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Exploring Learning Environment in Online Learning

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Abstract

Learning environment possesses an important educational role in effective learning. The importance of the learning environment is to determine about the elements that could encourage students' intense towards their studies and could impact on students' academic achievement. Online learning is a type of delivery approach used in distance education that allows the synchronous and asynchronous exchange of resources over a communication network. Nowadays, teaching is more about assisting students in actively creating their own knowledge by giving those assignments that help this process instead of just delivering knowledge. Choosing the suitable teaching methods which congruent with specific learner needs and desired educational outcomes is critical to effective teaching. The most important factor in choosing teaching methods is to consider whether that method will help the students meeting the intended learning outcomes. Therefore, the purpose of this study is to examine the four types of learning environments introduced by Bransford, Brown, and Cocking for online learning, including learner-centred, community-centred, assessment-centred and knowledge-centred for the purpose of facilitating effective learning among diploma level students. The study adopted a quantitative method survey utilizing Google Forms, involving 150 respondents purposely chosen from a major public university in Malaysia. The questionnaire instrument was adopted from a previous study conducted by Hassan, Majid & Hassan. There are four sections with related questions to measure the four types of learning environments under this study. Thus, the impact of this paper is that the researcher will achieve an effective learning by implementing the four types of learning environment. The result also revealed that students obtain an ideal learning environment at a public university in Malaysia.

Keywords: Students' Perception, Learning Environment, Online Learning, Public University, Learner-Centred

Introduction

Background of Study

The learning environment has been well-defined as everything that happens in the educational institute (Ahmed et. al., 2018). According to Hassan et al (2020), the learning environment began to be one of the main topics in educational study only after Lewin (1936); Murray (1938) created the concept of the learning environment. It implies a variety of elements including educational, physical, psychological, emotional, social, and that affect students' intellectual growth (Afari et. al., 2013). The way students approach their studies and potential learning results are positively impacted by the learning environment that is within the control of the teacher. The learning environment, which determines what, how, and why students learn, has a significant impact on students' learning experiences and outcomes. Additionally, it has an impact on their levels of interest and learning effectiveness.

The rapid development of technology has affected the delivery of education across the world and continues to fuel the evolution of education (Johnson & Aragon, 2003). Moreover, online learning has also been introduced into higher education all over the world to make it open, user-friendly, and attractive for students and their learning needs. According to Benson (2002), online learning refers to providing educational experiences made possible using several types of technology. On the other hand, online learning capabilities present various opportunities to get new knowledge and develop students' skills through engagement and interaction in new learning environments. Thus, educators are highly encouraged to integrate digital technologies to assist in teaching and learning process and to design online learning environments (Samoylenko et. al., 2022).

Today, teaching is more about assisting students in actively creating their own knowledge by giving them assignments that can help this process instead of just delivering knowledge. The way teachers present the material also has a significant impact on how their students perceive what is required of them and what is important, which affects what and how they learn. Teachers need to demonstrate a supportive presence and help their learners to construct knowledge (Hagler et. al., 2018). By integrating digital technologies and e-learning tools learners may choose and manage their learning process and track academic performance according to their needs and requirements.

In order to compete with the best education in the world, Malaysia Education Blueprint 2013-2025 has stipulated that Information and Communication Technology (ICT) enhances the quality of education in Malaysian. This strategy is found in the seventh thrust of the Malaysian Education Blueprint 2013-2025 (Use ICT for Enhancing the Quality of Education in Malaysia). The expansion of technology in the education world has experienced an evolution that has changed the traditional method of teaching to a more modern one (Hamid, et. al. 2018). Malaysian education system, especially in higher education institutions has changed dramatically with the distinctive rise of online learning, where teachings are done remotely on digital platforms (Sia & Adamu, 2020).

Statement of Problem

Since Lewin (1936) has introduced the concept of learning environment, it has been one of the main topics of educational study. This learning environment holds an important educational role in effective learning (Stiles, 2000). Most teachers and researchers are interested in knowing more about the elements that could encourage or inhibit students' intense engagement in their studies (Hanrahan, 1998). Teachers need to understand that learning is a social process and that effective learning environments go beyond email discussions and electronically delivered course notes to support active acquisition of subject-specific and general expertise as well as the need to adopt a particular subject or professional culture (Stiles, 2000). Richardson & Mishra (2018); Gunduz et al (2016) both claimed that the learning environment could have an impact on students' academic achievement. Additionally, teachers have influenced over factors that have a direct impact on students in creative learning contexts (Lilly & Bramwell-Rejskind, 2004).

Recent research by Hassan et al (2020) revealed that every element of their proposed Learning Environment Inventory (LEI) model (which includes the categories of learner, community, assessment, and knowledge) is consistent with the qualities of a learner-centred learning environment. The model is acceptable and can be considered as one of the valid instruments. However, as it was only tested on secondary school students from one state as a sample. Hassan et al (2020) believed that the LEI model should be examined for a wider approach. Therefore, the purpose of this study is to examine the four types of learning environments for online learning, including learner-centred, community-centred, assessment-centred and knowledge-centred for the purpose of facilitating effective learning among diploma level students. Nonetheless, in this study, the questionnaire survey has also provided useful baselines for descriptive research of students' impressions of their learning environment. The main objectives of this study are to discover more about how students feel about their existing learning environment and how they perceive their ideal learning environment.
Hence, this study is done to investigate the learning environment for online learning. This investigation is done to answer the following questions;

- RQ1- How do learners perceive learning as learner-centred?
- RQ2- How do learners perceive learning as community-centred?
- RQ3- How do learners perceive learning as assessment-centred?
- RQ4- How do learners perceive learning as knowledge-centred?

Literature Review

Theory and Advantages of Online Learning

There are many definitions of online learning in the literature; whereby the definitions reflect the diversity of practice and associated technologies. Till today, there are too many different terminologies that have been applied for online learning and the most used terminologies are e-learning, Internet learning, distributed learning, networked learning, tele learning, virtual learning, computer-assisted learning, Web-based learning, and distance learning. However, according to Anderson (2008); Barthakur et al (2022), online learning can be defined as the use of the Internet to access learning materials; interact with the content, instructor, and other learners; and obtain support during the learning process, to acquire knowledge, to construct personal meaning, and to grow from the learning experience.

It is widely acknowledged in online learning research and practice that there are many schools of thought on learning and no one school is used exclusively to design online learning materials (Kumar et. al., 2018). As there is no single learning theory to be followed and a number of theories have evolved (Sadeghi, 2019), researchers can use a combination of theories to develop online learning materials. Basically, this research was carried out using the model introduced by (Bransford et al., 1999). This model has four different types of online learning, known as learner-centred, community-centred, assessment-centred, and knowledge-centred. There are potential benefits of investing in online learning, for example, increased access, improved quality of learning, better preparation of students for a knowledge-based society, "lifelong" learning opportunity, profit-making, and many more (Appana, 2008).

Challenges with Online Learning

Adapting to the online environment can be a challenge for both facilitators and students alike (Kirkwood & Price, 2014; Gillerr-Swan, 2017). With the support of technology in modern society, there are many prospects for teachers and students to gain effectiveness in teaching and learning, among which should be online classes (Pham, 2022). It is undeniable that online education offers both teachers and students numerous benefits.

According to Yahanna et al (2020); Nguyen (2022), one of the benefits gained from implementing online teaching and learning for teachers and students is the media diversity. Students are able to use various resources from the libraries and databases all over the world. Furthermore, the students will have opportunities to exchange ideas and work in groups or pairs via different applications, software, and websites. Students may indirectly have more opportunities to widen their knowledge in each specific fields. It is a mandatory element in online teaching and learning, in which both teachers and and students must be convenient. According to Alexander et al (2012), both teachers and students would not put a lot of effort to dress up well, worrying about getting stuck in traffic congestion, or any other incidents that might happen in face-to-face classes. In addition, both teachers and students have their own freedom to choose their comfortable teaching and learning places. Yahanna et al., (2020) also emphasize that low financial expenses is also a benefit that online teaching and learning offers to teachers and students. This may help students to reduce their burden of related fees while getting comfortable in their studies. The chances of reviewing the recorded lessons many times via the recording of each lecture (Zulaikha et al., 2021) can help students to prepare better for their final assessments.

Past Studies

Past Studies on Perception of Learning

Many studies have been done to investigate the perception of virtual teaching and learning especially on online collaboration and experience of online teachers. The study by Akuratiya & Meddage (2020) is done to investigate a quantitative case study to explore IT students' perception of online learning. The data was collected among 130 students which shifted from traditional classroom to online learning using descriptive statistics analysis by SPSS. The results displayed that students' have higher perception towards online learning regardless of the challenges, issues related to social isolation, technical problems and reduced interaction between teacher and friends.

Next, the study by Nasution et al (2021) also looked at preferable student perception of learning between face-to-face, blended learning and online learning. This descriptive research used quantitative approach which involved 100 students of Islamic Religious Education Study programs. Results from the study showed the most favored choice is face to face learning, followed by blended learning and online learning. However, online learning is the most important to be conducted especially when it involves an emergency situation and will become a trend for future learning environment.

Past Studies of Learning Environment

Many studies have been done to investigate the learning environment in online learning. The four related factors include learner-centred, community-centred, assessment-centred and knowledge-centred are considered for determining effective learning.

A study by Gunduz (2016) was conducted to look at Turkish students' involvement in their studies and the development of their higher-order thinking abilities. Based on the constructivist learning design concept set out by Jonassen (1999), this study created an online learning environment which focused on problem solving and analysed its efficacy. The study took over more than a week, and data from 1,417 online distance learners' students from six universities and vocational schools were collected using performance tasks and self-evaluation forms. According to the research, learning is positively affected by the problem-based online learning environment. Additionally, it was found that a community-centred online environment hindered learners from engaging in the intended activities and prevented the encouragement of student cooperation.

Another study done by Valtonen et al (2021) focused on university students' opinions of ideal learning settings and ideas of the most suitable learning environments for higher education. A total of 230 university students had participated in the study using an open-ended questionnaire to assess the overall perception of students' experiences in the current learning environment. According to the findings, students' needs varied depending on how they perceived their learning environments. The need for learning environments that offer appropriate resources and support for learning will be continually tested by the advent of new pedagogical approaches, technologies, and learning requirements, as well as by changes in students' personal circumstances. The study offered crucial views for developing proper and improved learning environments for needs in higher education.

Conceptual Framework

According to Rahmat (2018), besides using the correct learning strategies, the learning process is facilitated by the surrounding learning environment. The learning environment can be knowledge-centred, assessment-centred, community-centred or even learner-centred. The framework of this study is rooted from Hassan et al (2020) learning environment who emphasizes four types of environments for effective learning. In the context of this study, the learning process traditionally begun as being (i) learner-centred. Then, the online mode has brought the learning into more (ii) community-centred. Nevertheless, the two main characteristics of learning which involved (iii) assessment-centred and (iv) knowledge-centred are still kept in place. Figure 1 shows the conceptual framework of the study, as the motives of learning begun with the self. Then activities that involve other learners as considered as community centred while concentrating on the assessment and knowledge centred aspects.

Figure 1- Conceptual Framework of the Study- Learning Environment in the Learning of via online.

Methodology

This quantitative study was done to investigate how students perceive all 4 different types of learning environments in their university. 150 participants were purposely chosen from a public university in Malaysia. The instrument (refer to table 1) used is a survey adapted from (Hassan et al., 2020). Apart from the demographic profile in Section A, there are 4 different types of learning environment which are divided in Section B, Section C, Section D and Section E. Section B has 7 items measuring for Learned-Centred and Section C has 7 items on Community-Centred. While section D with 8 items on Assessment-Centred and Section E consists of 8 items on Knowledge-Centred. All items in Section B, C, D and E are measured by Likert Scale of 1 until 5 which indicate 1 (Never), 2 (Rarely), 3 (Sometimes), 4 (Very Often) and 5 (Always).

Table 1
Distribution of Items in Survey

SECTION	TYPE OF LEARNING ENVIRONMENT	NO OF ITEMS
B	Learner-Centred	7
C	Community-Centred	7
D	Assessment-Centred	8
E	Knowledge-Centred	8
TOTAL NO OF ITEMS		30

Table 2
Reliability Statistics

Cronbach's Alpha	N of Items
0.974	30

Data was collected via google form and analysed using SPSS version 26. With reference to table 2, the SPSS analysis revealed a Cronbach analysis of .974. Thus, showing high internal

reliability of the instrument used in this study. The data is presented in the form of percentage for the demographic profile and mean scores to answer the research questions.

Findings

Findings for Demographic Profile

Q1 Gender

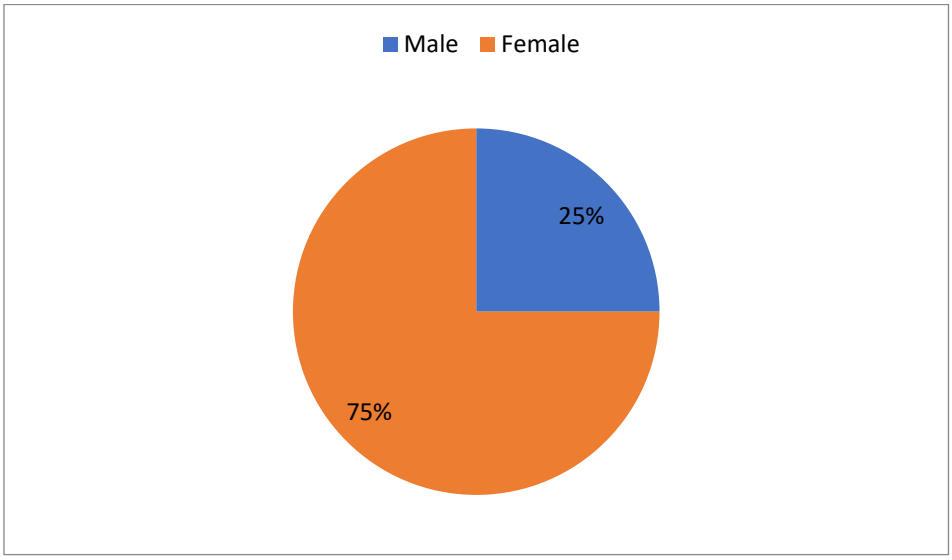

Figure 2 - Percentage for Gender

Based on Figure 2, it shows that out of 150 respondents of the survey, 75% are female and the other 25% are male.

Q2 Educational level

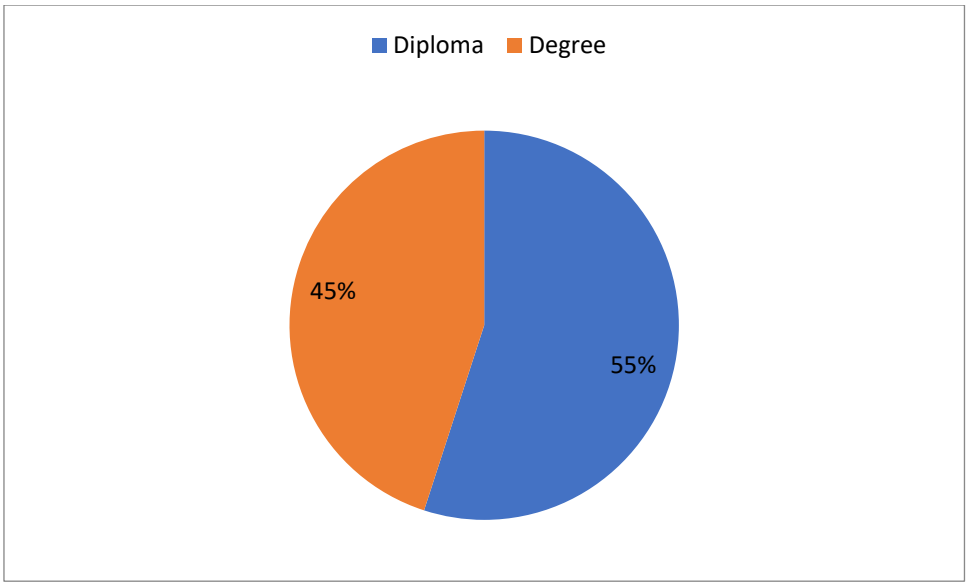

Figure 3 - Percentage for Educational Level

Figure 3 indicates the percentage of educational level of the respondents and 55% of them are Diploma students and the remaining 45% are Degree students.

Q3 Faculty

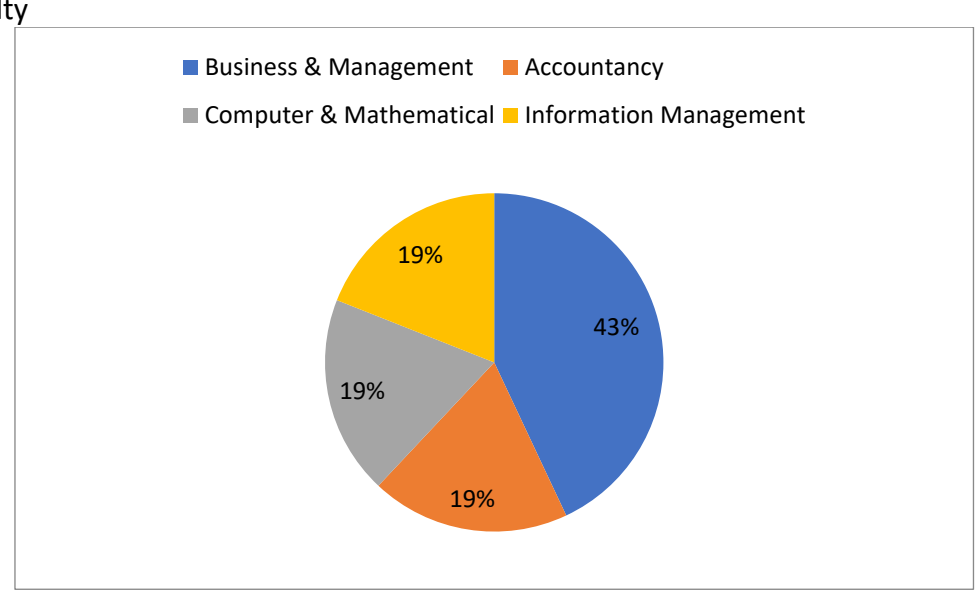

Figure 4 - Percentage for Faculty

Figure 4 presents the percentage of respondents based on their faculties. Most of them are from the Faculty of Business & Management which contributes about 43%. The Faculty of Accountancy, Faculty of Computer & Mathematics and Faculty of Information Management contributes 19% simultaneously for each faculty.

Findings for Learner-Centred

This section presents the data to answer research question 1 on how do learners perceive learning as learner-centred?

Learner-Centred (LC)

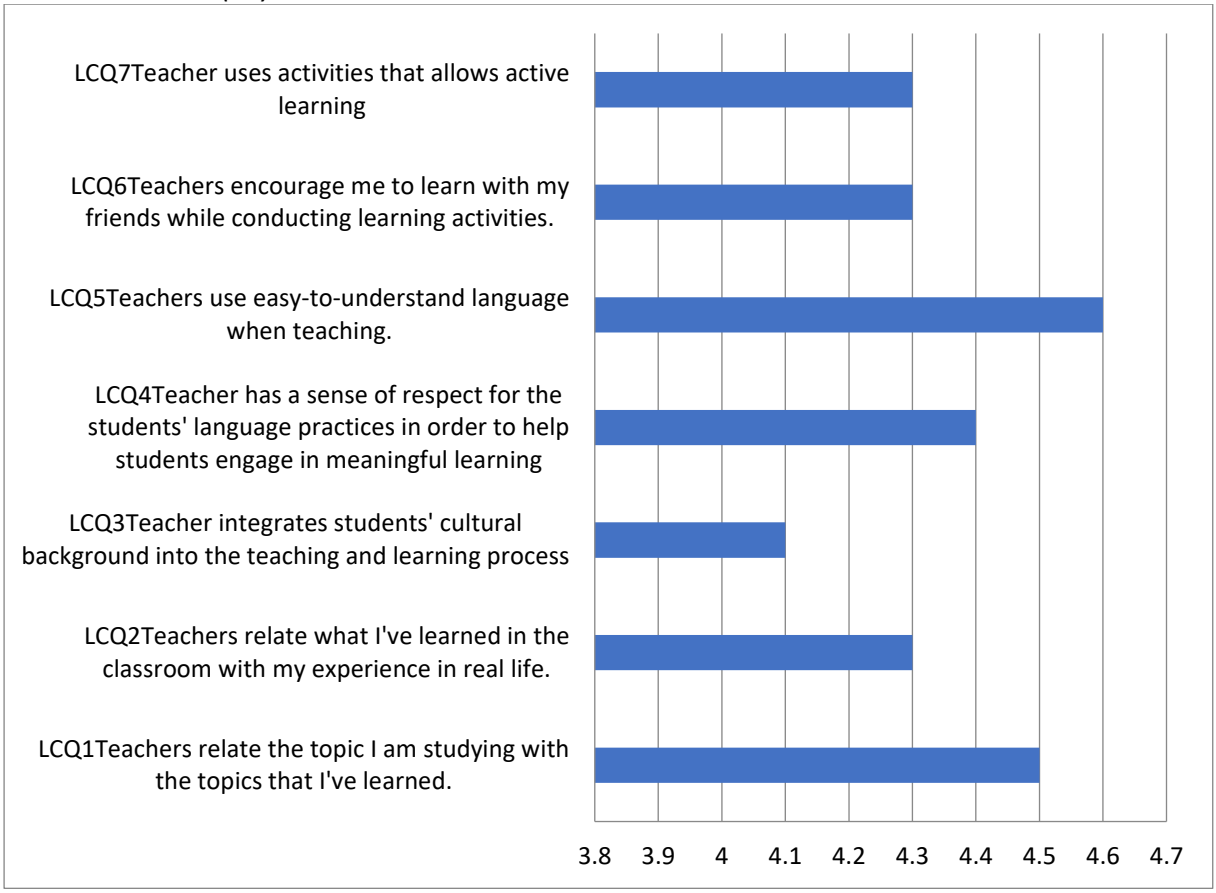

Figure 5- Mean for learner-Centred

Figure 5 shows the mean for learners in perceiving learning as learner-centred. The highest mean from 7 criteria in learners' perceptions of learning as learner-centred is 4.6, LCQ5 “Teachers use easy-to-understand language when teaching.” When the teacher uses easy language while teaching, students will have a high perception of learning. Meanwhile, the lowest mean of 4.1, LCQ3 “Teacher integrates students’ cultural background into the teaching and learning process” which makes students perceived to learn. Apart from that, mean of 4.3 are (1) LCQ2 “Teachers relate what I’ve learned in the classroom with my experience in real life”, (2) LCQ6 “Teachers encourage me to learn with my friends while conducting learning activities” and (3) LCQ7 “Teacher use activities that allows active learning”. The next means of 4.4 is LCQ4 explaining the teacher needs a sense of respect for students’ language practices to engage their meaningful learning. Lastly, the question shows the mean of 4.5 which indicates the item of teachers do relate the previous topic that students learn with the current topic.

Findings for Community-Centred

This section presents data to answer research question 2 on how do learners perceive learning community-centred?

Community-Centred (CC)

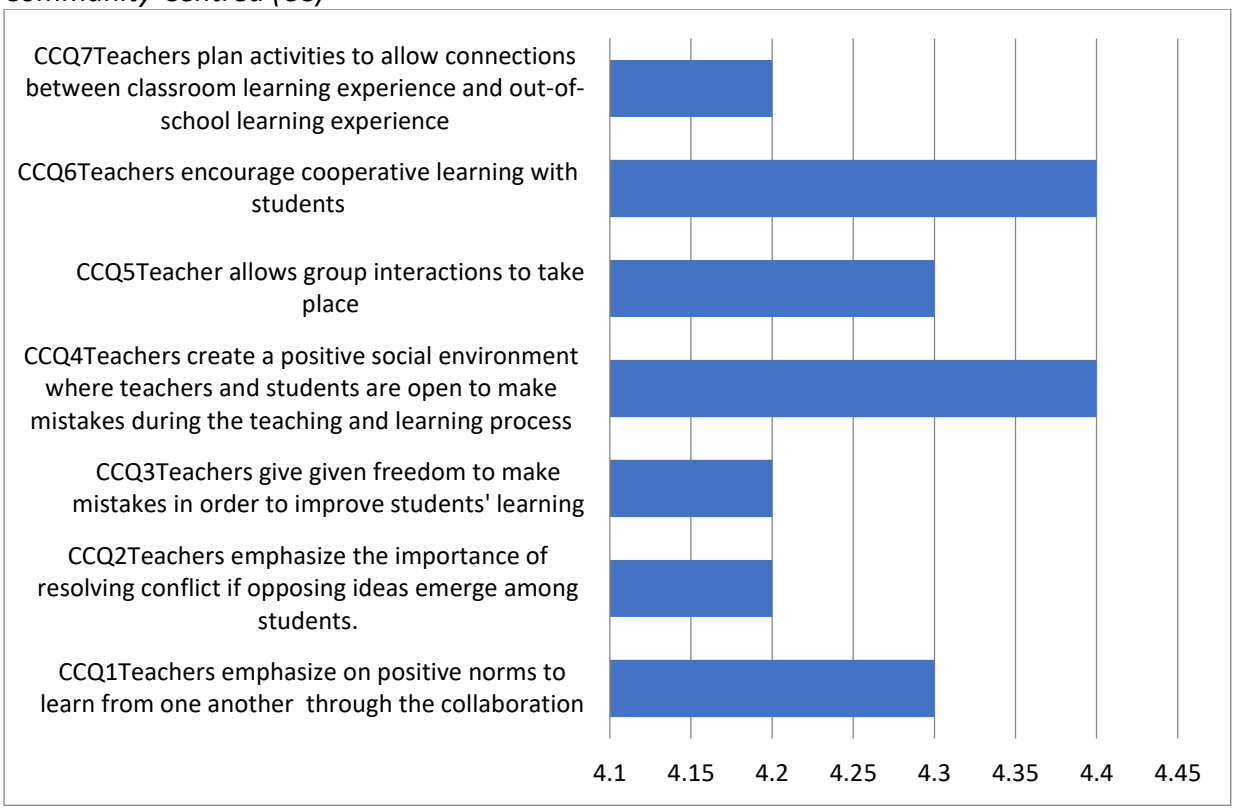

Figure 6- Mean for Community-Centred

Figure 6 shows the mean value for the type of learning environment of community-centred. The highest mean value of 4.4 comes from 2 items, CCQ4 “Teachers create a positive social environment where teachers and students are open to make mistakes during the teaching and learning process” and CCQ6 “Teachers encourage cooperative learning with students”. Value 4 in likert-scale in this questionnaire is referred to very often. Hence, overall mean value in these 7 items of community-centred are 4 which show that the teachers in the public university in Malaysia are well practiced in this type of learning environment.

Findings for Assessment-Centred

This section presents data to answer research question 3 on how do learners perceive learning Mathematics as assessment-centred?

Assessment-Centred (AC)

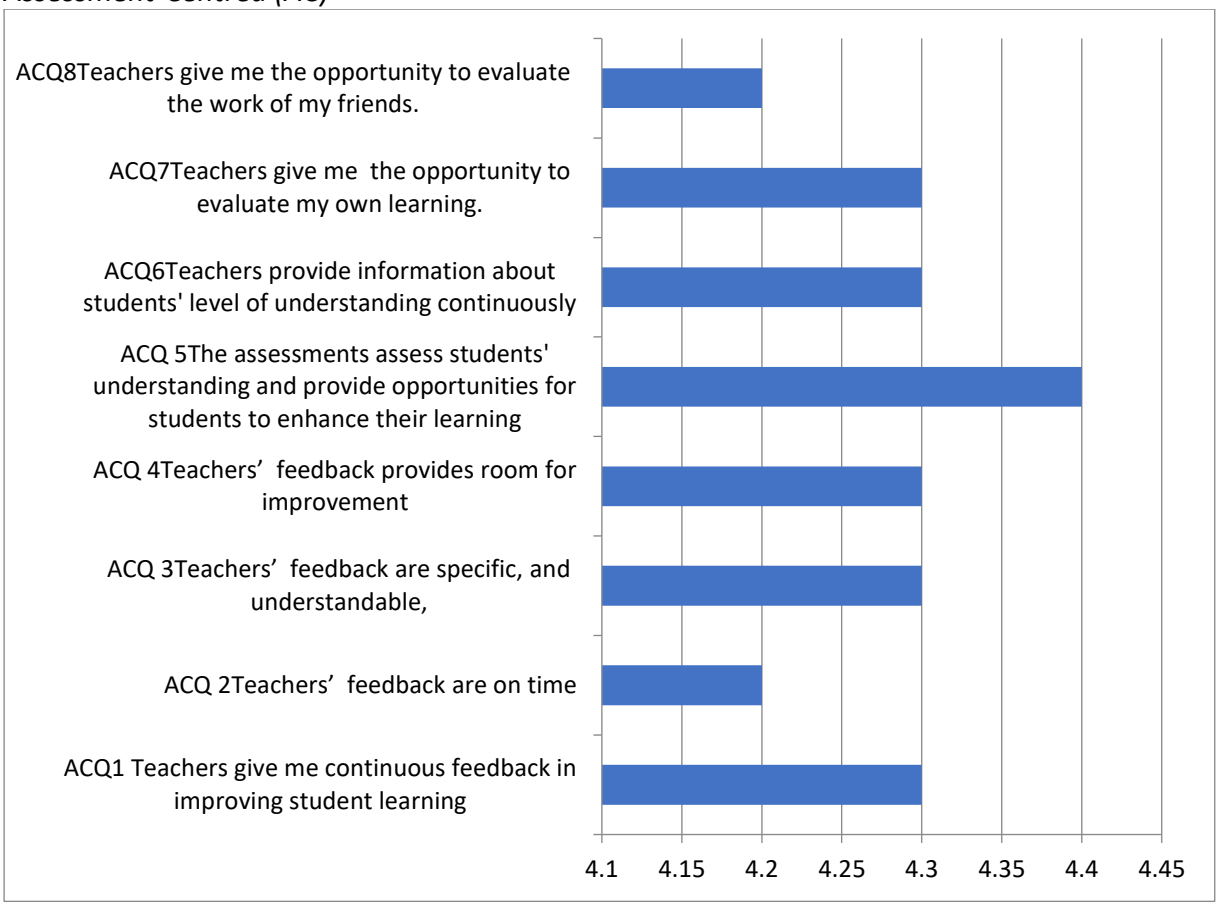

Figure 7- Mean for Assessment-Centred

Based on the mean values in Figure 7, the highest mean from the eight items in assessment-centred is 4.4, which represents ACQ 5 "The assessments assess students' understanding and provide opportunities for students to enhance their learning". This result indicates that the students prefer to do the assignment provided by the teachers for their better understanding. If the students can do the assignment well, they have a good understanding in certain topics, and this can lead to learning enhancement. Meanwhile, the statement of ACQ 2 "Teachers' feedback is on time" and ACQ 8 "Teachers give me the opportunity to evaluate the work of my friends" both are the lowest mean for assessment-centred with the mean value of 4.2. The remaining statements from item ACQ 1, ACQ 3, ACQ 4, ACQ 6 and ACQ 7 have the same mean value of 4.3.

Findings for Knowledge-Centred

This section presents data to answer research 4 on how do learners perceive learning as knowledge-centred?

Knowledge-Centred (KC)

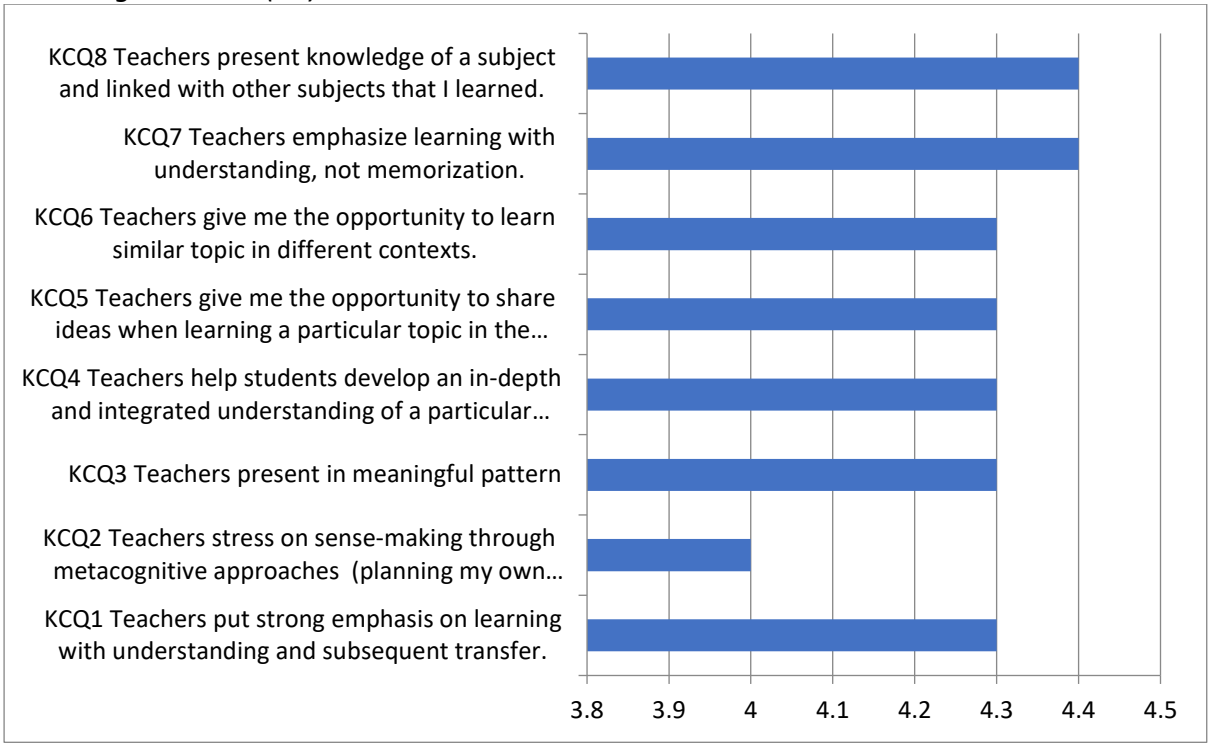

Figure 8- Mean for Knowledge Centred

In figure 8, there are 8 items measuring the type of learning environment of knowledge-centred. The highest mean value comes from 2 items which are KCQ7 "Teachers emphasize learning with understanding, not memorization" and KCQ8 "Teachers present knowledge of a subject and liked with other subjects that I learned" contribute 4.4. The overall mean value in these 8 items of knowledge-centred are 4 which show that the teachers in the public university in Malaysia apply it very often.

Conclusion

Summary of Findings and Discussion

The main objectives of this study are to discover more about how students feel about their existing learning environment and how they perceive their ideal learning environment. This findings show the students' perceptions of the educational environment at public universities in Malaysia were on the positive side. Students agreed that teachers are moving towards giving effective learning environments which are framed within the convergence of four overlapping lenses known as learner-centred, knowledge-centred, assessment-centred, and community-centred. Effective online lessons are essential to allow the learners to sense and perceive the information and must include strategies to facilitate high-level processing for the transfer of information to long-term memory. Teachers were aware that online learning materials should include activities for the different learning styles and as a result, learners can select appropriate activities based on their preferred style. It is undeniable that it does not matter how effective the online materials are, if learners are not motivated, they will not learn.

Pedagogical Implications and Suggestions for Future Research

Apart from technology becoming an essential part of the way we socialize, work and communicate, it is also becoming an essential part for the teachers to teach and how students learn. Nowadays, in this era of technology, to be a good teacher is a challenging task. Teachers need to be more creative and work hard when imparting knowledge to their students. In order for teachers to effectively teach their specific subject matter and employ the pedagogies required by that subject matter, the technologies available for online teaching today sometimes lack helpful features that teachers need. Disciplines are highly required when students use technology for online teaching. Apart from technology, the learning environment also needs to be emphasized in ensuring the effectiveness in learning. The teachers need to ensure that the knowledge is delivered not just for examination oriented.

For future research, researchers can focus on a specific subject and evaluate how students feel about their existing learning environment and how they perceive their ideal learning environment. Research to measure the relationship between the learning environment and the types of learning style also recommended.

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