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Abstract
Studies related to online learning are pertinent to discover ways on enhancing learning interests among students. After the hit of Covid-19 which forced the education system worldwide to change its usual physical mode of teaching into online, many factors such as motivation have garnered attention in research to maintain a productive learning experience for students. The objective of this study is to investigate the influence of autonomy, openness, connectedness and diversity among the learners on online learning motivation. This quantitative study was conducted with 117 students who answered a survey replicated from (Bandura, 1978; Fowler, 2018). The instrument used is a 5 Likert-scale survey with 6 sections; demographic profile, autonomy, openness, connectedness and diversity. The findings demonstrated that a strong linkage is found among values of autonomy, openness, connectedness and diversity in boosting online learning motivation and these factors are equally influential and important.
Keywords: Autonomy, Openness, Connectedness, Diversity, Online Learning Motivation

Introduction
Background of Study
When it comes to education, especially in recent years, motivation and online learning often go hand-in-hand and are closely related. To learn, one must have the motivation to pursue the process otherwise it will be a forced feeling which leaves an unimpactful experience for the learner. Most self-taught learners have high motivation factors internally which is why they succeed in picking up a new skill or venturing into a new field of studies by their own.

Extrinsic factors on the other hand, such as autonomy, openness, connectedness, and diversity can be managed and altered to fit the requirement needed to boost motivation.

In the past two years, students and educators were left with no choice but to adapt to online learning due to the health crisis relating to COVID-19 (Chiu et al., 2021). This sudden shift of learning method has caused and raised some uncertainties among educators and students on its effectiveness and impacts among students' motivation (Meşe & Sevilen, 2021). Hence, studies related to online learning and motivation are important to unearth its relationship so that the learning interests among students can be maintained. There is a significant need for studies related to online learning to discover ways on building learning interests among students, especially in the online mode. The aftermath of Covid-19 which forced the education system to revamp its teaching and delivery methods shows us that we are still far away from having the right foundation with online learning execution. Therefore, this area needs to be studied because the future of our education is aimed to be borderless without constriction, in other words: online education. To enhance the efficacy of education in online mode, the motivational factor has to be studied in depth. This is important for learners irrespective of any age worldwide to develop high motivational factors in their online learning experience. This study therefore awakens more development in the 4 areas of autonomy, openness, connectivism and diversity between the teachers/facilitators and the learners for a beneficial online learning experience.

Motivation has been given various definitions throughout the years. According to Che Soh et al (2022), motivation can be defined as the reason that probes and drives a certain action. This concurs with the definition provided by Filgona et al (2020) where motivation is a belief that causes one to act in a particular manner. On the other hand, online learning is perceived as learning that is offered through the internet which involves the use of materials and activities that are available online (Sadiku et al., 2018). Similarly, Cojocariu et al (2014) mentioned that online learning offers the flexibility of conducting class anytime and anywhere as long as a computer is connected to a network. To simply put, online learning is flexible learning which can be done through a device connected to the internet. Due to the close relation between motivation and learning, it is important to understand motivation in learning (Che Soh et al., 2022).

Motivation is particularly imperative when it comes to learning, especially online learning as Motevalli et al (2020) mentioned that the success of a student is determined by their motivation either it is extrinsic or intrinsic. This is supported by Filgona et al (2020) where motivation in learning is known as the key factors in deciding students' understanding and absorption of knowledge. Hence, it is clear that a high level of learning motivation contributes to better understanding among students (Filgona et al., 2020).

The lack of motivation in learning especially in the online setting is going to negatively impact students. This is supported by Chen and Jang (2010) where students who are not motivated in online courses tend to have a heightened anxiety and uncertainty in learning. This will further influence the dropout rate as mentioned by Shuja et al (2022) during the peak of COVID-19 pandemic.

Therefore, this study is conducted to investigate the influence of autonomy, openness, connectedness and diversity on online learning motivation.

Statement of Problem

Online learning has become increasingly popular, especially in the wake of the COVID-19 pandemic. However, many students struggle to engage with online coursework, and motivation is a key factor in determining their success. Students are most motivated to learn online when they are intrinsically motivated, which means they engage in learning activities because they find them interesting, enjoyable, or personally meaningful (Ryan & Deci, 2020). From past studies, several factors have been found to influence students' motivation in online learning environments. One such factor is the design of learning activities that promote a sense of autonomy and relatedness, which are the basic psychological needs that underlie intrinsic motivation (Ryan & Deci, 2020). However, the lack of face-to-face interactions in online learning can make it difficult for students to receive the necessary support from their instructors. Social interaction and support play a crucial role in impacting student motivation in online learning. A study conducted by (Abdous, 2019) has demonstrated that peer and instructor support, as well as social interaction and communication among students, are positively related to motivation and academic performance. Similarly, Gómez-Garca and Garca-Pealvo (2019) discovered that instructor support was a significant factor influencing motivation and retention in online learning. In traditional classroom-based learning, students have regular face-to-face interactions with their instructors, but in online learning, students may have limited access to their instructors, making it difficult for them to receive the necessary support. Therefore, it is essential to design online learning environments that facilitate social interaction and support among students and instructors. The design of the online learning platform should be user-friendly and include interactive features to increase student engagement with the course material (Mese & Sevilen, 2021).

Motivation is a critical factor in online learning success, with research showing that students who lack motivation perform poorly or drop out of courses (Shuja et al., 2022; Capdeferro & Romero, 2018). Students who lack motivation in online learning are less likely to engage with course materials and participate in discussions, resulting in lower levels of achievement (Kuo et al., 2014). As a result, when designing and implementing online learning programmes, it is critical to consider motivation (Mese & Sevilen, 2021). While there have been studies that look at the relationship between connectivism and motivation in online learning, the majority of them have focused on learners' perceptions and experiences rather than the actual impact of connectivist learning environments on motivation.

As a result, the purpose of this study is to investigate the effects of autonomy, openness, connectedness, and diversity on online learning motivation. The study intends to identify ways in which online learning programmes can be designed to foster motivation and engagement among learners by examining these factors.

Objective of the Study & Research Questions

This study explores online motivation among learners. It is done to investigate the influence of autonomy, openness, connectedness and diversity on online learning motivation. Specifically, this study is done to answer the following questions;

- How does autonomy influence online learning motivation?
- How does openness influence online learning motivation?
- How does connectedness and diversity influence online learning motivation?
- What is the relationship between autonomy and openness?
- What is the relationship between autonomy and connectedness as well as diversity?

● What is the relationship between openness and connectedness as well as diversity?

Literature Review
Demotivators for Online Learning
While online learning has numerous advantages, it also presents several challenges that may impact students' motivation negatively. There are several demotivators that may impact students' motivation negatively in online learning. Several studies found that lack of social interaction is one of the most significant demotivators in online learning (Meter et al., 2020; Bali and Liu, 2018; Azmat et al., 2022). In 2020, Nabila et al (2022) investigated the level of demotivation and demotivating factors found that teacher-related factors were the most influential demotivating factors in online learning. Similarly, Xie (2020) indicates that teacher-related factors such as competence, teaching preparation and teacher's attitude were the demotivators in online learning. Other demotivators affecting students' motivation in online learning are technical difficulties and low self-efficacy (EL-Said and Fayed, 2019; Baturay & Baykan, 2020).

Motivations for Online Learning
With the rapid growth of online learning, understanding students' motivation is critical to improving their learning experience. Motivation is essential for learners' success, and it is influenced by several factors. For example, a study by Joo et al (2018) aimed to identify the factors that influence students' motivation in online courses revealed that the most significant motivators were intrinsic motivation, perceived usefulness, and perceived ease of use. In addition, Hsu et al (2019) investigated the role of social presence and self-efficacy in predicting students' motivation in online courses and showed that both social presence and self-efficacy significantly predicted students' motivation. In 2020, a study by Kahu et al (2020) aimed to investigate the impact of online learning environments on students' motivation and the findings revealed that online learning environments that provide flexibility, interactivity, and engagement positively influence students' motivation. Another study by Zhang et al (2021) investigated the role of learning design in promoting students' motivation in online courses and the findings showed that learning design factors such as clear goals, interactive activities, and feedback significantly predicted students' motivation. Finally, according to Huang et al (2021) instructor support factors such as responsiveness, empathy, and instructional guidance significantly predicted students' motivation in online courses. Thus, several factors influence students' motivation in online learning, including intrinsic motivation, perceived usefulness, perceived ease of use, social presence, self-efficacy, online learning environments, learning design, and instructor support. It is essential to understand these factors to develop effective strategies to promote students' motivation in online learning.

Past Studies on Online learning motivation
In recent years, there has been an increasing amount of literature to investigate online learning motivation. A recent study by Chowkase et al (2022) involved 221 Indian students' participation in 14 online and 10 in-person courses. The analysis revealed that online learning was highly rated to be supportive of learning motivation. It was noted that the participants showed great excitement and positive attitude as they found online courses more appealing, enjoyable and motivating. Besides, the participants were perceived to be more open to the new implementation of the online course. It also highlights the importance of the inclusion of

"enough complexity but fun" curriculum for an online course as it highly stimulates their learning. Moreover, the role of non-intellectual factors has been the central focus of a study by (Zhu et al., 2022). In order to understand academic emotions, learning motivation and learning performance, the mediating effects were explored in the study. It was revealed that online learning motivation has a positive influence on online learning performance and positive academic emotions and positive academic emotions are associated with online learning performance. However, surprisingly, the intermediary effect of positive academic emotions in online learning is significantly lower than that of offline learning.

Furthermore, in a study which set out to determine the association between virtual instructional practices, students' engagement and their belonging in online learning, Thacker et al (2022) have employed both qualitative and quantitative data from a group of undergraduate students. It was found that non-interactive synchronous online lectures negatively predicted students' sense of social belonging and interest in the subject. Conversely, interactive synchronous online lectures and the implementation of online breakout groups positively predicted students' sense of social belonging. It was disclosed that the interactions with other students and faculty members are highly valued especially for the great academic and personal support received.

Conceptual Framework
This study is rooted from Downes's (2022) theory of connectivism. He identified factors such as autonomy, connectedness, diversity and openness. In the context of this study, the factors for connectivism is scaffolded to merge with Fowler's (2018) online motivation such as expectancy, value and social support to reveal the conceptual framework in figure 1. To begin with, learners need (a) autonomy to be motivated to learn online and this is can be achieved through positive (i) self-efficacy and (ii) control of learning beliefs. Next, to be motivated, learners need to have (b) openness and this is achieved when they can assign value to their learning. This is obtained from (i) intrinsic goal orientation, (ii) extrinsic goal orientation and (iii) task value. Finally, learners are motivated when there is (c) connectedness and diversity in the learning process. This can be achieved through social support such as (i) social engagement and (ii) instructor support. According to Rahmat (2022) instructors must not undervalue the benefits of connectedness and diversity in online learning. Learning is not a passive process. It is an active process in which learners engage in activities and interactions.
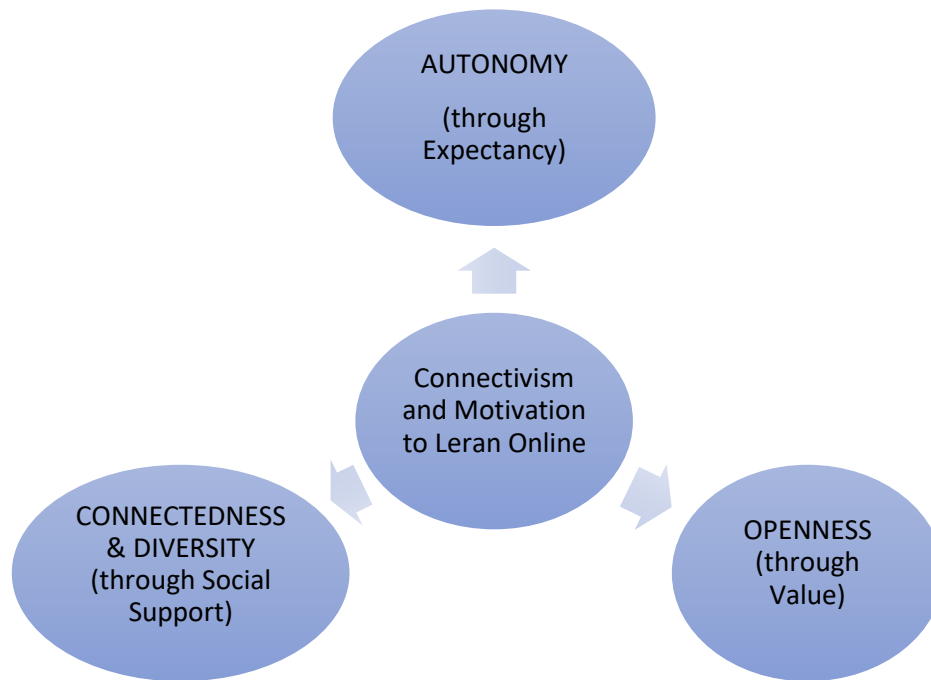
Figure 1- Conceptual Framework of the Study
Connectivism and Motivation to Learn Online

Methodology

This quantitative study is done to explore writing strategies used by undergraduates. A purposive sample of 117 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is replicated from Bandura (1978) and Fowler (2018). It has 6 sections. Section A has items on demographic profile. Section B has 14 items on Autonomy Section C has 14 items on Openness and section D has 12 items on Connectedness and Diversity.

Table 1
Distribution of Items in the Survey

SECT	CONNECTIVISM (Downes,2010)	MOTIVATION (Fowler,2018)	SUB-SCALES	NO OF ITEMS	TOTAL
B	AUTONOMY	EXPECTANCY	Self-Efficacy	8	12
			Control of Learning Beliefs	4	
C	OPENNESS	VALUE	Intrinsic Goal Orientation	4	14
			Extrinsic Goal Orientation	4	
			Task Value	6	
D	CONNECTEDNESS & DIVERSITY	SOCIAL SUPPORT	Social Engagement	5	12
			Instructor Support	7	
				38	

Table 2
Reliability of Survey

Reliability Statistics

Cronbach's Alpha	N of Items
.943	38

Table 2 shows the reliability of the survey. The analysis shows a Cronbach alpha of .943 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.

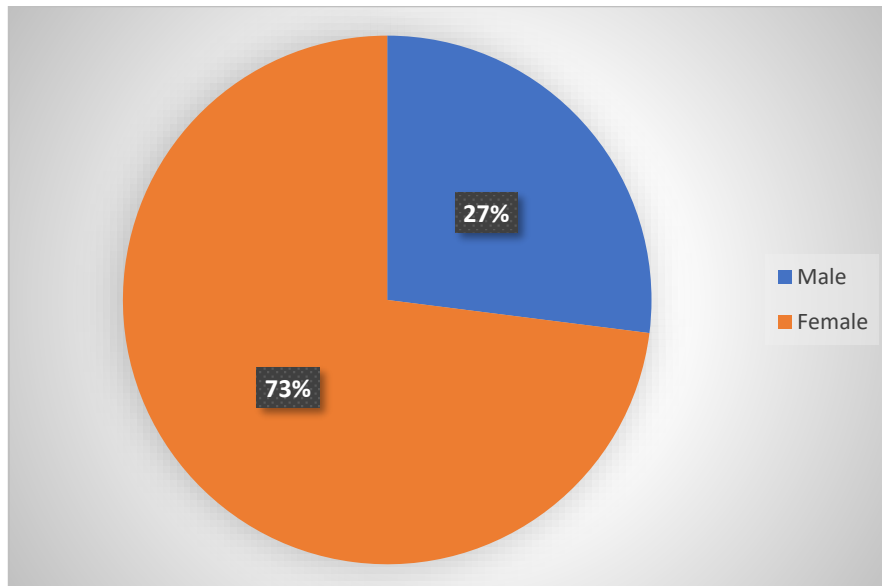Findings
Findings for Demographic Profile
Q1.Gender

Figure 2- Percentage for Gender

Figure 2 shows the percentage for gender. 27% of the respondents are male while 73% are female.
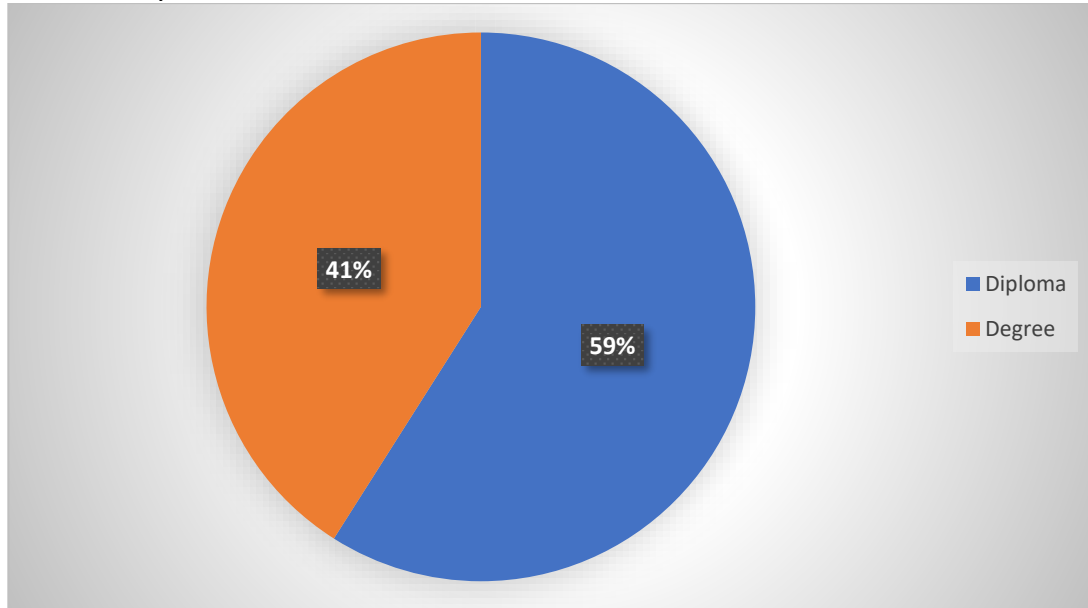
Q2 level of Study

Figure 3- percentage for Level of study

Figure 3 shows the percentage for level of study. 59% of the respondents are pursuing their diploma while 41% are doing their degree.
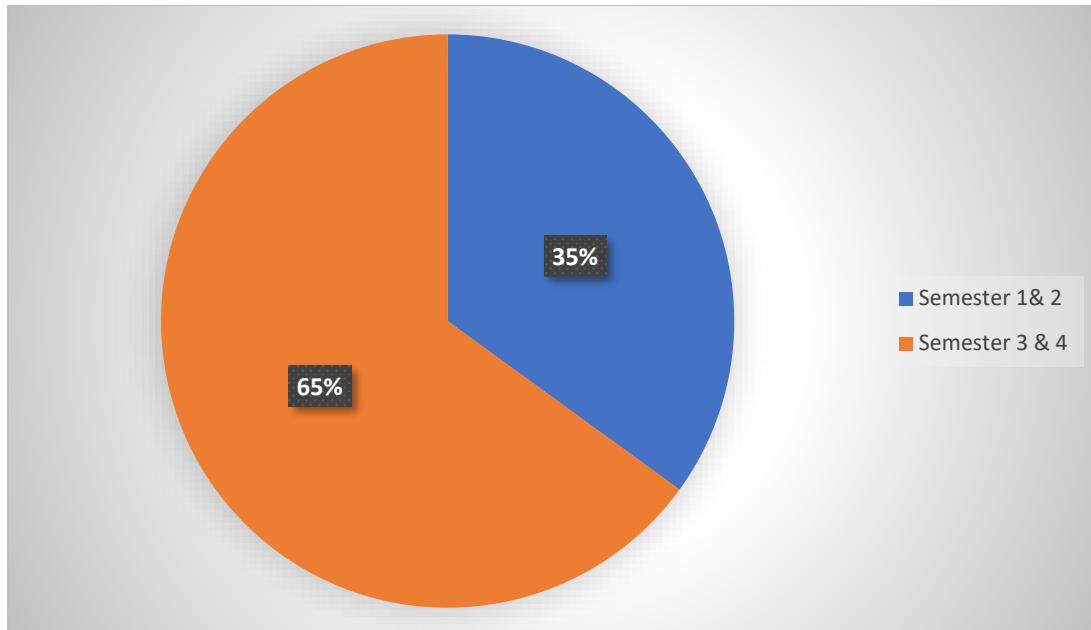
Q3.Semester

Figure 4- percentage for semester

Figure 4 shows the percentage for semester. 35% of the respondents are in semester 1& 2. Next, 65% of the respondents are in semester 3 & 4.
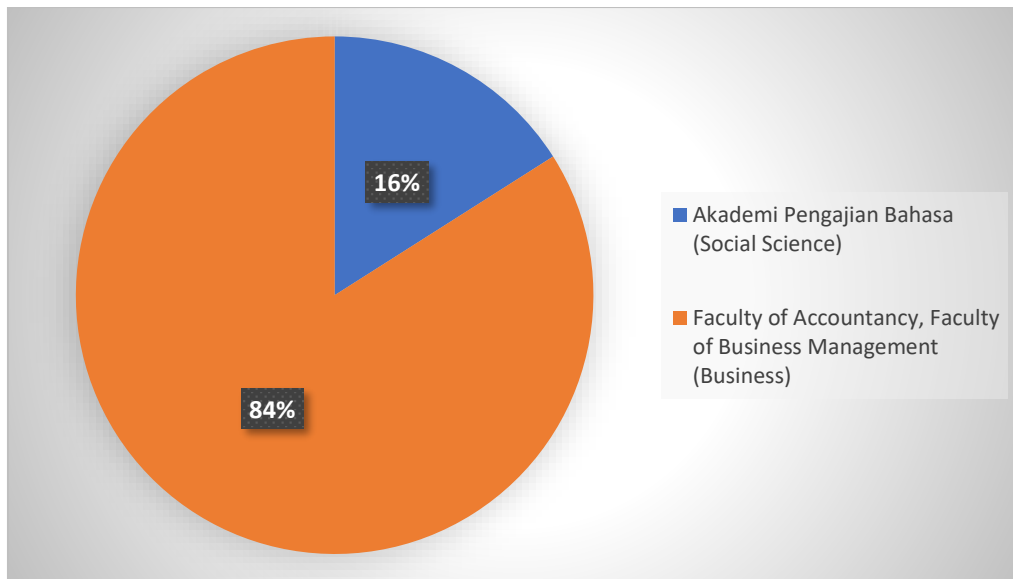Q4.Faculty

Figure 5- percentage for faculty

Figure 5 shows the percentage for faculty. 16% are from Akademi Pengajian Bahasa (Social Science) and 84% are from the faculty of accountancy, faculty of business (Business)

Findings for Autonomy

This section presents data to answer research question 1: How does autonomy influence online learning motivation? In the context of this study, autonomy is measured by expectancy through (i) self-efficacy and (ii) control of learning beliefs.
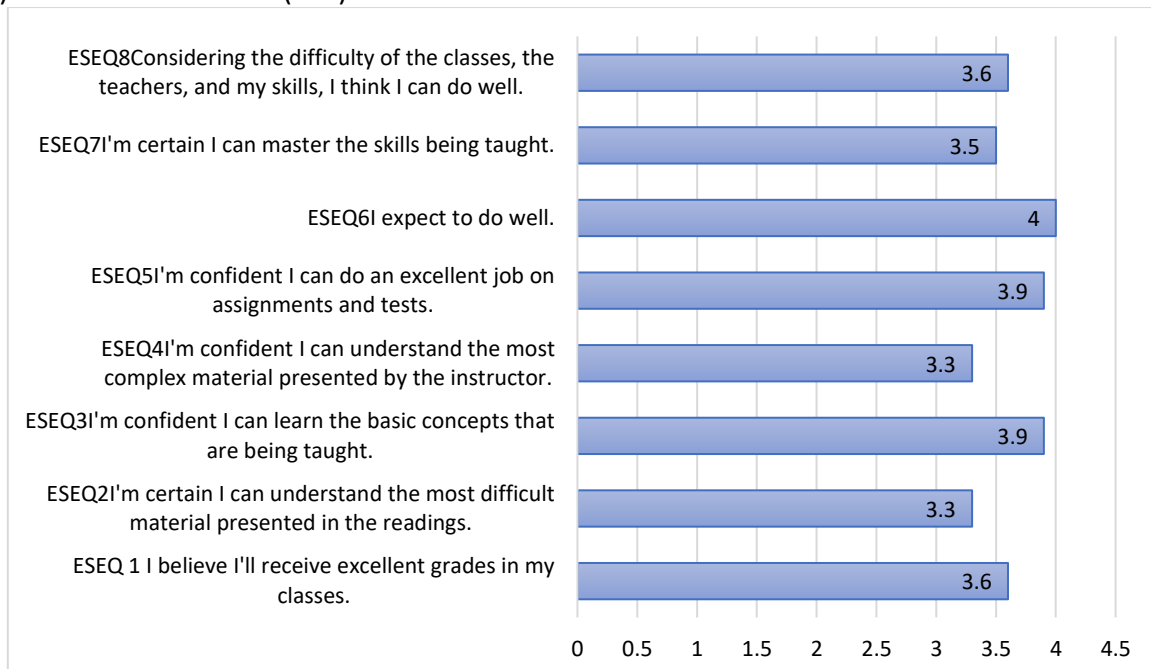
(i)   SELF- EFFICACY (ESE)

Figure 6- Mean for Self-Efficacy

Figure 6 shows the mean for self-efficacy. The highest mean is 4 for the item "expect to do well". This is followed by two items with a mean of 3.9 and they are "confident I can learn the basic concepts that are being taught" and "confident I can do an excellent job on assignments

and tests". Next, two items share the same mean of 3.6 and they are "believe I'll receive excellent grades in my classes" and "Considering the difficulty of the classes, the teachers, and my skills, I think I can do well".

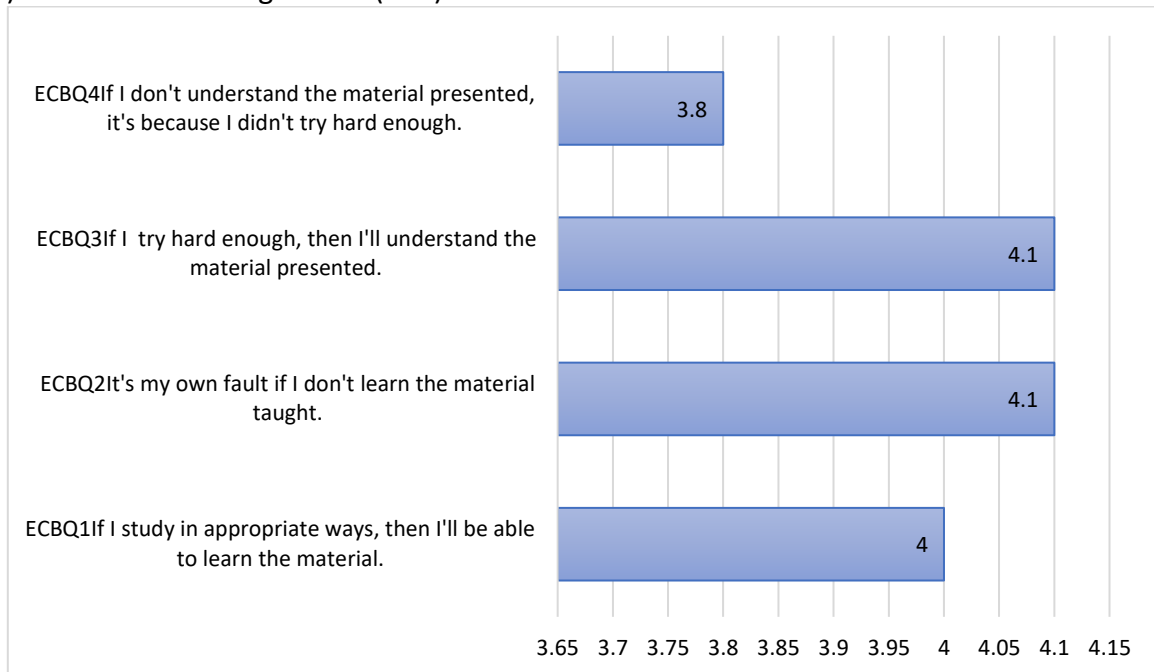(ii) Control of Learning Beliefs (ECB)

Figure 7- Mean for Control of Learning Beliefs

Figure 7 presents the mean for control of learning beliefs. Two items share the highest mean of 4.1 and they are "my own fault if I don't learn the material taught" and "try hard enough, then I'll understand the material presented".

Findings for Openness
This section presents data to answer research question 2: How does openness influence online learning motivation? In the context of this study, openness is measured by value through (i) intrinsic goal orientation, (ii) extrinsic goal orientation and (iii) task value.
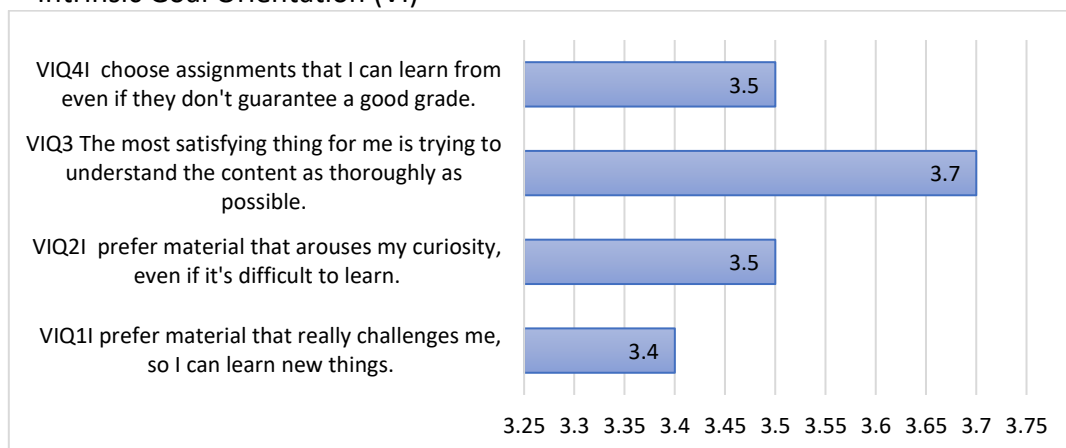
(i)   Intrinsic Goal Orientation (VI)

Figure 8- Mean for Intrinsci Goal Oreintation

Figure 8 presents the mean for intrinsic goal orientation. The highest mean is 3.7 for the item "The most satisfying thing for me is trying to understand the content as thoroughly as possible". This is followed by the mean of 3.5 for two items and they are "prefer material that arouses my curiosity, even if it's difficult to learn" and "choose assignments that I can learn from even if they don't guarantee a good grade."

(ii)   Extrinsic Goal Orientation(VE)
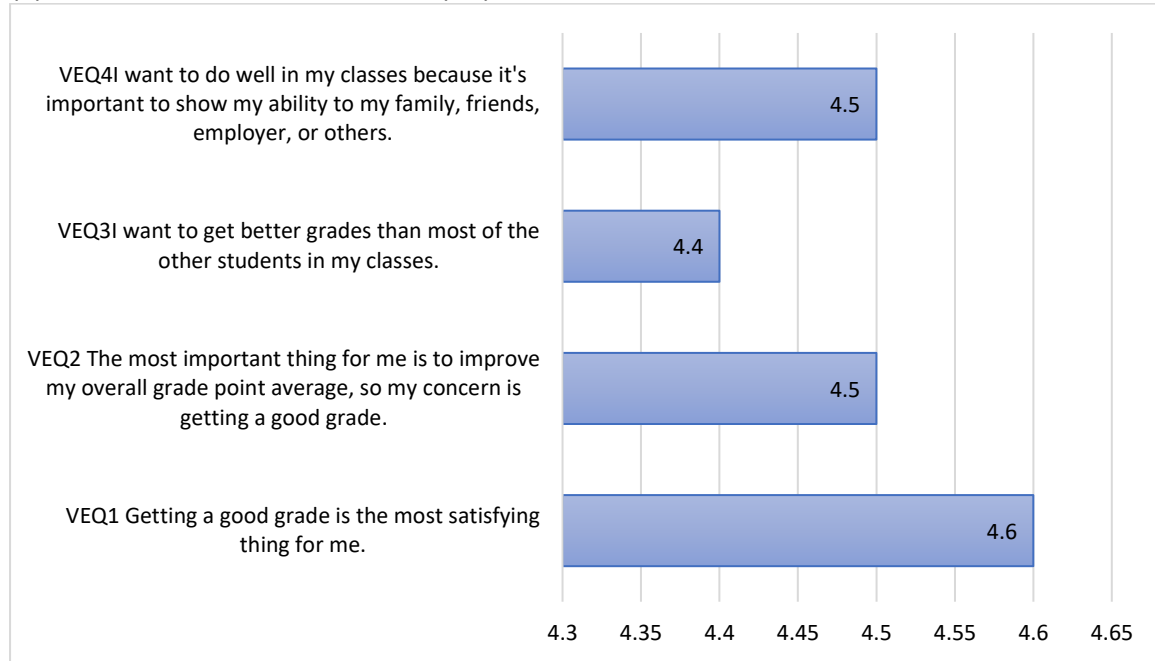
Figure 9- Mean for Extrinsic Orientation

Figure 9 presents the mean for extrinsic orientation. The highest mean is 4.6 for the item "Getting a good grade is the most satisfying thing for me". Next, two items share the same mean of 4.5 and they are "most important thing for me is to improve my overall grade point average, so my concern is getting a good grade.", and "want to do well in my classes because it's important to show my ability to my family, friends, employer, or others".

(iii)   Task Value (VT)
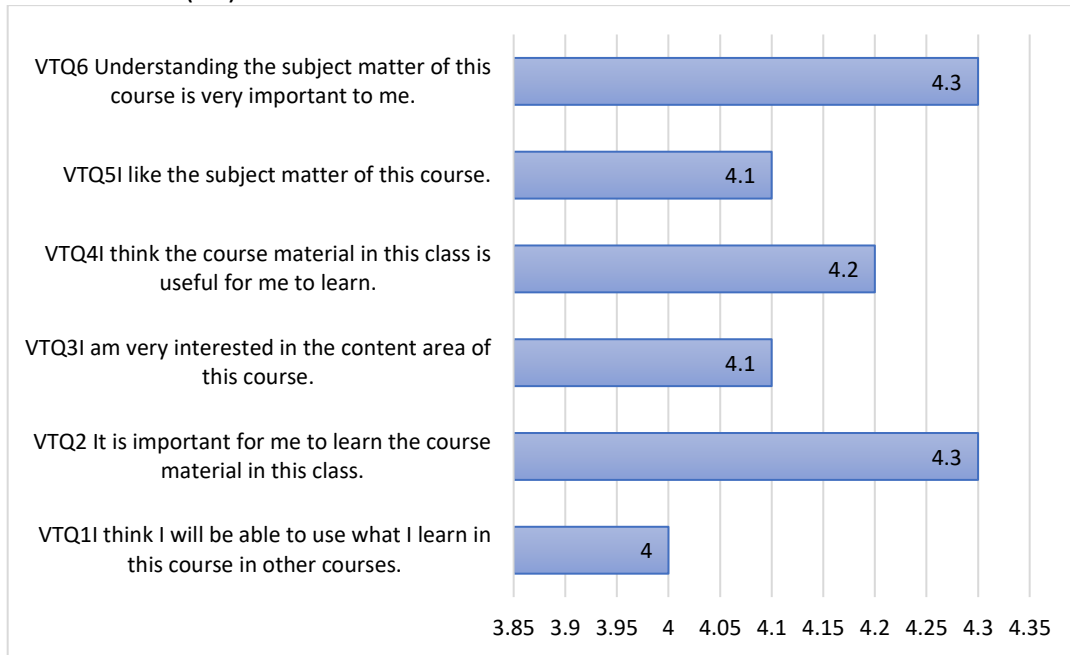
Figure 10- Mean for Task Value

Figure 10 shows the mean for task value. Two items share the highest mean of 4.3 and they are "It is important for me to learn the course material in this class", and "Understanding the subject matter of this course is very important to me". This is followed by the mean of 4.2 for "the course material in this class is useful for me to learn".

Findings for Connected and Diversity

This section presents data to answer research question 3: How does connectedness and diversity influence online learning motivation? In the context of this study, connectedness & diversity is measured by social support through (i) social engagement and (ii) instructor support.

(i)   Social Engagemnt (SSE)

Figure 11- Mean for Social Engagement

Figure 11 shows the mean for social engagement. The highest mean is 4.1 for the item "enjoy class discussions". This is followed by the mean of 3.9 for the ite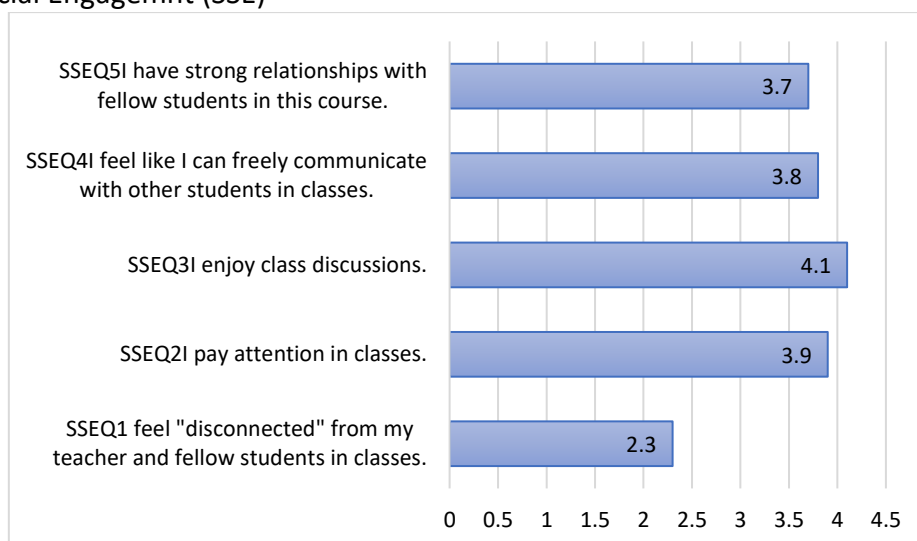m "pay attention in classes". The lowest mean is 2.3 for "feel "disconnected" from my teacher and fellow students in classes".

(ii)   Instructor Support (SIS)
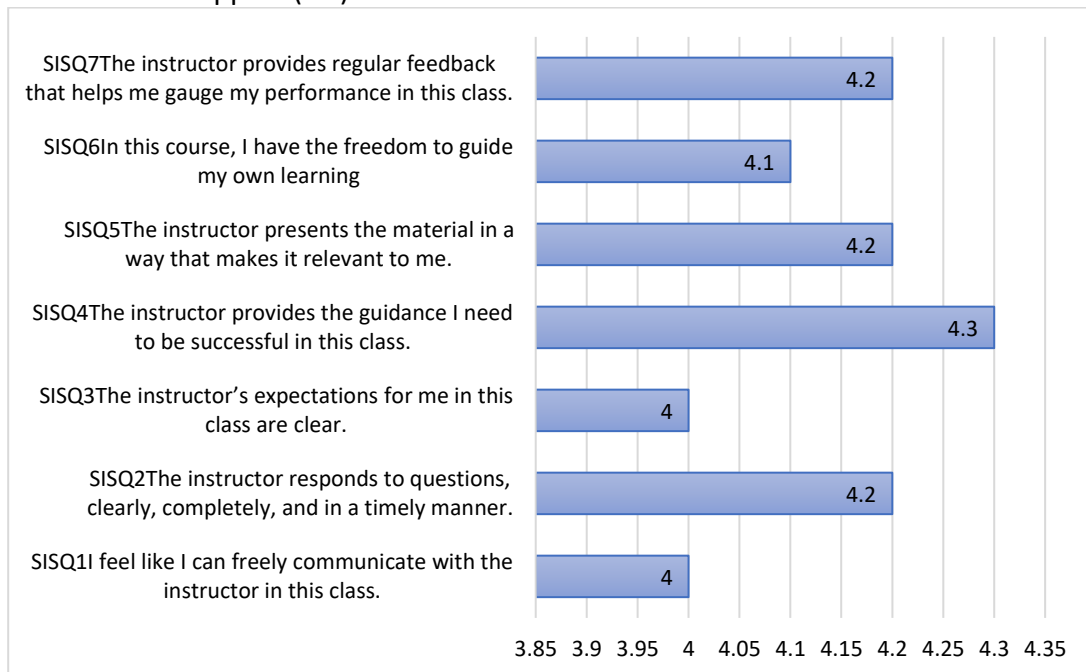
Figure 12- Mean for Instructor Support

Figure 12 shows the mean for instructor support. The highest mean is 4.3 for "instructor provides the guidance I need to be successful in this class". Next, three items share the same mean of 4.2 and they are " instructor responds to questions, clearly, completely, and in a timely manner.", "instructor presents the material in a way that makes it relevant to me", and "instructor provides regular feedback that helps me gauge my performance in this class.".

Findings for Relationship between autonomy and openness
This section presents data to answer research question 4: What is the relationship between autonomy and openness?

To determine if there is a significant association in the mean scores between autonomy and openness, data is anlaysed using SPSS for correlations. Results are presented in table 3 below.

Table 3
Correlation between autonomy and openness

Correlations

		TOTALAUTONOMY	TOTALOPENNESS
TOTALAUTONOMY	Pearson Correlation	1	.713**
	Sig. (2–tailed)		.000
	N	117	117
TOTALOPENNESS	Pearson Correlation	.713**	1
	Sig. (2–tailed)	.000	
	N	117	117

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

Table 3 shows there is an association between autonomy and openness. Correlation analysis shows that there is a high significant association between autonomy and openness. (r=.713**) 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 strong positive relationship between autonomy and openness.

Findings for Relationship between autonomy and connectedness
This section presents data to answer research question 5: What is the relationship between autonomy and connectedness as well as diversity?
To determine if there is a significant association in the mean scores between autonomy and connectedness, data is anlaysed using SPSS for correlations. Results are presented in table 4 below.

Table 4
Correlation between autonomy and connectedness

Correlations

		TOTALAUTONOMY	TOTALCONNECTEDNESSDIVERSITY
TOTALAUTONOMY	Pearson Correlation	1	.562**
	Sig. (2–tailed)		.000
	N	117	117
TOTALCONNECTEDNESS DIVERSITY	Pearson Correlation	.562**	1
	Sig. (2–tailed)	.000	
	N	117	117

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

Table 5 shows there is an association between autonomy and connectedness. Correlation analysis shows that there is a high significant association between autonomy and

connectedness.(r=.562**) 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 strong positive relationship between autonomy and connectedness.

Findings for openness and connectedness, diversity
This section presents data to answer research question 6: What is the relationship between openness and connectedness as well as diversity?

To determine if there is a significant association in the mean scores between openness and connectedness ,data is anlaysed using SPSS for correlations. Results are presented s in table 5 below.

Table 5
Correlation between openness and connectedness

Correlations

		TOTALOPENNESS	TOTALCONNECTEDNESSDIVERSITY
TOTALOPENNESS	Pearson Correlation	1	.677**
	Sig. (2–tailed)		.000
	N	117	117
TOTALCONNECTEDNESS DIVERSITY	Pearson Correlation	.677**	1
	Sig. (2–tailed)	.000	
	N	117	117

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

Table 5 shows there is an association between openness and connectedness. Correlation analysis shows that there is a high significant association between openness and connectedness (r=.677**) 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 strong positive relationship between openness and connectedness.

Conclusion
Summary of Findings and Discussions
Based on the findings, a clear connection can be seen between the factors on online learning motivation. The first value 'autonomy' in motivation was measured through self-efficacy and control of learning beliefs. It revealed that the learners possess high self-confidence to learn and perform well in assessments. They also claimed that it is their responsibility and accountability to understand the subject's content. As past literature discovered that technical difficulties and low self-eficacy are among the demovators for online learning (Baturay & Baykan, 2020), instructors should always provide positive feedback and embed encouragement to all learners throughout their engagement as facilitators and motivators. This is to maintain learners' healthy standards of self-efficacy in online learning motivation.

Next, openness in online learning was measured through intrinsic and extrinsic goal orientations and task values. For goal orientations, the interest to learn something new is evidently high and importance is given to do better for good grades. The findings also revealed that learners prefered materials that aroused their curiosity although it was difficult to learn. This goes to depict that high goal orientations are required for a student to pursue learning a curriculum online as opposed to learning it physically as the parameters are different. If a learner has high efficacy values, then chances are that the learner is self-motivated and is able to adapt to the challenges of online learning. As for task values, importance is given in understanding and learning the subject matter well. In addition, connectedness and diversity was measured through social engagement and instrument support. This area demonstrates that students enjoy the discussions and are satisfied with the guidance provided by the instructor to help them perform outstandingly. This finding supports the past study literature that teacher-related factors play an important role in raising students motivation to perform excellently in their online learning (Xie, 2020). In summary, the discussion that these findings bring shows that there is a strong positive relationship among factors of autonomy, openness, connectedness and diversity to boost motivation in online learning. Each of these factors are interrelated and play an important part of equipping the learners towards gaining higher motivation for online learning.

Implications and Suggestions for Future Research

Widespread research should be done in the field of online learning given that it is a growing common phenomenon in the education landscape today. More research should be done to investigate the many intricate factors in comparative studies that influence motivation to learn online. There are many unexplored areas in online learning that is regional and national, with diversified issues of target age of learners (young learners versus old learners), environment (online studies at home versus online studies at school/office), pedagogical background (teachers competency online theoretically and practically), subjects weightage in terms of learning online (core subjects versus elective subjects), and many more. Studying the links between these factors may help increase the efficacy of online learning to be promoted in areas that are still underdeveloped. Given that we live in a borderless world in terms of education and technology, the future lies in moving the traditional setting of physical classes to online delivery whereby its efficacy has to tested and proven solid and reliable in raising independent generations of learners. This can only be achieved if serious indepth researches are conducted widely for a sound understanding of online motivation among learners today.

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