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A Study of Social Constructivism in Online Learning

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Abstract

Online learning is no longer a foreign term in today's education landscape. Online learning is deemed to be a positive manner of learning where students can be independent due to its accessibility, affordability and flexibility. Many universities including in Malaysia have adopted online learning especially since the COVID-19 pandemic. This quantitative study aims to investigate the perception of learners on online learning using the theory of social constructivism. The instrument used is a replicated survey from Martin & Bollinger (2018) that was adapted to fit Vygotsky's (1978) social constructivism. There was a total of six sections and 21 items in the instruments. This survey collected responses on demographic profile, experience, communication, understanding and its relationship from 104 respondents. The data was analysed using SPSS. The findings revealed that there is a positive relationship between experience and communication, experience and understanding, as well as communication and understanding. This study is important in shedding lights to understand and improve online distance learning.

Keywords: Online Learning, Online Distance Learning, Social Constructivism, Learners' Perception, COVID-19

Introduction

Background of Study

The term online learning is not foreign in our education landscape today. Online learning refers to a learning environment that uses the internet and other technological devices and tools for synchronous and asynchronous instructional delivery and management of academic programs (Usher & Barak, 2020; Huang, 2019). Similarly, Singh and Thurman

(2019) define online learning as “learning experiences in synchronous or asynchronous environments using different devices (e.g., mobile phones, laptops, etc.) with internet access.” They further positively note on the accessibility, affordability and the flexibility of online learning whereby students can be independent in any environment to learn and interact with instructors and other students.

Ever since the COVID-19 pandemic, online learning has gained wider attention and acceptance across the globe challenging rigid traditional pedagogical methods. Governments have recognized the increased importance of online learning as a panacea in times of crisis and Malaysia is of no exception as well. Many universities in Malaysia have adopted online learning and are now focused on “providing quality enhancement” via this mode of education (Dhawan, 2020).

Statement of Problem

The internet serves as a flexible medium for delivering information to individuals worldwide. According to Motteram and Forrester (2005), in order for users to benefit from online educational activities, they must have some level of technological knowledge and familiarity with computer and internet technology. Online learning environments improve content accessibility and offer students the choice to learn at their own speed, in their own location, and at their own time (Chizmar & Walber, 1999; Smith et al., 2005). Using online learning platforms, students have a variety of options for gaining access to information and communicating with classmates and teachers. This flexibility and control enable them to be self-motivated and self-regulated learners (Limniou & Smith, 2010). Thus, online learning platforms provide students better learning opportunities and help them develop into independent and self-directed learners.

Despite the benefits that online learning provides when it is used in education, there are some drawbacks as well. The COVID-19 epidemic has caused to investigate how students view the online learning system. Despite persistent issues with network connections, students find that learning with online tools is interactive. The majority of students claimed that using internet resources was simple and helped them develop their productivity. According to a study by Ana et al (2020) on students' perceptions of preparing themselves before participating in learning activities, 24% of students stated that it is simple to get ready for online learning activities, 26% of students mentioned the learning material was sufficient, 21% stated the teaching materials for online classes were provided, and 20% of students discussed the lesson plan. Hence, students would have problems attending classes if any one of the criteria is lacking.

Objective of the Study & Research Questions

This study investigates the perception of learners on online learning using the theory of social constructivism. It explores how experience, communication and understanding influence online learning. Specifically, this study is done to answer the following question:

- How does experience influence online learning?
- How does communication influence online learning?
- How does understand influence online learning??
- Is there a relationship between experience and communication in online learning?
- Is there a relationship between experience and understanding in online learning?

- Is there a relationship between communication and understanding in online learning?

Literature Review

Drawbacks of Online Learning

The dependency on online education has become more prominent since the spread of COVID-19 across the globe which brings serious impact on students, instructors and educational institutions. The transition from traditional face-to-face learning to distance and virtual learning has been a challenge for many in accommodating the needs and achieving the learning goals. According to Basilia and Kvavadze (2020), online learning can be effective in digitally advanced countries and challenging for poor ones. Lack of access to fast, affordable and reliable internet connection can impede online learning especially those who live in rural areas (Wains & Mahmood, 2008). Poor functioning technology can further influence the effectiveness of online learning including losing content knowledge, organizational responsiveness and students' participation as well as engagement. Thus, real-time ideas, knowledge and information would be impacted and considered as partially missing from digital learning (Britt, 2006). Furthermore, the issue of cheating, overreliance on the summative feedback and limited formative feedback during the learning process have been highlighted as the drawbacks of online learning as well. Without proper planning and moderating strategies, students are not able to engage and participate actively in the classroom and might feel more isolation from their instructors which can lead to the potential issues in concerns to dishonest practice in education.

Characteristics of Good Online Learning

It is pertinent to explore the advantages of online education in the context of higher education as well as its characteristics which can accommodate the needs, gaps and achieve learning goals in these recent years. Online learning has several characteristics that can impact on student experience, faculty implementation and course progress. According to Restauri et al (2001), proper functioning technology and user-friendly design can improve learning and engagement among students and instructors. It would be challenging for instructors to adapt certain activities such as performance assessment to the online format with failing technological aspects of online courses (Shuey, 2002). Next, different background characteristics of online education students should be considered such as gender, age, academic discipline and prior education. This is important to meet the unique needs and situations of these students, eliminate existing gaps and lastly, improve their educational experiences. Xu and Jaggars (2013) highlight that certain types of students including younger and black students may be facing some difficulties in their ability to adapt to online courses. Besides that, there is rising evidence of adapting online education to mobile devices and incorporating social media into the classroom. The rapid rate of changes in technology has an increasing impact on education with its advancement in terms of platforms and applications used which put the pressure for instructors to adapt with the changes. Most studies indeed find positive effects from the use of mobile learning for online courses (Wu et al., 2012). Furthermore, some research discovers that technology access, online skills, and preparedness for online discussion are important for effective online learning. However, it is crucial to highlight that good planning and moderating skills are also important for instructors to accommodate and improve online learning experience for students.

Past Studies on Benefits of Online Learning

Online learning has become an increasingly popular method that facilitates learning activities since COVID-19 pandemic. Many research (Salloum & Shaalan, 2019; Lockman & Schirmer, 2020) have been carried out to prove that online learning can be advantageous to the educational process. The main benefit of online learning is it offers flexibility. A qualitative study by Hiranrithikorn (2019) showed that online learning permits students to learn and work at their convenience in terms of place and time, compatible with their learning needs. Learners can learn and access information from anywhere they prefer and at any time at their own pace. This qualitative study was conducted on 30 staff and faculty members of various universities who have experience with online learning. The in-depth interview method used in this study revealed that the flexibility in online learning contributes to reduction of expenditure and time as students can learn by staying at home and this saves time of commuting and travelling to seek knowledge. This is supported by Axmedova and Kenjayeva (2021) who pointed out that online education is more affordable than physical learning as it reduces studying cost and students can attend classes from any location of their choice.

In addition, documentation of learning materials provided in online learning are well documented. A study by Firmansyah et al (2021) examined the advantages and disadvantages of online learning experienced by the students during the COVID-19 pandemic. This study was conducted through interviews set online on university students of Universitas Negeri Malang in Indonesia. The findings showed that apart from flexibility of time, online learning also benefits the students in terms of learning materials. Materials filing or documentation of materials became more organised during online classes. Lecturers made their teaching materials to be well documented and accessible to all the students. Therefore, students will not miss the materials because they can easily be accessed outside of the lecture hours. Students can play the recorded videos provided by their lecturers multiple times at their convenience. Consequently, this study revealed that the implementation of online learning has a positive impact on student learning independence.

Conceptual Framework

This study is rooted from Vygotsky's (1978) theory of social constructivism. The theory states that people learn through experience, communication, and understanding of the reality presented to them. Figure 1 shows the conceptual framework of the study. In the context of this study, learners gain (a) experience through activities that involved learner-to-content (Martin & Bollinger, 2018). Next, learning is enhanced when learners are given the opportunities to communicate. This is realised through Martin & Bolliger's (2018) learner-to-learner. In addition to that, learning and knowledge can be found in a diversity of experiences among learning through engaging activities (Rahmat et al., 2022). Finally, learners get clarification and (c) understanding with instructions and explanation through learner-to-instructor (Martin & Bollinger, 2018).

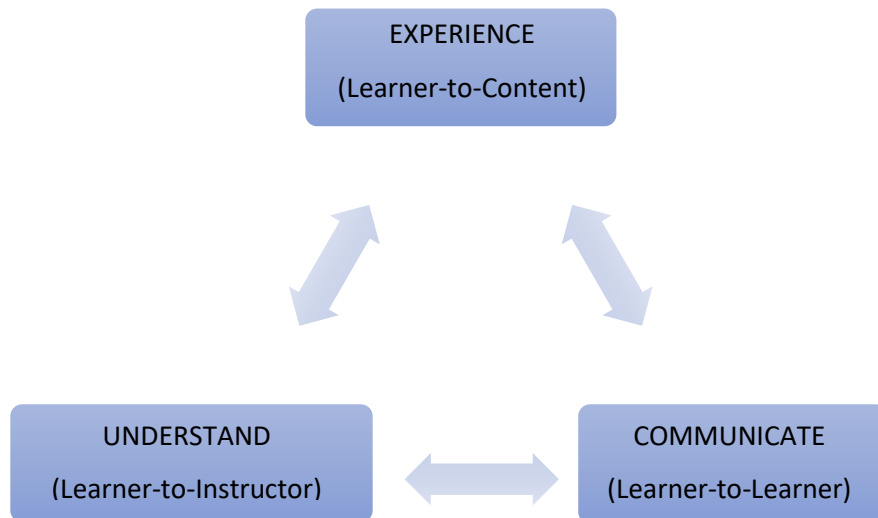


Figure 1 - Conceptual Framework of the Study
 A Study of Social Constructivism in Online Learning

Methodology

This quantitative study is done to explore writing strategies used by undergraduates. A purposive sample of 104 participants responded to the survey. The instrument used is a survey and is replicated from (Martin & Bollinger, 2018). Nevertheless, in the context of this study, the types of interaction are scaffolded from Vygotsky’s (1978) social constructivism. It has 6 sections. Section A has items on demographic profile. Section B has 8 items on Experience. Section C has 6 items on communication and section D has 8 items on understanding.

Table 1
Distribution of Items in the Survey

SECTION	SOCIAL CONSTRUCTIVISM (Vygotsky, 1978)	TYPE OF INTERACTION (Martin & Bollinger ,2018)	Items
B	EXPERIENCE	Learner-to-Content	8
C	COMMUNICATION	Learner-to-learner	6
D	UNDERSTANDING	Learner-to-Instructor	7
		Total no. of Item	21

Table 2
Reliability of Survey

Reliability Statistics	
Cronbach's Alpha	N of Items
.934	21

Table 2 shows the reliability of the survey. The analysis shows a Cronbach alpha of .934, 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

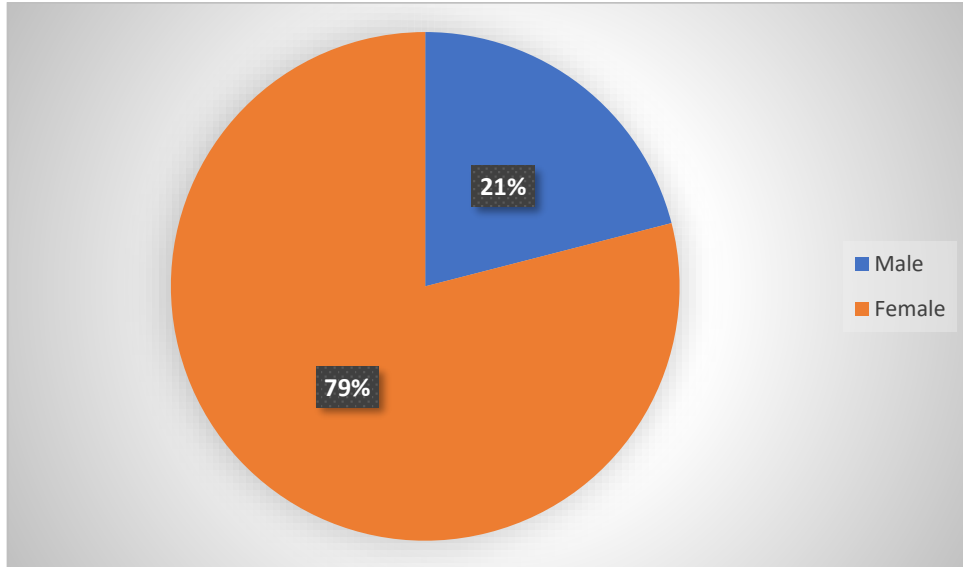


Figure 2 - Percentage of gender

Figure 2 shows the percentage for gender. 21% of the respondents are male while 79% are female students.

Q2. Level of Study

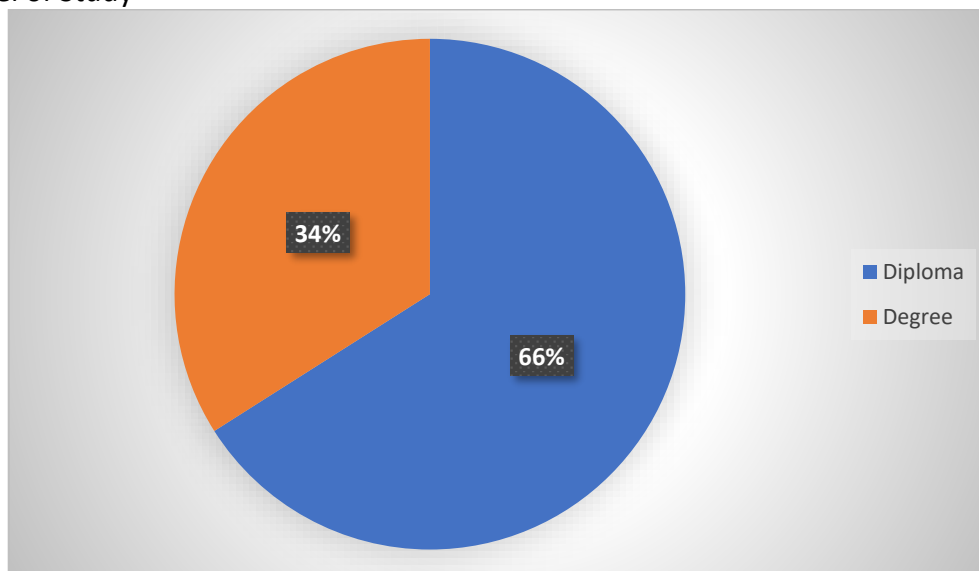


Figure 3 - Level of study

Figure 3 shows the percentage for level of study. 66% of the participants are doing their diploma while 34% are doing their degree.

Q3. Semester

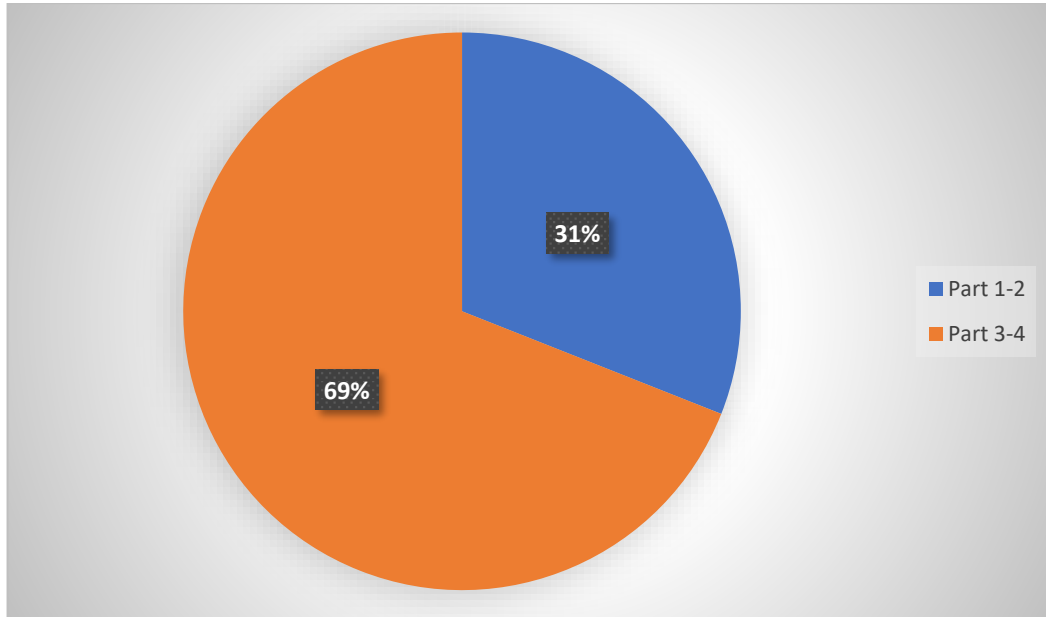


Figure 4 - percentage of semester

Figure 4 shows the percentage for semester. 31% of the respondents are in part 1-2. In addition to that, 69% of the respondents are in part 3-4.

Q4. Age Group

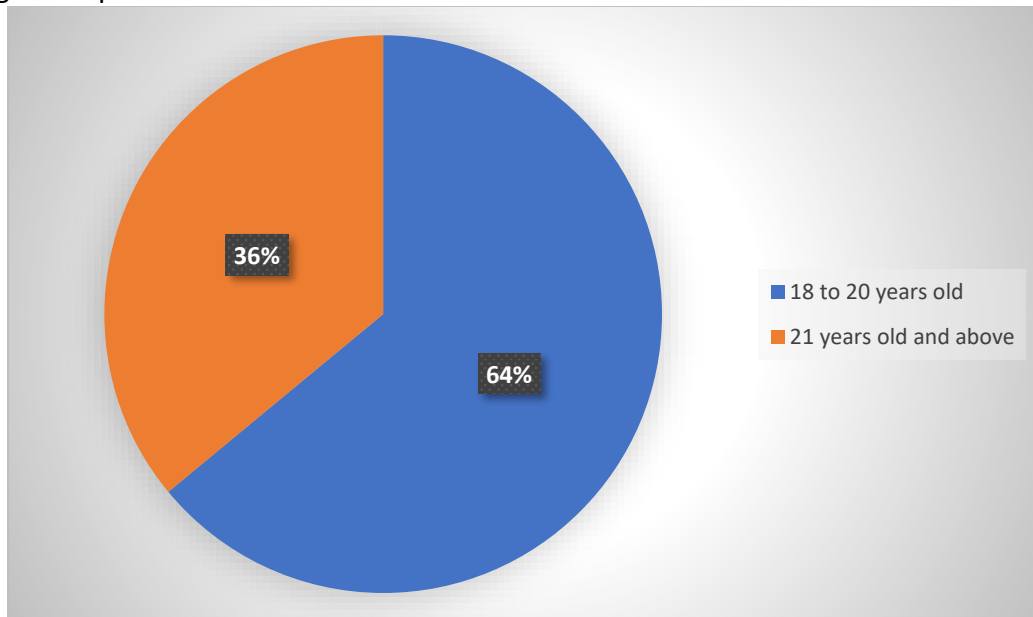


Figure 5 - Percentage of age group

Figure 5 shows the percentage for age group. 64% of the respondents are aged 18-20 years old. Next, 36% of the respondents are aged 21 years and above.

Q5. Faculty

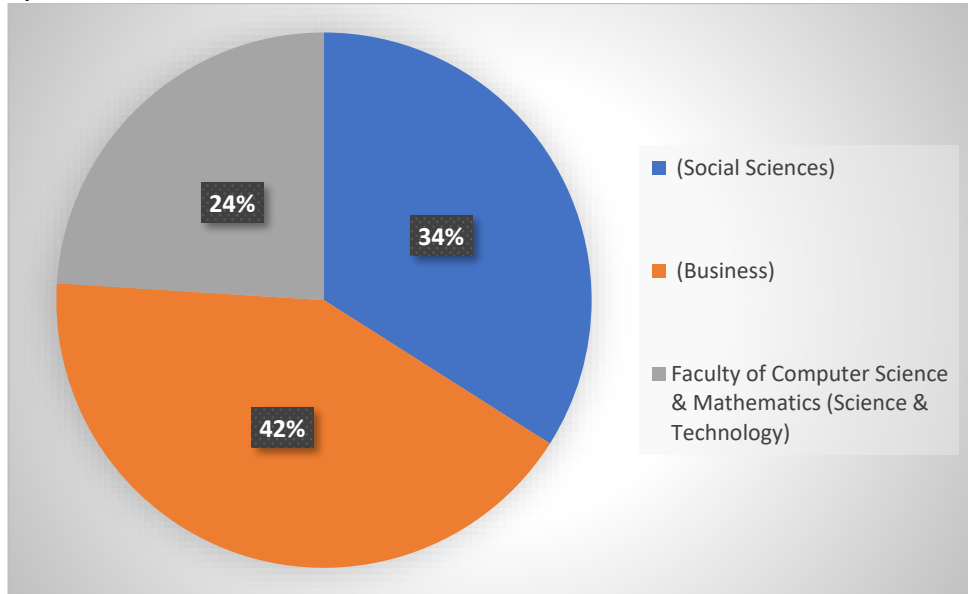


Figure 6 - Percentage of faculty

Figure 6 shows the percentage of faculty. 34% of the respondents are from the social sciences. 42% are from the business faculty while 24% are from the science & technology faculty.

Q6. Internet Access

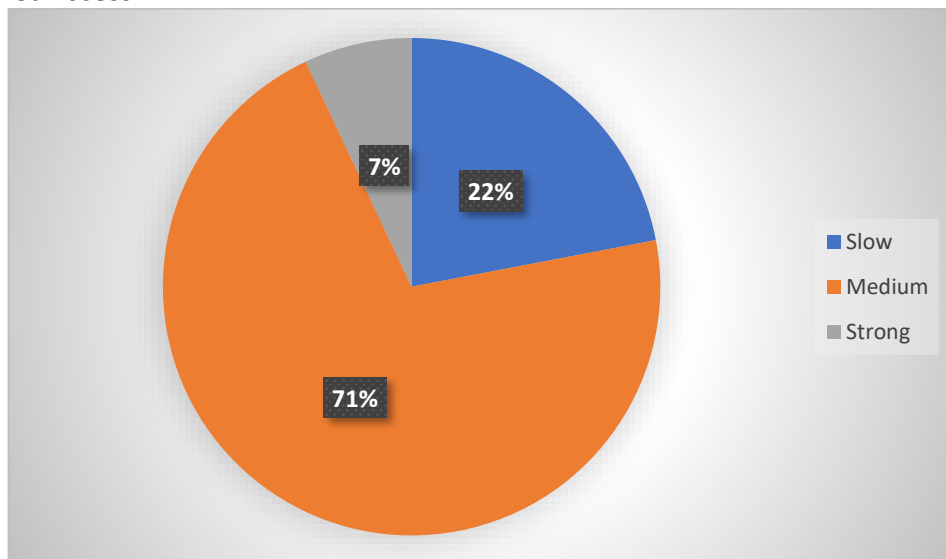


Figure 7 - Percentage of internet access

Figure 7 shows the percentage for internet access. 22% of the respondents claimed they had slow internet access. 71 % claimed they had medium internet access while 7% claimed they had strong internet access.

Findings for Experience

This section presents data to answer research question 1: How does experience influence online learning? In the context of this study, experience is measured by learner-to-content interaction.

Table 3

Mean for Experience

Learner-to-Content Interaction	Mean for Experience
Do you think that the synchronous activities (i.e. online discussion) could offer immediate assistance?	3.7
Do you think that the synchronous activities (i.e. assignment) could offer immediate assistance?	3.5
Do you think the activities could improve the understanding of the subject-matter?	3.9
Do you think the activities in online activities could improve your critical thinking skills?	3.8
Do you think you can use relevant knowledge wisely in the learning process?	3.8
Do you feel that the ease of online content is important?	4
Do you feel that it is important to get an overview of the content before the class begins?	4.1
Do you think that ODL give more benefits than drawback?	3.6

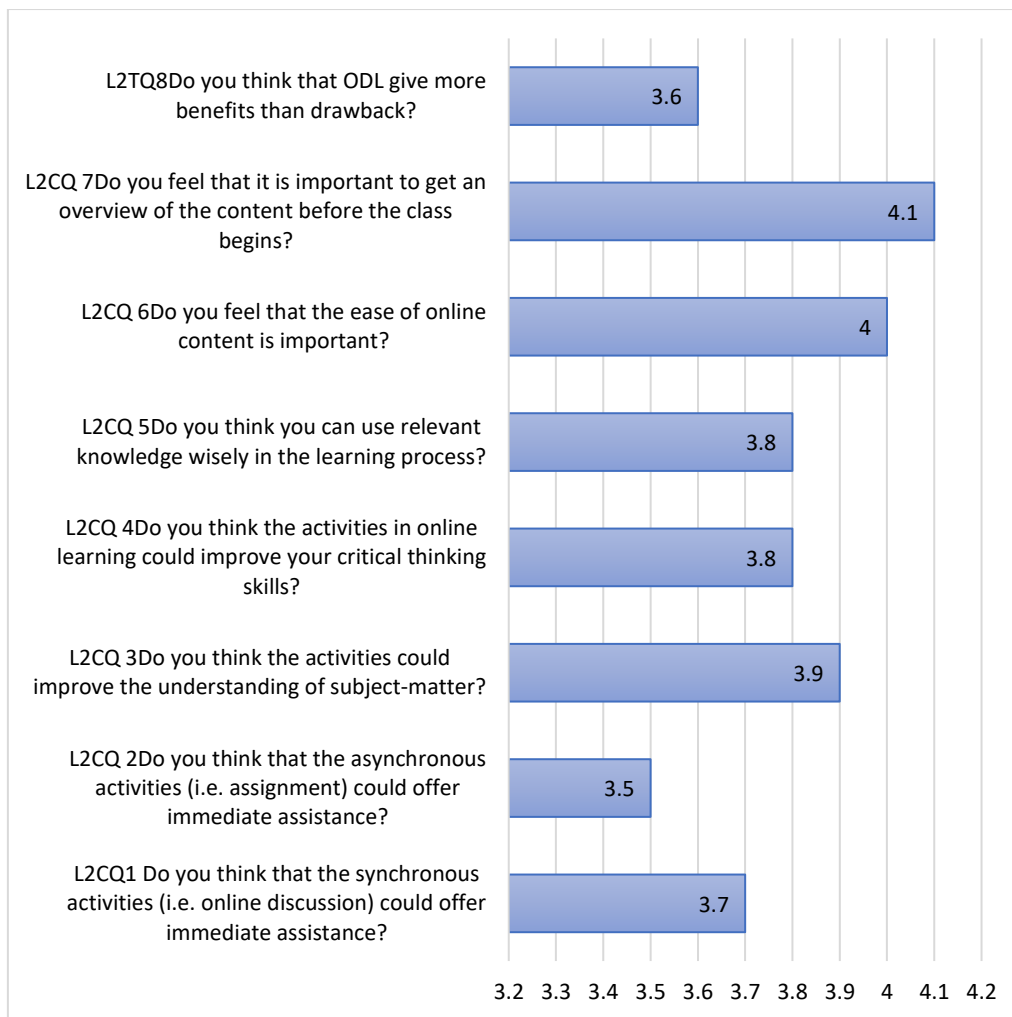


Figure 8 - Mean for Experience

Table 3 and Figure 8 show the mean for experience. The highest mean of 4.1 is for the item “feel that it is important to get an overview of the content before the class begins?”. Next, the item “you feel that the ease of online content is important?” had a mean of 4. This is followed by the mean of 3.9 for the item “think the activities could improve the understanding of subject-matter?”.

Findings for Communication

This section presents data to answer research question 2: How does communication influence online learning? In the context of this study, communication is measured through learner-to-learner interaction.

Table 4
 Mean for Communication

Learner-to-Learner Interaction	Mean for Communication
Does collaborative learning promote peer-to-peer understanding?	3.6
Are you more likely to ask for help from your peers?	3.8
Do you prefer to be in the same group with your chosen peer for online activities?	4.2
Do you think the sense of community helps you to engage in online class?	3.8
Do you think support from peers motivates you to finish tasks?	4.1
Do you think that support from peers prevent you from dropping out of course?	4.1

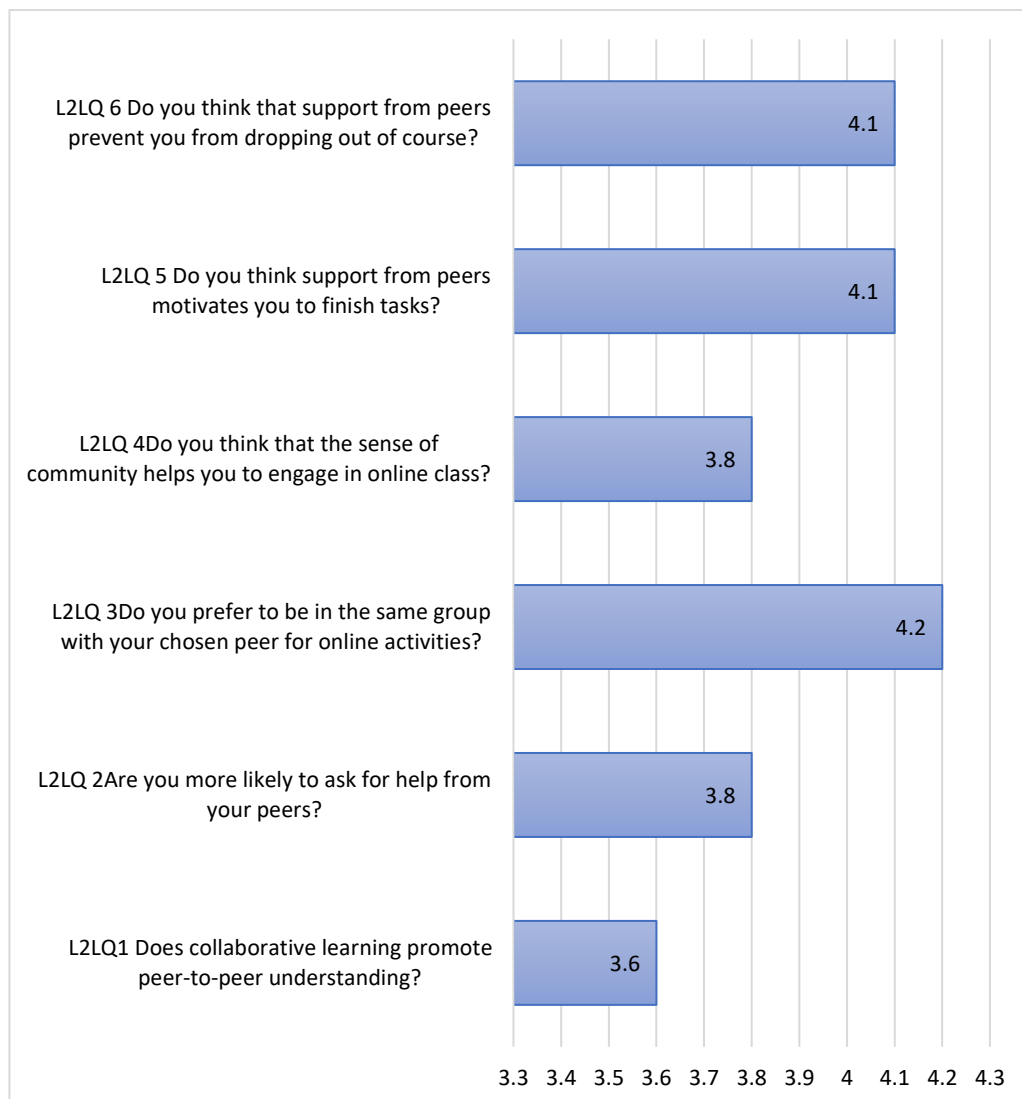


Figure 9 - Mean for Communicate

Table 4 and Figure 9 show the mean for “communicate”. The highest mean is 4.2 for the item “Do you prefer to be in the same group with your chosen peer for online activities?”.

Next, two items share the same mean of 4.1 and they are “Do you think support from peers motivates you to finish tasks?” and “Do you think that support from peers prevents you from dropping out of course?”.

Findings for Understanding

This section presents data to answer research question 3: How does understanding influence online learning? In the context of this study, “understand” refers to learner-to-learner interaction.

Table 5

Mean for Understanding

Learner-to-Learner Interaction	Mean for Experience
Does your instructor’s teaching style involve students’ active participation?	4.2
Do you feel encouraged by your instructor to keep engaged in online classroom?	4
Does your instructor provide feedback from your previous assessment?	4
Do you feel feedback from your instructor on your performances are clear and positive?	4.1
Does your instructor use more than two communication tools to stay connected with students?	4
Do you think that online platforms used by your instructors for your online class are effective and convenient?	4
Does your instructor maintain the ongoing interaction with students after online class?	4

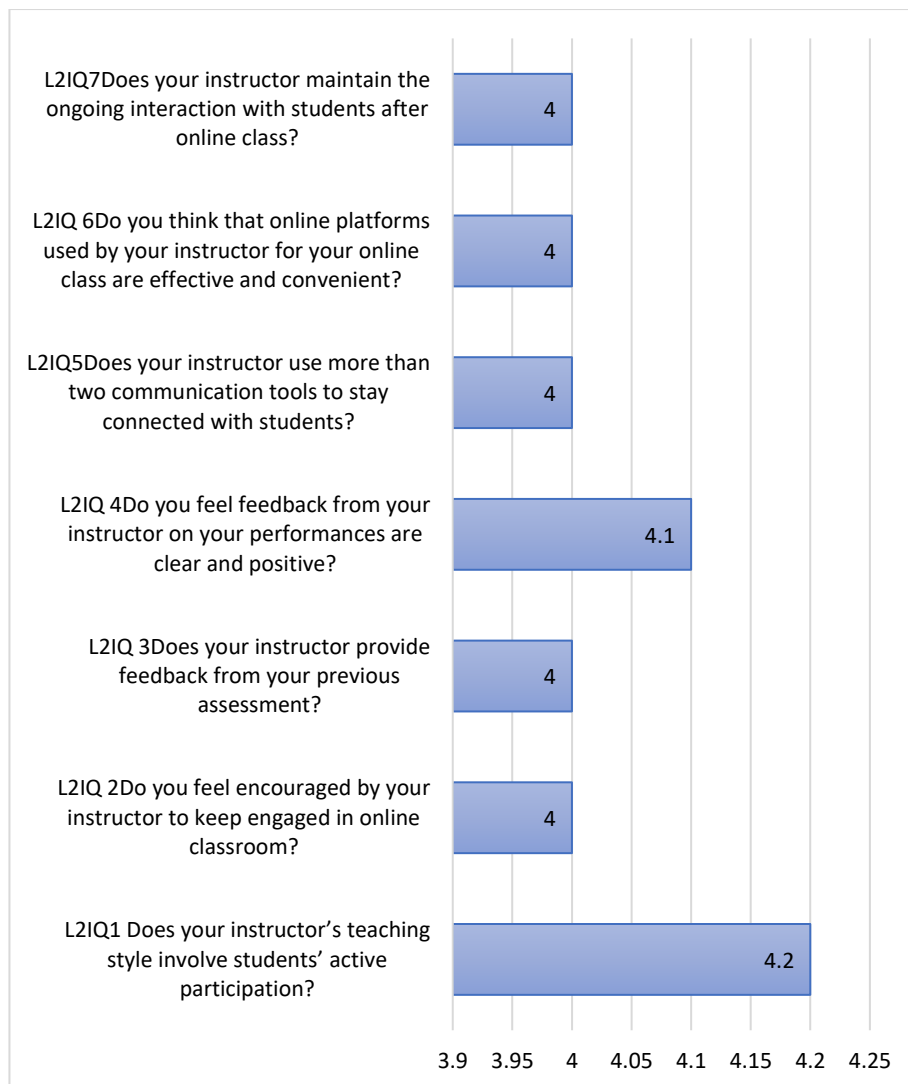


Figure 10 - Mean for Understand

Table 5 and Figure 10 show the mean for “understand”. The highest mean is 4.2 for “instructor’s teaching style involve students’ active participation”. Next, the item “feedback from your instructor on your performances are clear and positive”. Five students share the same mean of 4 and they are “encouraged by your instructor to keep engaged in online classroom”, “instructor provide feedback from your previous assessment”, “instructor use more than two communication tools to stay connected with students”, “think that online platforms used by your instructor for your online class are effective and convenient” and “instructor maintain the ongoing interaction with students after online class”.

Findings for Relationship between Experience and Communication

This section presents data to answer research question 4: Is there a relationship between experience and communication in online learning? To determine if there is a significant association in the mean scores between experience and communication, data is analysed using SPSS for correlations. Results are presented separately in table 6 below.

Table 6
 Correlation between Experience and Communication

		TOTALexperience	TOTALCOMMUNICATE
TOTALexperience	Pearson Correlation	1	.599**
	Sig. (2-tailed)		.000
	N	104	104
TOTALCOMMUNICATE	Pearson Correlation	.599**	1
	Sig. (2-tailed)	.000	
	N	104	104

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

Table 6 shows there is an association between experience and communication. Correlation analysis shows that there is a high significant association between experience and communication ($r=.599^{**}$) 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 experience and communication.

Findings for Relationship between Experience and Understanding

This section presents data to answer research question 5: Is there a relationship between experience and understanding in online learning?

To determine if there is a significant association in the mean scores between experience and understanding, data is analysed using SPSS for correlations. Results are presented separately in table 7 and 8 below.

Table 7
 Correlation between Experience and Understanding

		TOTALexperience	TOTALUnderstand
TOTALexperience	Pearson Correlation	1	.673**
	Sig. (2-tailed)		.000
	N	104	104
TOTALUnderstand	Pearson Correlation	.673**	1
	Sig. (2-tailed)	.000	
	N	104	104

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

Table 7 shows there is an association between experience and understanding. Correlation analysis shows that there is a high significant association between experience and understanding ($r=.673^{**}$) 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 experience and understanding.

Findings for Relationship between Communication and Understanding

This section presents data to answer research question 6: Is there a relationship between communication and understanding in online learning? To determine if there is a significant association in the mean scores between communication and understanding, data is analysed using SPSS for correlations. Results are presented separately in table 8 below.

Table 8

Correlation between Communication and Understanding

		TOTALCOMM MUNICATE	TOTALUnder stand
TOTALCOMMUNICATE	Pearson Correlation	1	.708**
	Sig. (2-tailed)		.000
	N	104	104
TOTALUnderstand	Pearson Correlation	.708**	1
	Sig. (2-tailed)	.000	
	N	104	104

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

Table 8 shows there is an association between communication and understanding. Correlation analysis shows that there is a high significant association between communication and understanding ($r=.708^{**}$) 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 communication and understanding.

Conclusion

Summary of Findings and Discussions

This study has revealed several interesting findings. First of all, it is found that students find experience such as getting an overview and having access to the materials as an important aspect of online learning. This is supported by Yan et al (2021) where great experience will encourage students to return for online learning courses. The findings also show that communication with peers play a significant role in their online learning process as suggested by Mayende et al (2017) communication helps to support online learning. The involvement of students' active participation and clarity of feedbacks given by the teachers will have an impact on their online learning as well. Through the findings, it is found that there is a strong relationship between experience and communication. This is supported by Park and Kim (2020) where positive student learning experience contributes to communication including engagement with instructors. The same correlation is also found between experience and understanding where a strong positive is proven. It is found by Al-Labadi and

Sant (2021) that the experience in online learning will have a direct impact on the student's understanding of course content and topic. Lastly, the findings also revealed that there is a strong relationship between communication and understanding. This corroborates with the findings revealed by Alawamleh et al (2020); Brown and Liedholm (2002) where good communication among students with their friends and teachers lead to better course performance.

(Pedagogical) Implications and Suggestions for Future Research

The digital gap and certain students' limited access to technology and high-speed internet provide one of the largest obstacles to online learning. Future studies should investigate solutions to this problem and how to guarantee that every student has equal access to online learning possibilities. According to Huang et al (2020), it is imperative to overcome the equity gap in online learning and give all students equal chances, regardless of their socioeconomic status or place of residence. In addition, future studies should examine efficient online teaching techniques, especially those that encourage student involvement, motivation, and engagement. The options for students to communicate with peers and instructors during online learning may be limited. Future studies should examine how students' social growth is impacted by online learning and determine how to foster community building and socialisation in online learning environments. This is supported by Dabbagh and Kitsantas (2012) as future study should also concentrate on discovering efficient teaching methods for online learning, such as collaborative learning, peer feedback, and multimedia education.

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