

The Influence of Online Environment on Learners' Behaviour and Learning Environment

Siti Mariam Mohammad Iliyas¹, Norhisyam Jenal², Siti Aishah Taib³, Noor Shahariah Saleh⁴, Nadzrah Sa'adan⁵, Maisarah Noorezam⁶, Noor Hanim Rahmat⁷

^{1,3,5,6,7}Akademi Pengajian Bahasa, UiTM Cawangan Johor, Kampus Pasir Gudang, ²Kolej Pengajian Kejuruteraan, Universiti Teknologi MARA Cawangan Johor, Kampus Pasir Gudang,

⁴Akademi Pengajian Bahasa, UiTM Cawangan Negeri Sembilan, Kampus Seremban

Email: sitim364@uitm.edu.my, hisyam0324@uitm.edu.my, aishah711@uitm.edu.my, noorshahariah@uitm.edu.my, nadzr210@uitm.edu.my, maisa691@uitm.edu.my, noorh763@uitm.edu.my

Corresponding Author Email: hisyam0324@uitm.edu.my

To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v13-i6/17113> DOI:10.6007/IJARBSS/v13-i6/17113

Published Date: 09 June 2023

Abstract

Online learning has become prevalent especially during this post COVID-19 pandemic. Therefore, it is important to understand the online learning motivation in order to help online students learn better. This study aims to investigate how learners' behaviour influences learners' online motivation, how learners' environment influences learners' online motivation, how social engagement influences changes in learners' behaviour, how instructor support influences changes in learners' behaviour, and the relationship between instructor support and learners' behaviour, learners' environment, and social engagement. A purposive sample of 100 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Thorndike (1905) to merge with Pintrich & De Groot's (1990) motivational construct to reveal the variables in table 1 below. The survey has 5 sections. Section A has 5 items on demographic profile. Section B has 12 items on Behaviour. Section C has 14 items on Environment. Section D has 5 items on Changes in Behaviour while section E has 7 items on Changes in Environment. This paper has presented and highlighted the crucial elements of online motivation from the perspective of the law of effect by Thorndike (1905). The present findings also provide important pedagogical implications for enhancing students' online learning motivation.

Keywords: Post Pandemic, Online Learning, Motivation, Environment, Behavior

Introduction

Background of Study

The past decade has shown that online learning depends largely on several components such as technology Mustapha et al (2023), internet access Dwijuliani et al (2021), digital resources Hartnett (2016), learning management systems (LMS) Mustapha et al (2023), instructor facilitation Comer & Lenaghan (2013), and learner motivation (Chiu et al., 2021). In general terms, online motivation can be defined as the urge or drive to participate in instructional endeavours in an online environment, which includes online classes, simulated classrooms, or online educational platforms, with the aim to succeed (Dwijuliani et al., 2021). It encompasses the psychological processes that affect online learners' participation (self-determination theory by Ryan & Deci (2000b), perseverance (expectancy-value theory by Wigfield et al (2009), social interaction (social cognitive theory by Bandura, 2002) and achievement (achievement goal theory by Pintrich, 2000). In order to understand it from the perspective of law of effect by Thorndike (1905), the law of effect suggests that behaviours that are resulted in favourable outcomes are more likely to be repeated, whereas behaviours that are resulted in unfavourable outcomes are less likely to be repeated. In the context of online learning, the outcomes or effects of learners' online behaviours can affect their motivation to participate in online learning practices.

On one hand, positive outcomes or rewards in the online learning environment, such as obtaining instant feedback (Wigfield, et al., 2009), accomplishing growth (Pintrich, 2000), or receiving acknowledgment, can boost student motivation. When students receive immediate and significant input on their online tasks, for instance, it may enhance the preferred learning behaviours and improve their motivation to continually participate in similar tasks (e.g. Gonzalez, 2017). The use of positive reinforcement, such as compliment or recognition, has the potential to improve student online motivation and determination to engage and persevere in online learning practices.

On the other hand, negative outcomes or punishments in the online learning environment, such as technical issues, a lack of resources, or unclear interfaces, can diminish the motivation of students. These negative repercussions can create learning obstacles and discourage students from participating in online learning tasks. For example, if students encounter technological challenges that disturb their educational experience online or encounter difficulties to navigate a sophisticated online learning platform, they may become frustrated and lose enthusiasm in continuing with the tasks (e.g. Fortus et al., 2022).

In conclusion, the law of effect implies that the effects or outcomes of students' online behaviours may affect their motivation to participate in online learning. Positive outcomes or rewards may increase motivation, but negative outcomes or punishments can demotivate them (Thorndike, 1905). Educators and instructional developers must therefore design online learning platforms that provide positive outcomes and minimise negative outcomes in order to encourage students' motivation and participation in online educational activities.

Statement of Problem

Motivation in learning has been a prominent aspect being studied in various studies in the past (Cook et.al., 2016; Malone & Lepper, 2021; Ushioda, 2013), and more studies have been done to view the relation of motivation in the context of online learning. Aguilera-Hermida (2020)'s study highlights the significant role of attitude, motivation, self-efficacy, and use of technology in the cognitive engagement and consequently academic performance of students.

Kauffman (2015) contends that an appropriate learning environment is as crucial as other factors such as learning outcomes, instructional design and learner characteristics in

ensuring the motivation in online learning. Meanwhile, Jumaat & Tasir (2014) in their study on instructional scaffolding in an online learning environment found that various types of support by the instructors have positive effects in validating students' success in an online learning setting. As learner's behavior is concerned, it is found to be influenced by learning motivations and learning patterns (Zheng et.al., 2015). On top of that, in Barak et.al (2016) study on motivation to learn in massive open online courses, social engagement indicated by the frequency of message posted and active participation in online forums is proven to increase learners' motivation gain, and consequently lead to improved academic performance.

The highlights on learning environment, instructor support, learners' behavior and social engagement are prominent in the past studies. However, there are very few studies which connect all of these factors in the context of online learning motivation. Thus, the purpose of this study is to investigate the connection between these factors based on the merge of Thorndike's Law of Effect (1905); Pintrich & De Groot's (1990) motivational construct. The outcome of this study is anticipated to further shed light on enhancing the teaching and learning process, especially online learning, hence ensuring the positive outcomes from it.

Objective of the Study and Research Questions

This study is done to explore the motivating factors for learning among undergraduates. Specifically, this study is done to answer the following questions

- How does learners' behaviour influence learners' online motivation?
- How does learners' environment influence learners' online motivation?
- How does social engagement influence changes in learners' behaviour?
- How does instructor support influence changes in learners' behaviour?
- What is the relationship between instructor support and learners' behaviour, learners' environment and also social engagement?

Literature Review

Motivation for Online Learning

In the literature, there is no clear definition of online motivation. However, Hartnett (2016) has explained online motivation from two different perspectives: a learning design perspective and a learner trait perspective. The primary viewpoint in analysing motivation within the context of online learning centres on the design of the learning setting with the aim of stimulating student motivation. Instructional design models, such as the ARCS model developed by Keller (1987), have been frequently employed in the realm of online learning to methodically devise instructional approaches that effectively engage learners, establish the significance of the material, foster self-assurance, and offer fulfilment through both internal and external stimuli. Although significant in understanding motivation in online learning, these design approaches may not provide a comprehensive explanation for individual learner differences and frequently exhibit earlier behaviourist theories of motivation which believe that behaviour is caused by external events or stimuli (Hickey & Granade, 2004). According to current literature on motivation, the drive to learn is a multifaceted combination of diverse elements, encompassing both external rewards and personal characteristics (Hartnett, 2016).

Meanwhile, the second and prevailing approach to examining motivation in online learning has entailed conceptualising motivation constructs as inherent attributes or traits of

learners (Hartnett, 2016). Research in this context has been initiated with the aim of identifying the factors that are responsible for higher attrition rates or can be used to predict the success of learners (Lee et al., 2013). The study of motivation in technology-rich environments has utilised various fundamental theories of motivation, including self-efficacy theory (Bandura, 1997), goal orientation theory (Murayama et al., 2012), interest theory (Hidi et al., 2004), and self-determination theory (Ryan & Deci, 2000a). Among these theories, self-efficacy theory has been the most commonly employed.

Online Learning Environment and how it Influences Learners

Online learning, according to Chang and Fisher (2003), is a structure and technique that connects learners to remote and virtual educational resources while keeping instructors, students, and learning resources independent in location and time. Many factors can have an impact on the success of remote learning. Technology features, approachable virtual mediums, instructional activities, and assessments are among them (Wijekumar et al., 2006; Shuey, 2002). The learning environment, on the other hand, is comprised of social, psychological, and pedagogical during lessons and off-campus situations that can influence learning attitudes and are recognised as a primary determinant of student's mental and emotional achievement (Lim & Fraser, 2018 in Zang et al., 2022).

According to Li et al (2022), when learners are granted autonomy in the online learning environment, they participate more in virtual learning activities and have more intrinsic motivation during the online course. Meanwhile, learners benefit from increased extrinsic motivation under the guidance of teachers. This discussion is consistent with Adewale and Tahir's (2022) assertion that when extrinsic motivations such as instructor support and student collaboration are highlighted, learners will achieve greater fulfilment in online learning, which will later contribute to positive academic success. However, in a virtual class where instructors have complete control, learners' interest in learning is unaffected (Li et al., 2022). This is because the online learning environment gives learners independence, which reduces the impact on engagement. Furthermore, Fan and Tian (2022) emphasised that instructors' dedication and the design of the course both influence participants' impressions of their online learning experience. Adequate technical support, web-based materials, and well-organized online courses are critical in assisting students' learning. However, while the online learning environment promotes students' success, it can also contribute to loneliness, anxiety, tension, and a loss of belonging owing to physical distance and limited peer interaction.

Past Studies on Motivation to Learn Online

Some current studies revealed that students' motivation in online learning was affected both intrinsically and extrinsically as a result of the abrupt transition from traditional face-to-face learning to remote digital learning. Gustiani (2020) conducted a study through snowball sampling, with eight students participating in individual interviews and fourteen students participating in focus group interviews. Thematic analysis was used to assess the material gathered from both interviews. It was discovered that students' motivation for online learning was intrinsically influenced more by their desire to learn new knowledge and their delight in trying out new learning methods. It was also extrinsically impacted by external control and environmental conditions.

Meanwhile, Che Soh et al (2022) conducted a study to evaluate how learners' motivation to study a Social Marketing subject influences their online learning presence. 89

respondents were chosen at random from among the course participants. The survey used 24 items with 5-point Likert scales. According to the findings, the most pleasant thing that motivates the students in this programme is attempting to understand the content of the courses. Learning to acquire a good mark in class is one of the most pleasant things for students. Expectancy components revealed students' self-efficacy, in which they believe they will get exceptional achievements, as well as their belief in control beliefs for learning.

Conceptual Framework

The framework of this study is rooted from the classic law of effect by Thorndike (1905) to merge with online motivation by (Fowler, 2018). Thorndike (1905) states that there are four elements in the law of effect. The law of effect states that learning is the effect of a combination of the behaviour and environment to produce the changed effect in both behaviour and also the target learning environment. In the context of this study, online learning motivation, Thondike's (1905) concept of the law of effect is put to work in Fowler's (2018) change in the current learning environment to that of the online environment through instructor's support.

With reference to Figure 1, learners bring with them their BEHAVIOUR and past experience in their learning ENVIRONMENT. According to Rahmat (2022), each learner is a unique individual who brings with them previous knowledge and background and they affect their ability to learn. In order for an online learning environment to work, the change in environment is prepared through INSTRUCTOR SUPPORT. This can be done through activities that encourage changes in behaviour through SOCIAL ENGAGEMENT.

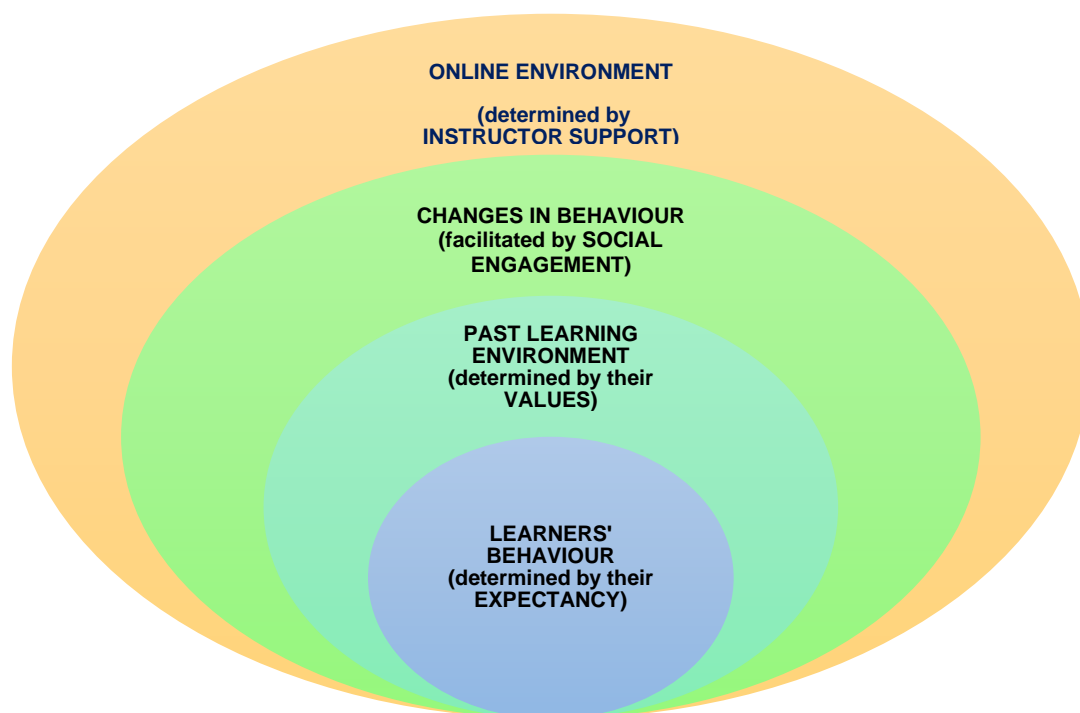


Figure 1- Conceptual Framework of the Study-The Influence of Online Environment on Learners' Behaviour and Learning Environment

Methodology

This quantitative study is done to explore online learning motivation factors for learning among undergraduates. A purposive sample of 100 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Thorndike (1905) to merge with Pintrich & De Groot's (1990) motivational construct to reveal the variables in Table 1 below. The survey has 5 sections. Section A has 5 items on demographic profile. Section B has 12 items on Behaviour. Section C has 14 items on Environment. Section D has 5 items on Changes in Behaviour while section E has 7 items on Changes in Environment.

Table 1

Distribution of Items in the Survey

SECT	LAW OF EFFECT (Thorndike, 1905)	ONLINE MOTIVATION (Fowler,2018)	Constructs for Online Motivation	NO OF ITEMS
B	BEHAVIOUR	EXPECTANCY	Self-Efficacy	8
			Control of Learning Beliefs	4
C	ENVIRONMENT	VALUE	Intrinsic Goal Orientation	4
			Extrinsic Goal Orientation	4
			Task Value	6
D	CHANGES IN BEHAVIOUR	SOCIAL SUPPORT	Social Engagement	5
E	CHANGES IN ENVIRONMENT		Instructor Support	7
				38

Table 2

Reliability of Survey

Reliability Statistics

Cronbach's Alpha	N of Items
.939	38

Table 2 shows the reliability of the survey. The analysis shows a Cronbach alpha of 939, 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

Findings for Demographic Profile

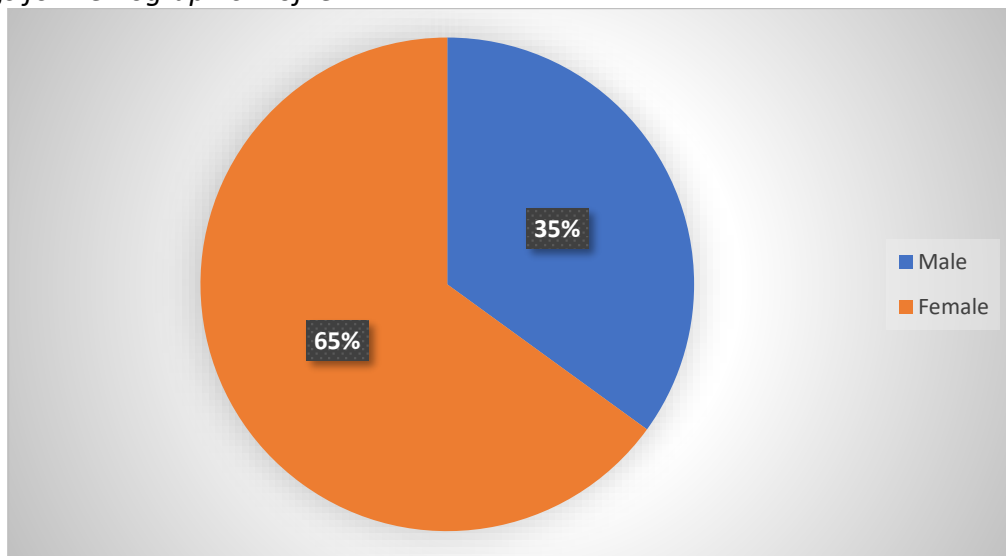


Figure 2-Percentage for Gender

Figure 2 shows the percentage of gender among respondents. Female respondents were the majority with 65% than male respondents with only 35%.

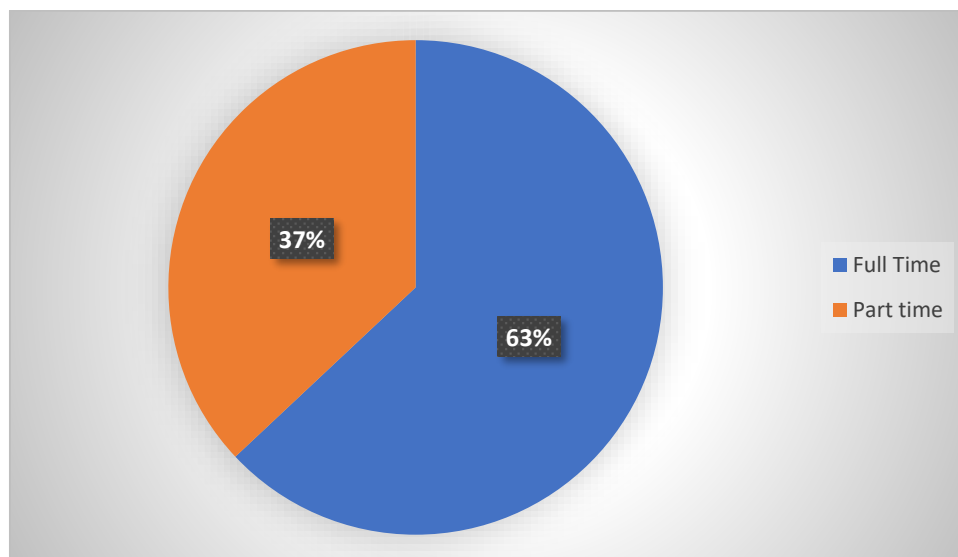


Figure 3-Percentage for Mode of Study

Figure 3 depicts the different modes of study that the respondents represented. 63% of the respondents are studying full time and the remaining 37% of the respondents are doing part-time.

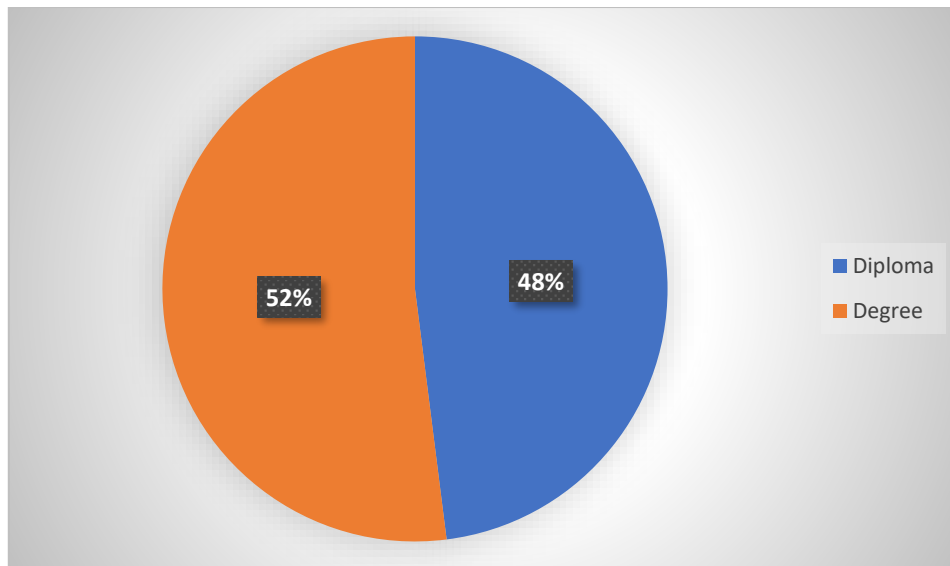


Figure 4-Percentage for Level of Study

Figure 4 presents the respondents' level of study. More than half of them (52%) are doing their Degree, and a slightly lower percentage (48%) are in Diploma level.

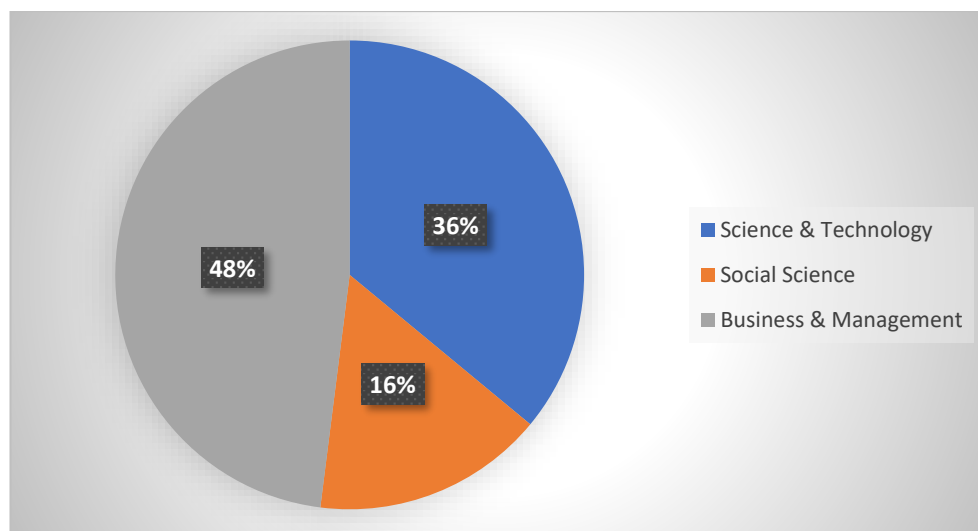


Figure 5-Percentage for Discipline

Figure 5 demonstrates the distribution of different disciplines represented by the respondents. The Business & Management field had the highest proportion (48%) of participants in this research project. The second comes Science & Technology (36%) and the least field of study participated in this study were from Social Science background (16%).

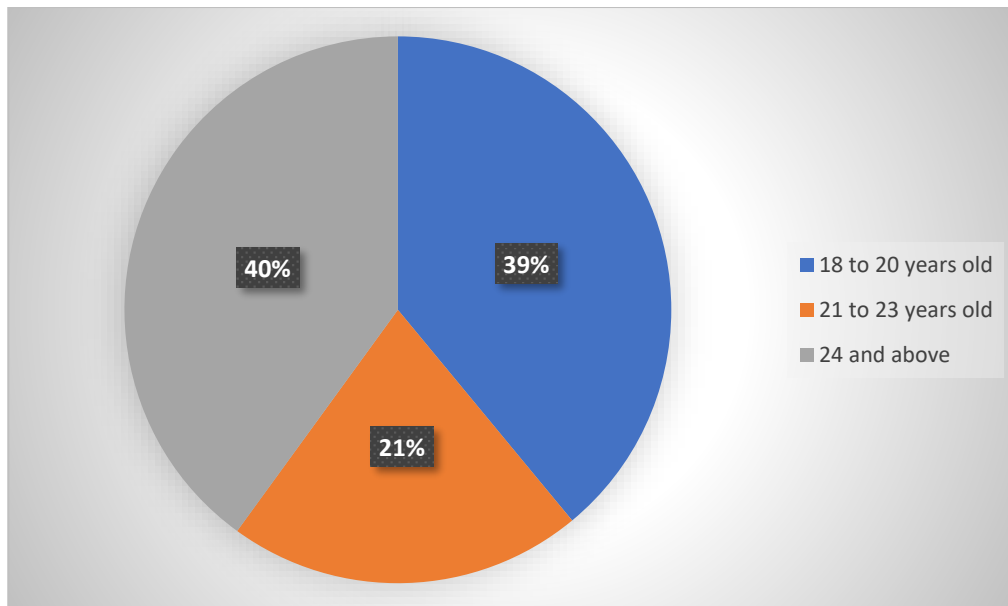


Figure 6-Percentage for Age Group

Figure 6 captures the respondents' age group data. The highest percentage is represented by the age group of 24 and above (40%). For the age group of 18 to 20 years old, 39% respondents were involved. The lowest percentage of the age group of 21 to 23 years shows 21%.

Findings for Learners' behaviour

This section presents data to answer research question 1- How does learners' behaviour influence learners' online motivation? In the context of this study, learners' behaviour is measured by expectancy components such as (i) self-efficacy, and (ii) control of learning beliefs.

Expectancy

(i) SELF- EFFICACY (ESE)

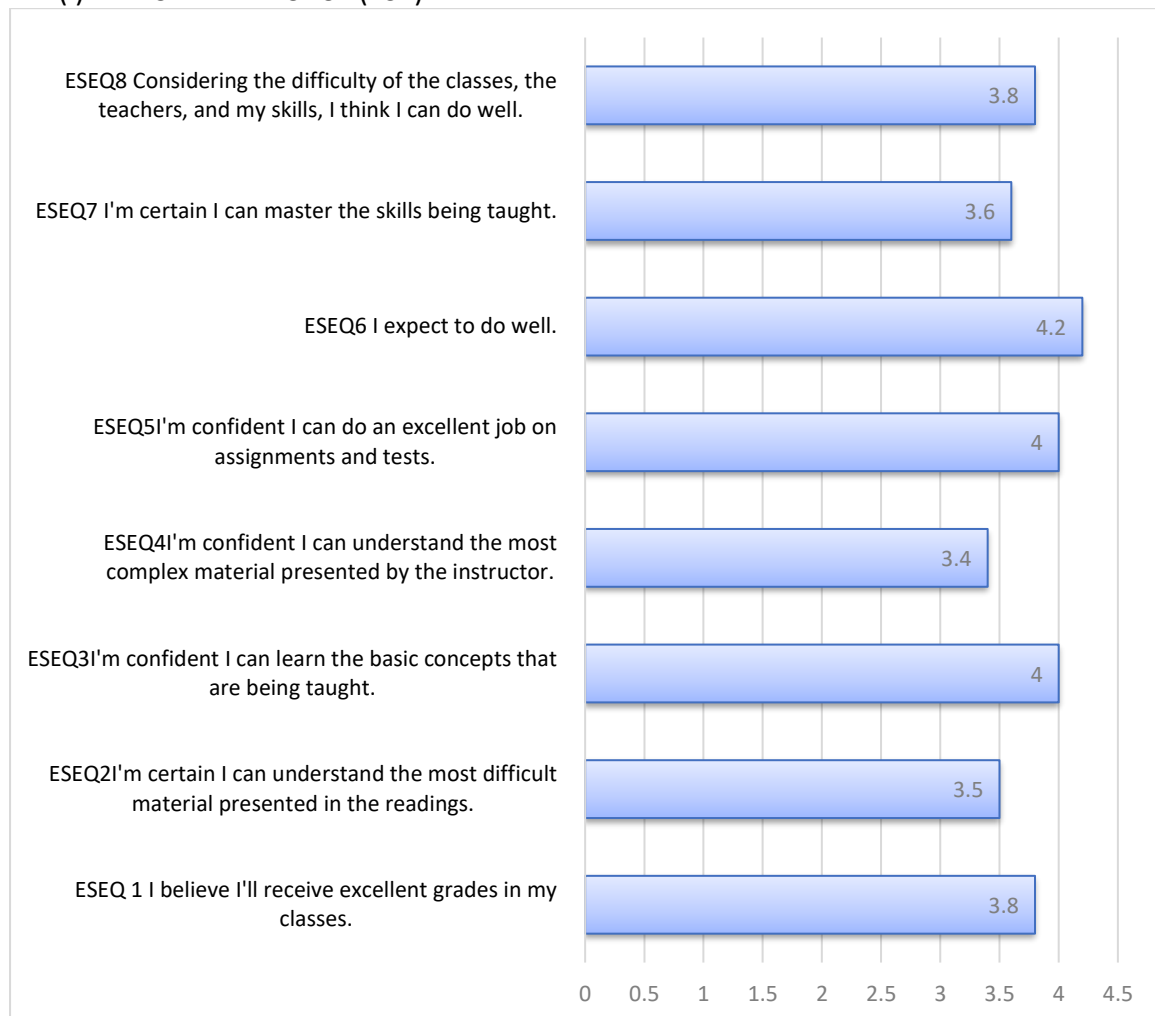


Figure 7-Mean for Self-Efficacy

Figure 7 illustrates the mean for self-efficacy. The highest mean value ($M=4.2$) is for students' expectancy to do well, followed by their confidence to learn the basic concept being taught and do an excellent job on assignment and test ($M=4.0$). The lowest mean value ($M=3.4$) is recorded for the item on students' confidence to understand the most complex material presented by the instructor.

ii) Control of Learning Beliefs (ECB)

Statement	
ECBQ1If I study in appropriate ways, then I'll be able to learn the material.	4.2
ECBQ2It's my own fault if I don't learn the material taught.	4.2
ECBQ3If I try hard enough, then I'll understand the material presented.	4.3
ECBQ4If I don't understand the material presented, it's because I didn't try hard enough.	4.1

Figure 8-Mean for Control of Learning Beliefs

Figure 8 presents the mean for control of learning beliefs. All items were positively rated by the respondents, with slight differences between each mean value. The highest mean value recorded for item 3 - *If I try hard enough, then I'll understand the material presented* (M=4.3). Two items shared the same mean value (M=4.2), slightly lower than the highest value, which are item 1 - *If I study in appropriate ways, then I'll be able to learn the material*, and item 2 - *It's my own fault if I don't learn the material taught*. The lowest mean value is 4.1, for item 4 - *If I don't understand the material presented, it's because I didn't try hard enough*.

Findings for Learners' Environment

This section presents data to answer research question 2- How does learners' environment influence learners' online motivation? In the context of this study, learners' environment is measured by value components such as (i) intrinsic goal orientation, (ii) extrinsic goal orientation, and (iii) task value.

VALUE (V)

(i) Intrinsic Goal Orientation (VI)

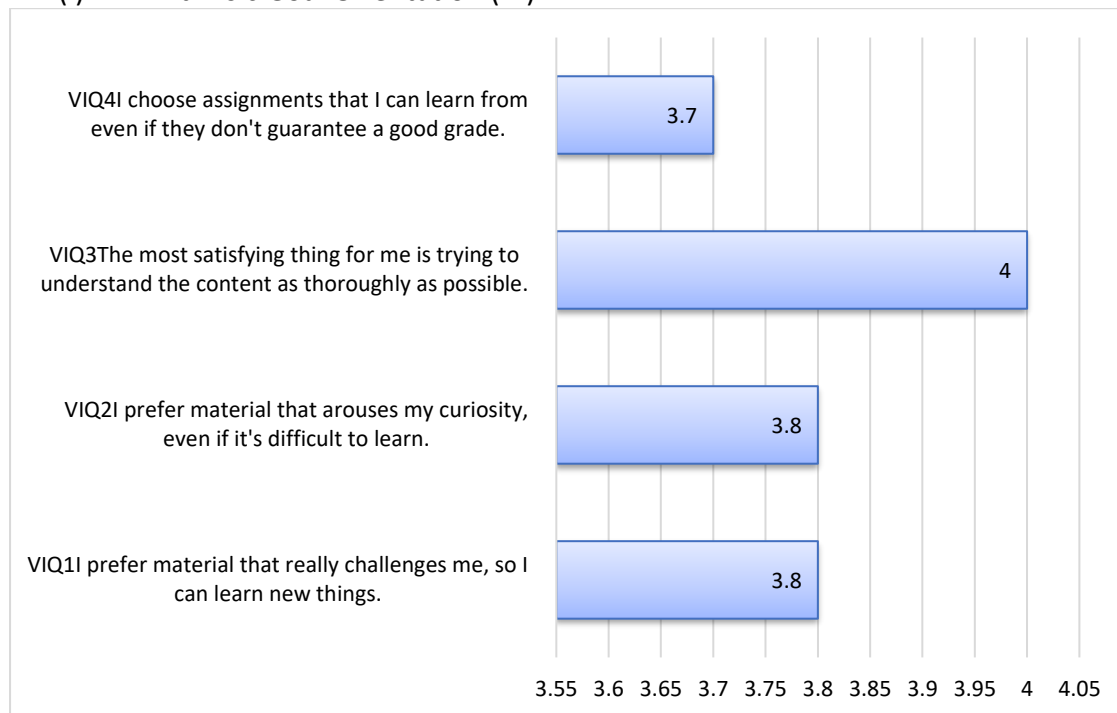


Figure 9-Mean for Intrinsic Goal Orientation

Figure 9 presents the mean scores for Intrinsic Goal Orientation items. All items received positive responses from the respondents, with item 3 (The most satisfying thing for me is trying to understand the content as thoroughly as possible) receiving the highest mean score (M=4), followed by item 1 (I prefer material that really challenges me, so I can learn new things) and 2 (I prefer material that arouses my curiosity, even if it's difficult to learn) with each receiving M=3.8. The lowest mean score was recorded by item 4 (I choose assignments that I can learn from even if they don't guarantee a good grade) with M=3.7.

(ii) Extrinsic Goal Orientation (VE)

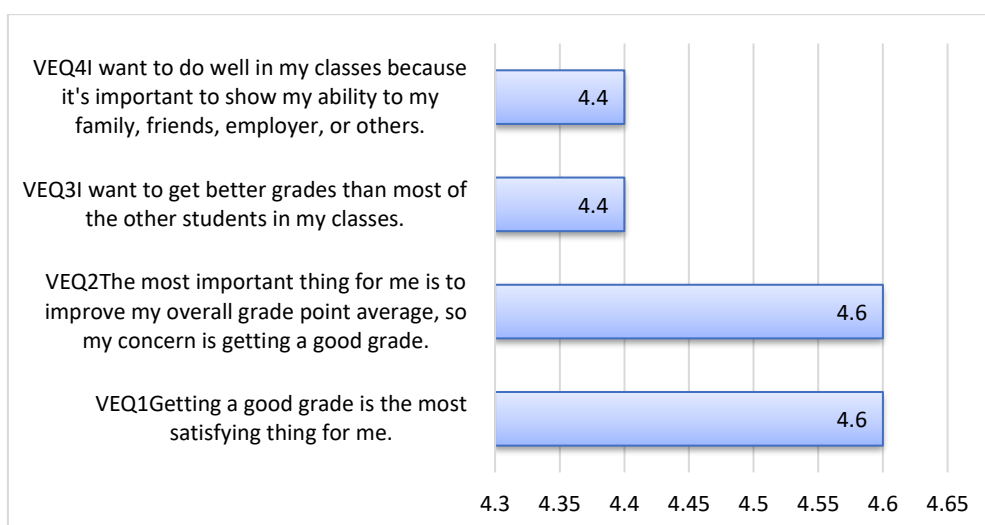


Figure 10-Mean for Extrinsic Goal Orientation

Figure 10 presents the mean score for the 4 items in Extrinsic Goal Orientation scale. Item 1 (Getting a good grade is the most satisfying thing for me) and 2 (The most important thing for me is to improve my overall grade point average, so my concern is getting a good grade) each received the highest mean score ($M=4.6$), while item 3 (I want to get better grades than most of the other students in my classes) and 4 (I want to do well in my classes because it's important to show my ability to my family, friends, employer, or others) each recorded the lowest mean score ($M=4.4$).

(iii) Task Value (VT)

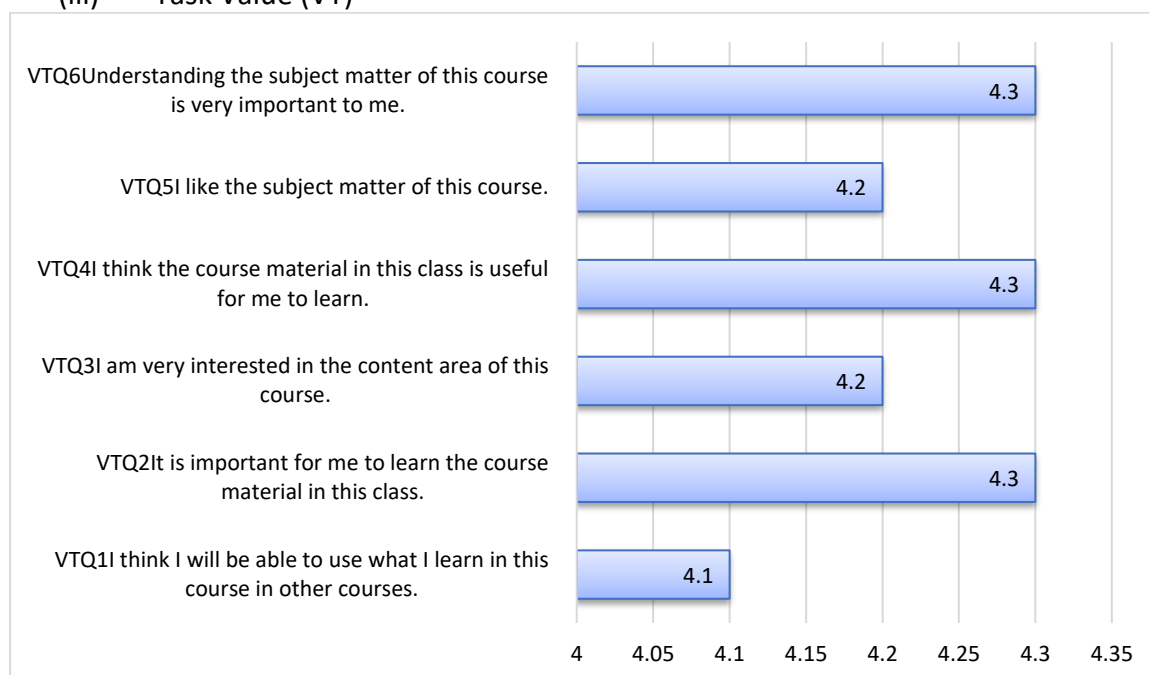


Figure 11-Mean for Task Value

The mean task value is illustrated in Figure 11. Collectively, the mean scores indicate a strong preference for the provided items. The average score for learning the course materials is 4.3, the same as for the use of learning materials and comprehension of the subject matter. The second crucial value is a mean score of 4.2 for favouring the subject matter and finding the course material to be intriguing. The least significant value, 4.1, is demonstrated by the application of the acquired knowledge to other courses.

Findings for Social Engagement

This section presents data to answer research question 3- How does social engagement influence changes in learners' behaviour?

SOCIAL SUPPORT (S)

(i) Social Engagement (SSE)

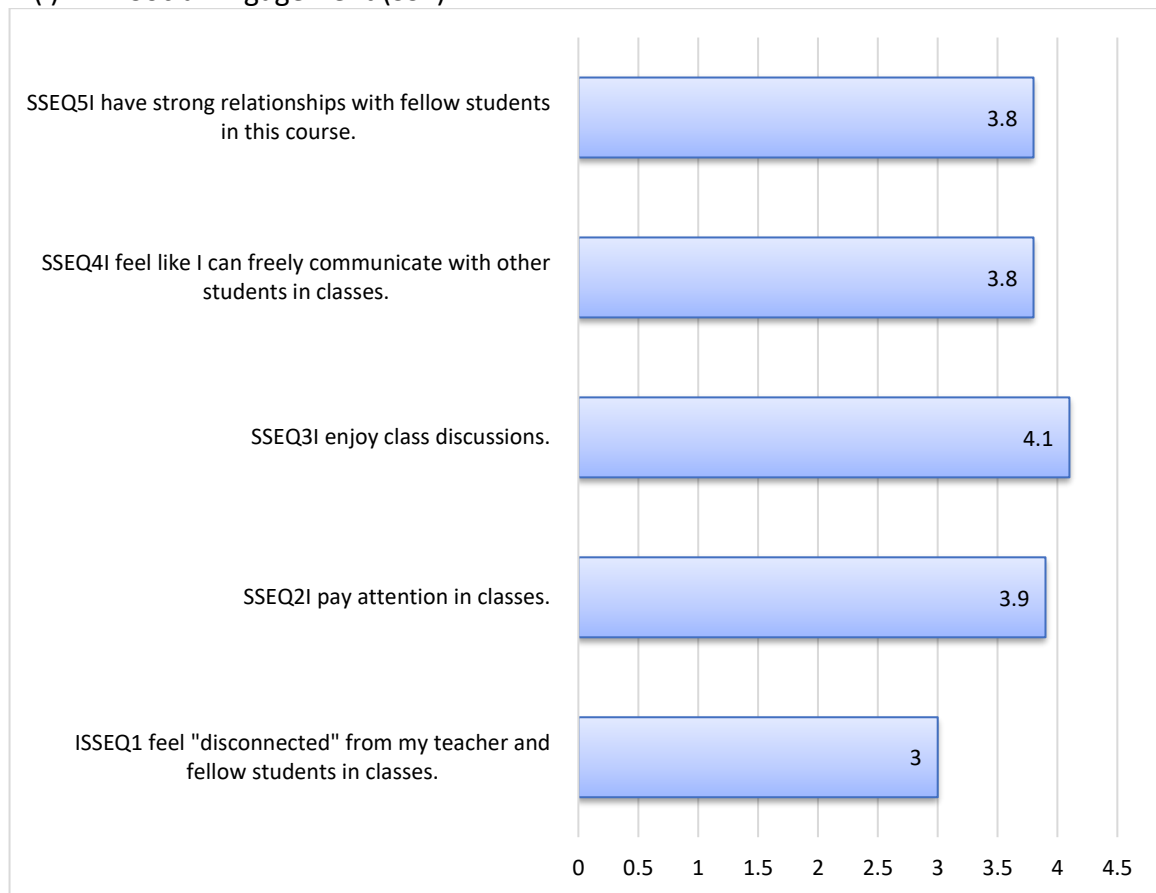


Figure 12-Mean for Social Engagement

Figure 12 shows the mean value for learners' social engagement. Most items show positive indication with mean value higher than three ($M > 3.0$). the highest mean value recorded is on item SSEQ31 ($M=4.1$) where the participants enjoy class discussions followed with item SSEQ21 ($M= 3.9$) indicating positive engagement in paying attention in class. The lowest mean is on item ISSEQ1 where the learners feel disconnected from my teacher and fellow students in classes ($M= 3$)

Findings for Instructor Support

This section presents data to answer research question 4- How does instructor support influence changes in learners' behaviour?

(ii) Instructor Support (SIS)

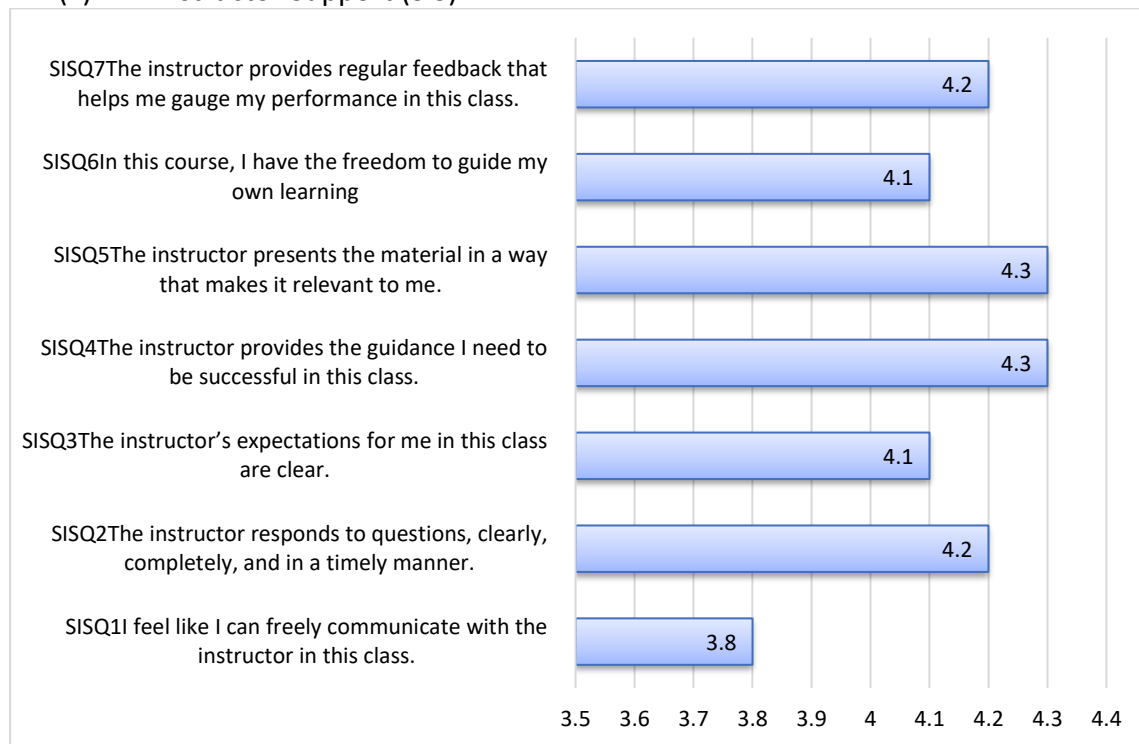


Figure 13-Mean for Instructor Support

Figure 13 illustrates the mean value for Instructor Support. All items show a positive mean score. The highest mean scores ($M=4.3$) are shared by item SISQ4 and SISQ5 on instructor's guidance and delivery that is relevant to the students. In addition, learners agreed that Item SISQ1 and item SISQ7, both on responses and feedback from instructor helps with their performance ($M=4.2$). The least mean value is recorded by item SISQ1 on learners' communication with the instructor ($M=3.8$).

Findings for Relationship between instructor support and learners' behaviour, learners' environment and also social engagement

This section presents data to answer research question 5- What is the relationship between instructor support and learners' behaviour, learners' environment and also social engagement? To determine if there is a significant association in the mean scores between instructor support and learners' behaviour, learners' environment and also social engagement, data is analysed using SPSS for correlations. Results are presented separately in Tables 3, 4, and 5 below.

Table 3

*Correlation between Instructor Support Learners' Behaviour***Correlations**

		TOTALCHAN GESENVTINS TRUCTORSU PPOINT	TOTALBEHA VIOUR
TOTALCHANGESENV TINSTRUC TORSUPPORT	Pearson Correlation	1	.378**
	Sig. (2-tailed)		.000
	N	100	100
TOTALBEHAVIOUR	Pearson Correlation	.378**	1
	Sig. (2-tailed)	.000	
	N	100	100

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

Table 3 shows there is an association between instructor support and behaviour. Correlation analysis shows that there is a low significant association between instructor support and behaviour ($r=.378^{**}$) and ($p=.000$). According to Jackson (2015), 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 weak positive relationship between instructor support and behaviour.

Table 4

*Instructor Correlation between Instructor Support and Environment***Correlations**

		TOTALCHAN GESENVTINS TRUCTORSU PPOINT	TOTALENV T
TOTALCHANGESENV TINSTRUC TORSUPPORT	Pearson Correlation	1	.463**
	Sig. (2-tailed)		.000
	N	100	100
TOTALENV T	Pearson Correlation	.463**	1
	Sig. (2-tailed)	.000	
	N	100	100

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

Table 4 shows there is an association between instructor support and environment. Correlation analysis shows that there is a moderate significant association between instructor support and environment ($r=.463^{**}$) and ($p=.000$). According to Jackson (2015), 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 moderate positive relationship between instructor support and environment.

Table 5

*Correlation between Instructor Support and Changes in Behaviour***Correlations**

		TOTALCHAN GESENVTINS TRUCTORSU PPORT	TOTALCHAN GESBEHAVIO UR
TOTALCHANGESENV TINSTRUCTORSU P PORT	Pearson Correlation	1	.494**
	Sig. (2-tailed)		.000
	N	100	100
TOTALCHANGESENV TINSTRUCTORSU P PORT	Pearson Correlation	.494**	1
	Sig. (2-tailed)	.000	
	N	100	100

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

Table 5 shows there is an association between instructor support and changes in behaviour. Correlation analysis shows that there is a moderate significant association between instructor support and changes in behaviour ($r=.494^{**}$) and ($p=.000$). According to Jackson (2015), 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 moderate positive relationship between instructor support and changes in behaviour.

Conclusion**Summary of Findings and Discussions**

This section will summarise and discuss the main findings according to the research questions. To address the first research question, learners' behaviour influenced learners' online motivation according to self-efficacy and control of learning beliefs. Although all items in both sections received positive ratings from the respondents, the items in control of learning beliefs scale obtained higher mean scores than the items in self-efficacy scale. This finding concurs with a previous study by Adewale & Tahir (2022) whereby a moderate level of students' autonomy (control) was associated with a high level of online learning satisfaction. Therefore, it is imperative to provide students with some control of learning or autonomy in the online educational environment.

To answer the second research question, learners' environment influenced learners' online motivation according to intrinsic goal orientation, extrinsic goal orientation, and task value. All items in all the three scales received positive ratings from the respondents. Interestingly, the items in extrinsic goal orientation scale obtained the highest mean scores, followed by the items in task value scale, and intrinsic goal orientation scale. This finding is consistent with the finding by Jenal et al (2022) whereby students reported higher extrinsic motivation compared to intrinsic motivation and task value of learning during the COVID-19 emergency remote online learning. Thus, online instructors are advised to instil support and stimuli that can enhance online learners' extrinsic motivation.

To answer the third research question, social engagement influenced changes in learners' behaviour according to social support in the online learning environment. Students

provided positive ratings for all the items in this scale except for the first item, whereby they gave a neutral response when asked if they felt disconnected from their teachers and fellow students in classes. Although this result differs considerably from Adewale & Tahir's (2022) discovery that social interaction had the strongest positive effect on learners' satisfaction with online learning, it can nevertheless be argued that the students in this current research did respond positively to the other four items. This implies that online students need more support and stimuli to feel connected to their teachers and fellow classmates.

To answer the fourth research question, instructor support influenced changes in learners' behaviour positively according to the seven items in the scale. Students provided positive ratings to all the seven items with item four (the instructor provided the guidance the students needed to be successful in the class) and item five (the instructor presented the material in a way that made it relevant to the students) receiving the highest mean score. This finding is in line with the previous result by Adewale & Tahir (2022) whereby a high level of instructor support was connected with a high level of online learning satisfaction during the COVID-19 pandemic.

Finally, the last research question revealed three types of relationships between the variables. The first correlation test revealed a weak positive relationship between instructor support and behaviour. The second correlation test revealed a moderate positive relationship between instructor support and environment. The third correlation test revealed a moderate positive relationship between instructor support and changes in behaviour. These results demonstrated the importance of instructor support as it connected with three other variables, namely the students' behaviour, environment, and changes in behaviour. These results substantiate Adewale & Tahir's (2022) finding regarding the relationship between instructor support and online learning satisfaction.

(Pedagogical) Implications and Suggestions for Future Research

This paper has presented and highlighted the crucial elements of online motivation from the perspective of the law of effect by (Thorndike, 1905). The present findings also provide important pedagogical implications for enhancing students' online learning motivation. First, it is proposed that online instructors allow some control or autonomy during online lessons since the first major finding highlights the importance of students' control of learning or autonomy in online learning. As an example, instructors may allow students to choose a topic that they want to present instead of assigning one for them in order to improve their online learning motivation. Second, it is proposed that online instructors provide stimuli and elements that can enhance extrinsic motivation based on the second major finding. For instance, instructors may want to reward students with praise and high grades when they produce complete and outstanding work which will motivate them to do their best and achieve excellent results. Third, it is proposed that online instructors offer ways and methods to connect with the students based on the third major finding. For example, instructors may create a platform in their preferred social media to interact and socialize as a group. This will help students to be connected with their classmates and instructors and avoid the feeling of isolation which can hinder online learning motivation. Fourth, online instructors need to provide support in the teaching and learning process based on the fourth major finding. To illustrate, online instructors can provide related digital resources via a learning management system (LMS) for students to download. Other than that, online instructors can also help weak students that need more guidance by providing detailed explanations and extra examples. In conclusion, these suggestions are proposed based on the major findings and aim to help

students become more motivated while learning online which is different from the conventional face-to-face classroom environment.

As this study was conducted quantitatively, future studies should examine students' opinions and preferences in online learning motivation by conducting a qualitative study. Other than that, it is also recommended that other variables in online learning motivation are included to yield a broader understanding of this issue, such as learning strategy and style. Moreover, it is also encouraged to conduct future research on larger sample sizes and various types of learners.

References

- Adewale, S., & Tahir, M. B. (2022). Virtual learning environment factors as predictors of students' learning satisfaction during COVID-19 period in Nigeria. *Asian Association of Open Universities Journal*, 17 (2), 120-133. DOI 10.1108/AAOUJ-10-2021-0121
- Aguilera-Hermida, A. P. (2020). College students' use and acceptance of emergency online learning due to COVID-19. *International Journal of Educational Research Open*, 1, 100011. <https://doi.org/10.1016/j.ijedro.2020.100011>
- Bandura, A. (2002). Social cognitive theory in cultural context. *Applied psychology*, 51(2), 269-290. <https://www.scinapse.io/papers/2102248767>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Barak, M., Watted, A., & Haick, H. (2016). Motivation to learn in massive open online courses: Examining aspects of language and social engagement. *Computers & Education*, 94, 49-60. <https://doi.org/10.1016/j.compedu.2015.11.010>
- Chang, V., Fisher, D. (2003). The validation and application of a new learning environment instrument to evaluate online learning in higher education. In *Technology-Rich Learning Environments: A Future Perspective*. World Scientific, 1-18.
- Che Soh, M., Puteh, F., Mahmud, M. B., Abdul Rahim, M., Soegiono, A. G., & Rahmat, N. M. (2022). Investigating the Source of Motivation for Online Learning. *International Journal of Academic Research in Business and Social Sciences*, 12(1), 2189–2208. <http://dx.doi.org/10.6007/IJARBS/v12-i1/11411>
- Chiu, T. K., Lin, T. J., & Lonka, K. (2021). Motivating online learning: The challenges of COVID-19 and beyond. *The asia-pacific education researcher*, 30(3), 187-190. <https://doi.org/10.1007/s40299-021-00566-w>
- Comer, D. R., & Lenaghan, J. A. (2013). Enhancing discussions in the asynchronous online classroom: The lack of face-to-face interaction does not lessen the lesson. *Journal of Management Education*, 37(2), 261-294. <https://doi.org/10.1177/1052562912442384>
- Cook, D. A., & Artino Jr, A. R. (2016). Motivation to learn: an overview of contemporary theories. *Medical education*, 50(10), 997-1014.
- Dwijuliani, R., Rijanto, T., Nurlaela, L., & Basuki, I. (2021). Increasing student achievement motivation during online learning activities. In *Journal of Physics: Conference Series* (Vol. 1810, No. 1, p. 012072). IOP Publishing. <https://iopscience.iop.org/article/10.1088/1742-6596/1810/1/012072>
- Fan, J., & Tian, M. (2022). Influence of online learning environment and student engagement on international students' sustainable Chinese learning. *Sustainability*, 14. <https://doi.org/10.3390/su141711106>
- Fowler, S. (2018) The Motivation to learn Online Questionnaire. Doctor of Philosophy Dissertation. Graduate Faculty, The University of Georgia. Retrieved from https://getd.libs.uga.edu/pdfs/fowler_kevin_s_201805_phd.pdf

- Fortus, D., Lin, J., & Passentin, S. (2022). Shifting from Face-to-Face Instruction to Distance Learning of Science in China and Israel During COVID-19: Students' Motivation and Teachers' Motivational Practices. *International Journal of Science and Mathematics Education*, 1-11. <https://doi.org/10.1007/s10763-022-10344-9>
- Gonzales, A. (2017). Social Networking Site Participation and Language Learner Motivation. *Online Language Teaching Research*, 35-54.
- Gustiani, S. (2020). STUDENTS' MOTIVATION IN ONLINE LEARNING DURING COVID-19 PANDEMIC ERA: A CASE STUDY. *HOLISTICS JOURNAL*, 2085-4021. Retrieved from https://www.researchgate.net/publication/315033704_The_Importance_of_Motivation_in_Online_Learning
- Hartnett, M. (2016). *Motivation in online education*. Springer: Singapore.
- Hickey, D. T., & Granade, J. B. (2004). The influence of sociocultural theory on our theories of engagement and motivation. In D. M. McInerney & S. Van Etten (Eds.), *Research on sociocultural influences on motivation and learning: Big theories revisited* (Vol. 4, pp. 223–247). Greenwich, CT: Information Age.
- Hidi, S., Renninger, K. A., & Krapp, A. (2004). Interest, a motivational variable that combines affective and cognitive functioning. In D. Y. Dai & R. J. Sternberg (Eds.), *Motivation, emotion, and cognition: Integrative perspectives on intellectual functioning and development* (pp. 89–115). Mahwah, NJ: Lawrence Erlbaum Associates.
- Jackson, S. L. (2015) *Research methods and Statistics-A Critical Thinking Approach* (5th Edition) Boston, USA:: Cengage Learning.
- Jenal, N., Taib, S. A., Iliyas, S. M. M., Sa'adan, N., Saleh, N. S., & Noorezam, M. (2022). Investigating Students' Learning Motivation Based on Value, Expectancy, and Affective Components. *International Journal of Academic Research in Business and Social Sciences*, 12(10), 641 – 661. <http://dx.doi.org/10.6007/IJARBS/v12-i10/14879>
- Jumaat, N. F., & Tasir, Z. (2014). Instructional scaffolding in online learning environment: A meta-analysis. In *2014 international conference on teaching and learning in computing and engineering* (pp. 74-77). IEEE. <https://doi.org/10.1109/LaTiCE.2014.22>
- Kauffman, H. (2015). A review of predictive factors of student success in and satisfaction with online learning. *Research in Learning Technology*, 23. <http://dx.doi.org/10.3402/rlt.v23.26507>
- Keller, J. M. (1987). Development and use of the ARCS model of instructional design. *Journal of Instructional Development*, 11(4), 2–10. <https://doi.org/10.1007/BF02905780>
- Lee, Y., Choi, J., & Kim, T. (2013). Discriminating factors between completers of and dropouts from online learning courses. *British Journal of Educational Technology*, 44(2), 328–337. <https://doi.org/10.1111/j.1467-8535.2012.01306.x>
- Li, Q., Jiang, Q., Liang, J. Q., Pan, X., & Zhao, W. (2022). The influence of teaching motivations on student engagement in an online learning environment in China. *Australasian Journal of Educational Technology*, 38 (6), 1-20. <https://doi.org/10.14742/ajet.7280>
- Maheshwari, G. (2021). Factors affecting students' intentions to undertake online learning: an empirical study in Vietnam. *Education and Information Technologies*, 26(6), 6629–6649. <https://doi.org/10.1007/s10639-021-10465-8>
- Malone, T. W., & Lepper, M. R. (2021). Making learning fun: A taxonomy of intrinsic motivations for learning. In *Aptitude, learning, and instruction* (pp. 223-254). Routledge.
- Murayama, K., Elliot, A. J., & Friedman, R. (2012). Achievement goals and approach-avoidance motivation. In R. M. Ryan (Ed.), *The Oxford handbook of human motivation* (pp. 191–207). Oxford, UK: Oxford University Press.

- Mustapha, A. M., Zakaria, M. A. Z. M., Yahaya, N., Abuhassna, H., Mamman, B., Isa, A. M., & Kolo, M. A. (2023). Students' Motivation and Effective Use of Self-regulated Learning on Learning Management System Moodle Environment in Higher Learning Institution in Nigeria. *International Journal of Information and Education Technology*, 13(1). <https://doi.org/10.18178/ijiet.2023.13.1.1796>
- Pintrich, P. R. (2000). An Achievement Goal Theory Perspective on Issues in Motivation Terminology, Theory, and Research. *Contemporary educational psychology*, 25(1), 92–104. <https://doi.org/10.1006/ceps.1999.1017>
- Rahmat, N. H. (2022) Learning Group Writing Online: The Case for Cognitive Constructivism. *International Journal of Academic Research in Business & Social Sciences*, Vol 12(6), pp 1093-1108. <http://dx.doi.org/10.6007/IJARBSS/v12-i6/13879>
- Ryan, R. M., & Deci, E. L. (2000a). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25(1), 54–67. <https://doi.org/10.1006/ceps.1999.1020>
- Ryan, R. M., & Deci, E. L. (2000b). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *The American psychologist*, 55(1), 68–78. <https://doi.org/10.1037//0003-066x.55.1.68>
- Thorndike, E. L. (1905). *The elements of psychology*. New York: A. G. Seiler.
- Ushioda, E. (2013). Motivation and ELT: Global issues and local concerns. *International perspectives on motivation: Language learning and professional challenges*, 1-17.
- Wigfield, A., Tonks, S., & Klauda, S. L. (2009). Expectancy-value theory. *Handbook of Motivation in School*, New York: Routledge, 55-76.
- Zang, F., Tian, M., Fan, J., & Sun, Y. (2022). View of Influences of Online Learning Environment on International Students' Intrinsic Motivation and Engagement in the Chinese Learning. *Journal of International Students*, 12, 61-82. <https://www.ojed.org/index.php/jis/article/view/4608/1719>
- Zheng, S., Rosson, M. B., Shih, P. C., & Carroll, J. M. (2015). Understanding student motivation, behaviors and perceptions in MOOCs. In *Proceedings of the 18th ACM conference on computer supported cooperative work & social computing* (pp. 1882-1895). <http://dx.doi.org/10.1145/2675133.2675217>