001	
	N	137	137

**Correlation is significant at the 0.01 level (2-tailed)

Table 18 shows there is an association between ChatGPT and Expectancy. Correlation analysis shows that there is a high significant association between ChatGPT and Expectancy ($r=.533^{**}$) and ($p=.000$). According to He (2024), the 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. This means that there is also a strong positive relationship between ChatGPT and Expectancy.

Table 19- Correlation between ChatGPT and Value

		ChatGPT	Value
ChatGPT	Pearson (Correlation	1	.555**
	Sig (2-tailed)		<.001
	N	137	137
Value	Pearson (Correlation	.555**	1
	Sig (2-tailed)	<.001	
	N	137	137

**Correlation is significant at the 0.01 level (2-tailed)

Table 19 shows there is an association between ChatGPT and Value. Correlation analysis shows that there is a high significant association between ChatGPT and Value ($r=.555^{**}$) and ($p=.000$). According to He (2024), the 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. This means that there is also a strong positive relationship between ChatGPT and Value.

Table 20- Correlation between ChatGPT and Social Support

		ChatGPT	Social Support
ChatGPT	Pearson (Correlation	1	.534**
	Sig (2-tailed)		<.001
	N	137	137
Social Support	Pearson (Correlation	.534**	1
	Sig (2-tailed)	<.001	
	N	137	137

**Correlation is significant at the 0.01 level (2-tailed)

Table 19 shows there is an association between ChatGPT and Social Support. Correlation analysis shows that there is a high significant association between ChatGPT and Social Support ($r=.534^{**}$) and ($p=.000$). According to He (2024), the 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. This means that there is also a strong positive relationship between ChatGPT and Social Support.

CONCLUSION

Summary of Findings and Discussions

Differences in Online Motivation and ChatGPT Usage

This study explored the influence of ChatGPT on learners' online motivation, particularly in terms of expectancy, value and social support. The findings revealed that there was no significant difference in online motivation across different levels of study. In addition, in regards to the fields of study, there was no significant difference as well. However, there is a significant difference in terms of ChatGPT usage across different fields. This suggests that although learners across disciplines may use ChatGPT differently, their online motivation remains relatively similar. This implies that online motivation is not shaped by the learner's academic background or level of study, but rather their individual learning experience.

These findings confirm with earlier research by Chen and Jang (2010), who emphasized that online learning motivation is strongly influenced by psychological needs such as autonomy, competence and relatedness rather than demographic factors. Similarly, Lee and Song (2022) found that a learner's persistence in online learning depends more on expectancy and value believers rather than educational background.

Learners' Perceptions

In answering research question 3, the findings also revealed that learners generally perceived ChatGPT positively in online learning environments. Learners reported positive influences when it comes to critical thinking. ChatGPT encouraged them to verify information, seek additional evidence, and explore alternative viewpoints. Rather than depending on ChatGPT passively, learners use it as a supportive tool and exercise critical judgement. These findings are in accordance with Yamaoka (2024) who found that ChatGPT motivated learners and encouraged them to evaluate information carefully. Similarly, Zhou (2024) reported that ChatGPT assisted learners in terms of identifying their weakness and developing more effective learning strategies.

In terms of academic achievement, learners believe that ChatGPT improved their academic performance and supported their learning process. They particularly believe that ChatGPT is helpful for writing guidance and facilitating understanding of course content. These findings align with Afkarin and Asmara (2024) who found that ChatGPT users demonstrated higher motivation and academic performance compared to those who do not use ChatGPT. Similarly, Li et al. (2025) found that AI-assisted tools positively contribute to students' research skills, self-directed learning and engagement. The present study therefore reinforces the idea that ChatGPT can be a powerful tool for academic support when used appropriately.

The findings also further demonstrated that learners frequently use ChatGPT for language related tasks such as translation, essay writing and idea generation. They perceived the tool as a modern and useful educational technology. These findings support Baidoo-Anu and Owusu Ansah (2023) who argued that generative AI technologies can enhance teaching and learning through personalized and interactive support. In terms of student engagement, learners perceived ChatGPT as easy to use and able to increase confidence in conducting research and searching for materials. In addition, Qu and Wu (2024) also noted that AI-enhanced language learning applications have become increasingly popular due to their adaptability and practical benefits for the learners. However, respondents were less convinced that ChatGPT could fully replicate human-like interaction. This suggests that learners still recognize the limitations of AI. These findings correspond with Rehman and Kang

(2024) who found that AI tools positively influence learner engagement and motivation in online learning contexts.

The findings indicated that learners generally demonstrated high levels of expectancy in online learning especially in terms of self-efficacy and control of learning beliefs. Learners expressed confidence in their ability to understand the materials, succeed academically and perform well in online learning environments. They also believe that academic success largely depends on personal effort and effective learning strategies.

These findings are consistent with Fowler (2018) who found that expectancy beliefs significantly influence learners' online motivation. The findings also support Chen and Jang (2010) who emphasize the importance of competence and autonomy in maintaining online motivation. However, learners are less confident when dealing with highly complex online materials which suggest the importance of continued academic guidance and instructional support.

In terms of perceived value, learners generally placed high value on online learning. Among the dimensions measured, extrinsic goal orientation emerged as the strongest factor. This indicates that learners were strongly motivated by grades, recognition and academic achievement. Learners also demonstrated strong task value, perceiving course content as useful, important and relevant to future learning. Intrinsic motivation was also present although comparatively moderate in comparison.

These findings align with previous studies by Ryan and Deci (2020) who explained that intrinsic and extrinsic motivation contribute to sustained learning behaviour. Similarly, Lee and Song (2022) found that learners' expectancy and task value significantly influence online learning persistence. The findings suggest that within online learning environments, learners remain strongly achievement-oriented.

In terms of learners' perception of social support in online learning, findings found that learners generally experienced positive levels of social support. Learners reported positive classroom participation, enjoyment in discussions and comfortable communication with peers. In addition, instructor support was also perceived positively, particularly in terms of guidance, responsiveness, relevance of instructional materials and feedback.

These findings suggest that instructor presence and peer interaction remain important components of effective online learning despite increasing reliance on technology. The finding supports Chen and Jang (2010) who found that supportive online learning environments strengthen learner motivation and satisfaction. Similarly, Dewi and Ibrahim (2025) reported that supportive learning interactions positively influence student engagement and involvement.

Relationship between ChatGPT and Online Motivation

The correlation analysis revealed a significant positive relationship between ChatGPT and all three dimensions of online motivation: expectancy, value and social support. The strongest relationship was found between ChatGPT and value, followed closely by social support and expectancy. These findings indicate that learners who perceive ChatGPT positively are more likely to value their learning experiences, feel motivated to learn and perceive stronger support within online learning environments.

These present findings are consistent with earlier studies. For example, Wang, Xu and Wang (2025) reported that AI-supported learning positively influences motivation and psychological well-being. Similarly, Zhou and Li (2023) reported that ChatGPT contributes positively to learner motivation when integrated appropriately in educational settings. The findings also support Self-Determination Theory as learners perceive ChatGPT as a tool to support independent learning. Learners also indicated that it facilitates academic participation and improves confidence especially in terms of autonomy, competence and relatedness.

Overall, the findings demonstrate that ChatGPT can support learners' motivation in online learning environments. Nevertheless, learners are still cautious about the accuracy and reliability of AI-generated information and reported checking information through other sources. This indicates the importance of guiding students to become more responsible and critical in their use of AI in higher education.

Implications and Suggestions for Future Research

Theoretical and Conceptual Implications

This study contributes theoretically to the growing body of literature on online learning motivation and AI-assisted learning. It integrates Self-Determination Theory and Vroom's Expectancy Theory within the context of ChatGPT usage in higher education. In terms of Self-Determination Theory, the findings support the importance of competence, autonomy and relatedness in maintaining learner motivation. In addition, learners also perceived ChatGPT as a tool that increases confidence, supports independent learning and promotes engagement in online learning environments. The findings therefore reinforce the relevance of Self-Determination theory in explaining learners' motivation in AI-supported learning environments.

Furthermore, the findings also support Vroom's Expectancy Theory particularly the relationship between effort, expectancy and learning outcomes. Learners believe that academic success depends on personal effort, effective learning strategies and the perceived usefulness of learning tools. The findings suggest that students do not view ChatGPT as only a technical assistance tool. Instead, many respondents perceived it as a tool that make them feel more confident, engaged and supported during online learning activities.

Pedagogical Implications

The findings provide several important pedagogical implications for educators, institutions and curriculum designers. First, the positive perceptions of ChatGPT suggest that educators may integrate AI tools into online learning environments to support writing, brainstorming, research assistance and independent learning. Taking advantage of the positive perception of AI, educators can incorporate it to encourage active participation and self-directed learning.

Second, developing AI literacy is important as highlighted in the study. Although the learners perceive ChatGPT positively, there is also concern regarding reliability and accuracy of AI-generated information. Therefore, educators need to guide students to evaluate, verify and use AI responsibly and ethically rather than full reliance.

Third, the findings revealed that even with the increasing use of AI in education, instructors' support remains highly important. This indicates that AI compliments rather than replaces human interaction in education. Hence, educators must continue to provide clear guidance, meaningful feedback to maintain learners' motivation and social engagement in online learning environments.

Finally, educational institutions must develop clear guidelines and training programmes for responsible use of AI in education. Through structured support for both educators and students, AI usage can be maximized rather than overdependence, misinformation and academic dishonesty.

Suggestions for Future Research

There are several suggestions proposed for future research. First, future research can look into the qualitative aspect of AI and online motivation to gain insight into learners' experiences, perceptions, and emotional responses when using ChatGPT in online learning environments. In addition, interview and focus group discussion can provide richer explanations beyond numerical findings.

Second, longitudinal studies would provide a more comprehensive understanding regarding AI-assisted tools' impact over time. Future studies may investigate the long-term effects of ChatGPT usage on learners' performance, motivation, critical thinking and learner autonomy rather than snippets of the situation.

Finally, future studies may explore different variables related to AI-assisted learning such as academic integrity, digital literacy, cognitive load and ethical concerns regarding AI usage in higher education. Through the investigation of these variables, a more comprehensive understanding of how AI can influence teaching and learning in higher education.

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APPENDIX

ONLINE MOTIVATION & CHAT GPT

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

SECTION	VARIABLE	CONSTRUCT		NO OF ITEMS INDICATORS		TOT
B	ONLINE 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	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)

(iii) SELF- EFFICACY (ESE)

Statement
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.

(iv) CONTROL OF LEARNING BELIEFS (ECB)

Statement
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)

(v) Intrinsic Goal Orientation (VI)

Statement
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.

(vi) Extrinsic Goal Orientation(VE)

Statement
VEQ1 Getting a good grade is the most satisfying thing for me.
VEQ2 The most important thing for me is to improve my overall grade point average, so my concern is getting a good grade.
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
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)

(vii) Social Engagement (SSE)

Statement
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.

(viii) Instructor Support (SIS)

Statement
SISQ1 I 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

(ix) CRITICAL THINKING ABILITIES (CT)

ITEM
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.

(x) ACADEMIC ACHIEVEMENTS (AA)

ITEM
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.

(xi) CHATGPT USGAE (CU)

ITEM
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.

(xii) STUDENT ENGAGEMENT (SE)

ITEM
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