

E-Learning Styles: An Exploratory Study in a Multi-Cultural Education Environment

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Abstract:

Education is not confined to a physical classroom anymore and the geographic limitations have been removed thanks to the disruptive innovations in the information and communication network. Computer aided classrooms, live chat rooms, online learning portals etc have helped the students take up anytime anywhere learning possible. Having in mind that every student is a unique learner in his own way, there are facilities available to suit their individual requirements. This exploratory study was aimed at observing and analysing the learning preferences of students in a multi-cultural environment in terms of synchronous and asynchronous learning styles. In order to observe the the factors influencing their learning pattern and also analyse the differences in these determinants, data was collected from 179 e-learners in two private universities of Malaysia. A structured questionnaire was designed to collect data online from these students. The results revealed that asynchronous learning environment was considered to be most preferred choice of the students in which around 60% preferred this type and only the rest of the sample respondents synchronous learning and nationality was found to influence their preferred learning style. Among synchronous learners, there were differences in the cognitive and affective among different nationals. But in case of asynchronous learners, there was found to be no significant difference in the factors influencing learning styles a belonging to China and other nationalities both in the cognitive and affective domain. But in case of Malaysian nationals, there was a significant difference in the asynchronous learners belonging to Malaysia both in cognitive and affective domain. Individual preferences may be considered based on their nationality while designing and offering e content.

Keywords: e-learning, academic performance, synchronous, asynchronous, cognitive and affective

1. INTRODUCTION

With the disruptive changes in technology and innovations, the teaching profession has evolved from an emphasis on teacher centric, lecture-based instruction to student-centric learning-based interactive learning environment. When e-learning was introduced, people in the education sector were concerned that bringing computers into the classroom would remove the human element that many learners benefit from. However, with the rapid progress in technology and the advancement in learning systems, it is now becoming inevitable to embrace the changes. The introduction of computers was the basis of this revolution and with the passage of time, as people get addicted to smart phones, tablets, etc, these devices now have an important place in the classrooms for learning. Books are gradually getting replaced by e-resources. Knowledge can be shared through the Internet, which is accessible 24/7, anywhere, anytime. Institutions using e-learning technologies are a step ahead of those which still have the traditional approach towards learning.

The importance and effectiveness of technology-based learning cannot be taken lightly or ignored completely. It is believed that the human brain can easily remember and relate to what is seen and heard via moving pictures or videos. It has also been found that visuals, apart from holding the attention of the student, are also retained by the brain for longer periods. Various sectors, including agriculture, medicine, education, services, business, and government setups are adapting to the concept of E-learning which helps in the progress of a nation.

In the education sector, e-learning is now widely embraced both by the teacher and the taught making it inevitable. There are also wealth of interactive designs available that ensure distance learning as both an engaging and valuable lesson delivery medium. With a dedicated and tech-savvy team and by building partnerships with quality training providers, e-learning provides the perfect blended learning environment. Sabine Graf (2007) has mentioned this as a necessity and stated that adaptability includes all facilities to customize the system for the needs of the educational institutions.

Synchronous and Asynchronous Learning

A learning system of formal teaching with the help of electronic resources is known as E-learning. While teaching can be based in or out of classrooms, the use of computers and the Internet forms the major component of e-learning. E-learning can also be termed as a network enabled transfer of skills and knowledge, and the delivery of education is made to a large number of recipients at the same or different times. Methods of providing e-content in an online classroom, instructors, learners, interactive tools, modes of interaction and many other factors in online learning modes are classified into two modes including synchronous and asynchronous e-learning.

Synchronous learning involves online education conducted with the help of live online chat rooms. Live online education helps learners to stay in touch with their teacher and fellow students. It is called synchronous learning because the system allows students to interact in perfect sync with their teachers and/or fellow students through instant messaging. . People might just know it by reference to a particular vendor, tool or software program that enables the creation and delivery of synchronous e-Learning. Synchronous e-learning is live, real-time (and usually scheduled), facilitated instruction and learning-oriented interaction. In this type of learning, learning experiences are live and real-time. The roots of synchronous e-learning are derived from three main influences: the classroom, the media, and the conference.

On the other hand, there is asynchronous learning. Asynchronous learning involves coursework delivered by web, email, and message boards that are posted in online forums. Students do not have access to instant interaction through this online forum. A benefit of asynchronous learning is that the learner can take up the lessons at his own pace.

A significant difference between synchronous and asynchronous learning is instant messaging and immediate feedback. Synchronous learning works on real time basis whereas asynchronous works on offline mode. With synchronous learning, learners can receive immediate feedback from their fellow students or teacher through instant messaging. Asynchronous learning does not enable that type of interaction. If someone has trouble answering the questions, they are not able to ask for help straight away. But the advantage with asynchronous learning is that it can be self-paced, which is not possible with synchronous learning.

Problem Statement

Online learning due to the use of advanced and sensitive tools enables the e-learners to apply those tools which are adapt to their individual preferences. Personalized learning environment is a process that any modern educational theories have emphasized on it. Today, the preferred learning style is one of the most important criteria for recognizing any individual differences in learning process which have been considered for adaptability. Synchronous and Asynchronous learning tools, such as threaded discussions, instant messaging and blogs, play an important role in humanizing online courses by replicating the classroom experience of information exchange and social construct, not just between learners and instructors but among the learners as well. Considering that every student is a unique learner in his own

way, there are facilities available to suit their individual requirements. This exploratory study was aimed at observing and analysing the learning preferences of students in a multi-cultural environment in terms of synchronous and asynchronous learning styles, to analyse the differences in their learning pattern and also the factors influencing their learning pattern which could potentially help the academicians to provide the students with such learning tools that is most suitable for them.

Research Objectives

This research was undertaken with the following research objectives:

- To observe the learning preferences of the students in terms of synchronous and asynchronous styles among the students in Malaysia
- To analyse the association between their profile and their learning styles
- To explore the underlying dimensions which determine their learning preferences.
- To explore the differences in the factors determining learning preferences between the students of different nationalities.

2. LITERATURE REVIEW

ShazliHasan Khan (2019) in his article has insisted that designing and implementing successful ICT enabled education programmes is the key to fundamental wide-ranging educational reforms. Teachers who teach the present generation students should be able to effectively use these new tools for learning having skill and training to stimulate and maintain student interest and to make them achieve high academic standards. The paper explores that how ICT would be able to bring about a paradigmatic shift in the present teaching and learning process and how it is reconfiguring, the landscape of the way the course content is being delivered in the present century classrooms.

In their study Minseok Kang and Won suk Shin (2015) proposed to study the extended technology acceptance model to predict acceptance of synchronous e-learning by examining relationships among variables associated with factors influencing the technology acceptance of synchronous e-learning. Learners at an online university participated through an online survey; there were 251 respondents in all. They employed structural equation modeling, and tested a hypothesized model which had a good fit. Self-efficacy, subjective norm, and system accessibility have an effect on learners' technology acceptance of synchronous e-learning, whereas systematic lecture content does not affect it. In addition, the perceived ease of use also has an effect on behavioral intention, whereas perceived usefulness does not. This study examined the acceptance structure of synchronous e-learning. The findings are expected to enhance the understanding of synchronous e-learning for instructors and school administrators and also provide empirical evidence that can be used to establish effective strategies.

In their research article Shahabadi&Uplane (2015) tried to study the learning styles of students in mode of synchronous and asynchronous e-learning and to compare the learning styles of e-learners with their academic performance. Synchronous or asynchronies e-learner determiner test and the Kolb's Learning Styles Inventory (KLSI 3.1) were conducted to identify differences in the learning styles among e-learners from six virtual universities in Tehran to assess whether there is any significant difference within synchronous and asynchronous e-learners' learning styles based on their academic performance groups. The results revealed that in synchronous e-learners while, synchronous e-learners in low, mediocre and high academic performance groups preferred Assimilating and Diverging styles. In contrast, the results demonstrated that asynchronous e-learners in low, mediocre and high academic performance groups preferred Assimilating and Converging styles.

Lorayne Robertson and Wendy Hardman (2012) in their research article followed professors through the transition from either asynchronous courses or face-to-face courses to teaching synchronous mode and have documented the challenges and lessons through training programmes, observations and interviews. After a year of observance, the findings were documented and it was found that more explicit discussion among the peer group regarding the technological abilities, constraints and pedagogies helped them navigate through the transformation very easily.

Wang (2007)inhis study examined the effect of an important cultural dimension—power distance index (PDI)—on learners' perceptions of their online learning experiences. PDI refers to the degree to

which a learner's response to another individual in a learning setting is inhibited or otherwise negatively altered when the other individual holds a position that is superior or inferior to the learner's own position. This study aims to generate guidelines for better design and facilitation of online courses that can effectively engage all students in the learning process. Research findings are particularly relevant to researchers and practitioners who are interested in the cultural aspects of online learning. This study contributes to the current knowledge base about designing effective online courses and about practicing culturally responsive teaching in an online setting.

The case study of Mabrito (2006) examined the collaborative experiences of students in an online business writing classroom. The purpose was to examine the same groups of students working on collaborative writing assignments in both a synchronous (real-time) and an asynchronous (non-real-time) discussion forum. This study focused on examining the amount, pattern, and focus of interactions, as well as assessing students' attitudes toward communicating in the two different environments.

Beyth-Marom, et.al.(2005) in their research aimed to determine the factors that affect students' preferences regarding tutorial modes. A learning-habit inclinations questionnaire (LHIQ) was constructed and administered to 288 students. Factor analysis revealed four factors: "time management," "ease of access" to learning materials, "positive aspects of interaction" and "negative aspects of interaction. Attitudes toward different components of the learning environments were measured. Results revealed that preferences of tutorial mode were determined by students' learning-habit inclinations: Those who prefer the synchronous tutorials have stronger views toward the positive aspects of interactions and score lower on the need for autonomy and access to learning materials than those who prefer the asynchronous tutorials.

Benbunan-Fich&Hiltz (1999) in their research article conducted a field experiment to compare groups and individuals in solving an ethical case scenario, with and without an ALN, to determine the separate and joint effects of communication medium and teamwork. Asynchronous Learning Network (ALN) is a Computer-Mediated Communication System designed to support "anytime/anywhere" interaction among students and between students and instructors. The results indicated that that an ALN enhances the quantity and quality of the solutions to an ethical case scenario. The combination of teamwork with ALN-support increases the students' perception of learning. Although the perception of collaborative learning was similar between ALN-supported and unsupported groups, participants in computer-mediated groups reported lower perceptions of discussion quality than participants in manual groups.

Bourne, et. al. (1997) in their paper examined the paradigms used in online learning, with a specific emphasis on how to effectively employ asynchronous learning networks (ALN) for the delivery of online courses. Recent progress in ALNs is presented, methodologies for getting started in creating an ALN course given and relationships between traditional teaching and learning methods and ALN-based courses discussed. To illustrate a specific ALN model, the paper presents a case study about the creation of an online course. The prospects for online education and the challenges that face the ALN field are considered.

3. RESEARCH METHODOLOGY

This qualitative research is undertaken as an empirical investigation to study the e-learning pattern of students in a multi-cultural environment. The objective of this research is to explore the dimensions of e-learning styles in terms of their demographic profile and academic performance and the determinants of their individual preferences. The methodology of conducting the research is discussed below:

Multi-stage Purposive sampling was adopted for the study due to the reason that the population is very high. In the first stage, Malaysia being one of the most preferred study destinations for students from various countries and also being a multi-ethnic, multicultural, and multilingual society was identified for the purpose of studying the students in such education environment. The population targeted for this study consisted of students belonging to multi-cultural background studying in Malaysia.

With a multi-ethnic population of over 32 million, Malaysia had 20 public universities, 53 private universities and six foreign university branch campuses; 403 active private colleges, 30 polytechnics and

73 public community colleges in 2016. (www.studymalaysia.com) These HEIs offer a wide range of tertiary qualifications at affordable prices to students from various cultural backgrounds. Two private universities in Malaysia were identified for the purpose of data collection namely City University Malaysia and Asia Pacific University of Technology and Innovation. Data was collected from a sample of 200 final year students enrolled in these two private universities who are exposed to both synchronous and asynchronous learning environment. The students were from both undergraduate and post graduate programmes belonging to different cultural backgrounds.

The research work is mainly based on primary data collected from the sample respondents by administering a questionnaire developed for the purpose. A structured questionnaire was designed to fulfill the research objectives and a pilot study was made to 25 respondents to pretest the research instrument, check the validity of the questions and to improve upon the study design prior to performance of the full-scale research project. After suitable modifications in the instrument, it was finalized as the data collection tool for this research. The first part of the questionnaire consisted of the respondents' personal information like their gender, nationality and religion. The second part of the questionnaire consisted of information regarding their current education. The third part consisted of questions relating to their preferred mode of e-learning – synchronous or asynchronous – and the reasons for the same.

An online questionnaire was framed with the survey questions and the same was mailed to the sample respondents during December 2019. The instrument was administered through mail to 240 respondents out of which, 187 responses were obtained which represented a very satisfactory response rate of 77.92 per cent. Out of the 187 questionnaires, 8 were ignored for lack of complete information. A sample size of 179 respondents was taken for the study.

4. ANALYSIS AND RESULTS

This part deals with the analysis and interpretation of the e-learning styles of the students in the two sample universities in Malaysia. Apart from defining the demographic characteristics and education profile of the students, the study also focuses on the preferred e-learning style and the determinants of the choice of their preference. Data was collected through a structured questionnaire from the respondents for this research study. The data collected from the respondents were coded and systematically analyzed and presented under various headings in the following pages. Appropriate statistical tools were applied based on the problem being studied and the results were presented. The tools and techniques used for the analysis are Percentage, Chi-Square test, Mean Score and Analysis of Variance (ANOVA).

The results of the analysis presented according to the methodological approach begin with the definition of the demographic variables of the respondents which will help to understand the characteristics of the respondents. The preliminary analysis revealed that majority of the respondents - 61.5 percent were female and the rest 38.5 percent were male. More than half of the sample respondents 58.1 percent were Malaysian; 24.6 percent were Chinese and 17.3 percent of them belonged to the category of others belonging to various African and Asian countries namely Libya, Egypt, Sudan, Chad, Nigeria, Ethiopia, Zambia, Iraq, Oman, Guinea, Indonesia. In terms of the religion adopted by the respondents 38.5 percent were Buddhists, 27.4 percent were Muslims, 17.3 percent were Christians and 16.8 percent were Hindus.

The second section of the questionnaire contained questions relating to the programme of study (under-graduate or post-graduate) and their branch of specialization. The frequency table revealed that 91.1 percent of the respondents were doing their under-graduate programme and 8.9 percent were in their post-graduate programme. With respect to their branch of specialization, 57.5 percent of the respondents were doing Accounting and Finance and 42.5 percent were into Business Administration.

This research was aimed at exploring the learning preferences namely synchronous learning otherwise termed as real time learning supported by videoconferencing and chat rooms and asynchronous

learning such as mails and offline discussion boards. The results of the data analysis revealed that 59.8 percent of the students preferred asynchronous learning and 40.2 percent preferred synchronous learning.

4.1: Association between Profile of the Respondents and Preferred E-learning Style

In order to further analyse the association of the profile of the respondents with their preferred e-learning style, crosstab analysis were conducted on the variables to determine which one of the variables influence the most. The following null hypothesis was framed to determine the relationship between the variables:

H₀₁: There was no significant association between the profile of the respondents and their preferred e-learning style.

It was evident from the analysis that Chi-square value was significant at 5 percent level of significance with respect to nationality ($p = 0.034$) and preferred e-learning style thereby rejecting the hypothesis. Therefore nationality was found to influence their preference of e-learning style. But with the rest of the variables such as gender ($p = 0.583$) and religion ($p = 0.192$), the chi-square values were not significant and therefore e-learning style was said to be independent of these variables.

The results of cross tabulation and analysis revealed that the Chi-square values representing the e-learning styles of the students was not significant with both the variables programme of study and branch of specialization accepting the hypothesis. In that case, these variables did not differentiate the e-learning styles of the students. In other words, the programme ($p = 0.403$) and specialization ($p = 0.172$) did not influence the students' preference over e-learning style i.e. synchronous or asynchronous mode of learning.

Performance measures are used to quantitatively assess the implementation and outcomes of educational systems in institutions. When properly defined, they can provide useful information on how well programmes are performing, whether educators are meeting their instructional goals and ultimately whether the students are able to attain the outcomes of the systems. Though there are various factors that determine the academic performance of the students, the mode content delivery and learning style is one important factor. In this context, the respondents being the final year students were asked to mention their academic performance in terms of CGPA. Out of the sample respondents, 55.9 percent scored an academic score of more than 3.1 and below 4; 40.8 percent scored more than 2.1 and less than 3; and the remaining 3.4 percent scored more than 1.1 and less than 2. None of the respondents scored below 1. Interestingly, the above analysis revealed that the Chi-square value is significant at 5 percent level of significance ($p = 0.03$) thereby rejecting the hypothesis. Hence the choice of e-learning styles – synchronous or asynchronous – was said to have an influence on the academic performance of the students.

4.2. Determinants of E-Learning Style

There may be plenty of factors that determine the type of e-learning pattern of the students whether synchronous or asynchronous. The respondents were asked in the third part of the questionnaire as to why did they prefer a particular style over the other. Statements were given on a five point scale as strongly agree, agree, neutral, disagree and strongly disagree. The students were asked to register their response and values were assigned as 2, 1, 0, -1 and -2 respectively with appropriate items reverse scored. The mean values of the variables are presented in the below table which explained the determinants of the choice of their e-learning style.

From the mean scores, it is evident that synchronous learners preferred this type of e-learning for the real time discussion (1.51) possibilities it offered, followed by immediate feedback (1.47), realtime collaboration (1.46), motivation to complete assignments (1.33) and better conceptual understanding

(1.29). Asynchronous learners preferred this type for the uninterrupted learning(1.36), followed by the opportunity to understand, (1.31), flexibility of time(1.30) and pace (1.30) and absence of any peer pressure (1.11).

4.3. Cognitive and Affective Factors

For the purpose of reducing the variables and bring out the underlying dimensions that determine each of the learning styles - synchronous and asynchronous, the responses to the factors determining learning styles were subjected to confirmatory factor analysis. The extraction method used for the analysis was principal component analysis and the rotation method was Varimax with Kaiser normalization. The rotation converged in 3 iterations. Initially the relationship between the variables and sampling adequacy were assessed. The Bartlett's test of sphericity indicated a significance level of .000 indicating that there was significant relationship among the variables. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy showed a value of 0.852 which was a highly satisfactory value indicating that the proportion of variance indicated in the variables may be caused by the underlying factors.

The extraction communalities also showed satisfactory values of more than 0.60 for all the variables which showed that the variables fit well into the factor solution. The total variance explained by the two factors by the rotated sum of squared loadings constituted of 91.08 per cent which was a satisfactory variance for further analysis. In order to identify the factors that meaningfully summarise the sets of closely related variables, Varimax rotation was performed. This was done to minimize the number of variables that have high loadings on a factor and enhance the interpretability of the factors. The rotated component matrix and the Cronbach alpha values to test the internal consistency of the variables. The confirmatory factor analysis resulted in extraction of two factors and they were named as cognitive and affective factors.

The **cognitive domain** contains learning skills predominantly related to mental (thinking) processes. Learning processes in the cognitive domain include a hierarchy of skills involving processing information, constructing understanding, applying knowledge, problem solving and research. Learning is not just as an intellectual or mental function. Attitudes and behaviors also influence learning. The **affective domain** involves our feelings, emotions and attitudes.

In **synchronous learning**, variables namely immediate feedback, real time discussion and collaboration were assigned under **cognitive factor** (mean score 0.996) and motivation to complete assignments and better conceptual understanding were assigned under **affective factor** (mean score 0.763). In **asynchronous learning**, variables namely flexible time, convenient pace and opportunity to understand were assigned under **cognitive factor** (mean score 1.171) and absence of pressure and uninterrupted learning were assigned under **affective factor** (mean score 1.120). In both categories of learners, it was evident from mean scores that cognitive factors were more influential than affective factors.

4.4. Differences in Factors influencing Learning Styles Multicultural Environment

This research was undertaken to explore the differences in the learning styles in multi-cultural environment. Numerous studies have addressed the learning styles as a primary point of investigation or as a secondary issue. A majority of these studies have suggested the general indicators such as demographic variables but in this research, the determinants of e-learning styles were categorized as cognitive and affective factors. The analysis of these variables will help the educationists in segmenting and serving the student community in a better way.

An attempt was made in this research to study the differences in the role of cognitive and affective factors which play in determining the e-learning styles of the respondents belonging to different nationality. This analysis was made for synchronous and asynchronous learners separately. For this purpose, the following hypothesis was framed to analyse the differences in the synchronous learners and Analysis of Variance (ANOVA) was performed:

H₀₂: There was no significant difference in the factors influencing learning styles among the synchronous learners belonging to different nationalities.

Table 1
Synchronous Learners – Differences in Factors influencing Learning Styles – ANOVA

Determinants of Learning Style	Nationality	F	Sig.
Cognitive Domain	Malaysian	28.095	.000*
	Chinese	6.488	.015*
	Others	14.232	.001*
Affective Domain	Malaysian	35.342	.000*
	Chinese	9.637	.003*
	Others	11.446	.002*

*Significant at 5 % Level of Significance

The results of ANOVA from the above table indicates that the f value was significant in all cases indicating that the hypothesis is rejected. There was significant difference in the factors influencing learning styles among the synchronous learners belonging to different nationalities both in the cognitive and affective domain.

Another hypothesis was framed to analyse the differences in the asynchronous learners and Analysis of Variance (ANOVA) was performed:

H₀₃: There is no significant difference in the factors influencing learning styles among the asynchronous learners belonging to different nationalities.

Table 2
Asynchronous Learners – Differences in Factors influencing Learning Styles - ANOVA

Determinants of Learning Style	Nationality	F	Sig.
Cognitive Domain	Malaysian	13.457	.000*
	Chinese	.008	.928
	Others	.588	.449
Affective Domain	Malaysian	6.533	.012*
	Chinese	.062	.805
	Others	.474	.497

*Significant at 5 % Level of Significance

The results of ANOVA from the above table indicates that the f value was not significant in all cases (except Malaysian Nationals) indicating that the hypothesis was accepted. There was no

significant difference in the factors influencing learning styles among the asynchronous learners belonging to China and other nationalities both in the cognitive and affective domain.

But in case of Malaysian nationals, the f value was found to be significant in both cognitive and affective domain and hence the hypothesis was rejected. This indicated that there was significant difference in the asynchronous learners belonging to Malaysia both in cognitive and affective domain.

5. RESULTS AND DISCUSSION

This research aimed at exploring the e-learning preferences and factors that determine their preferences in synchronous learning and asynchronous learning of students from a multi-cultural education environment confirm the results of earlier research in certain aspects. Surprisingly asynchronous learning environment was considered to be most preferred choice of the students in which around 60% preferred this type and only the rest of the sample respondents synchronous learning. Further analysis of the association of variables that determine the learning style preference indicated that nationality was found to influence their preferred learning style. The rest of the variables such as gender, religion, programme of study, their specialization did not have any association in determining their learning style. Interestingly the choice of their e-learning style – synchronous or asynchronous – was said to have an influence on the academic performance of the students.

The factors that determine the choice of preferred e-learning style indicated that in the order of importance, synchronous learners preferred this type of e-learning for the real time discussion possibilities it offered, followed by immediate feedback realtime collaboration, motivation to complete assignments and better conceptual understanding. Asynchronous learners preferred this type for the uninterrupted learning, followed by the opportunity to understand, flexibility of time, pace and absence of any peer pressure.

Throwing deeper insights into the factors determining preferred e-learning style and to explore the underlying dimensions, factor analysis resulted in two domains namely cognitive and affective domain. In synchronous learning, variables namely immediate feedback, real time discussion and collaboration were assigned under cognitive factor and motivation to complete assignments and better conceptual understanding were assigned under affective factor. In asynchronous learning, variables namely flexible time, convenient pace and opportunity to understand were assigned under cognitive factor and absence of pressure and uninterrupted learning were assigned under affective factor. On an overall basis, in both categories of learners, it was evident that cognitive factors were more influential than affective factors indicating that the respondents choose their learning based on rational thinking than emotional aspects.

But this research was undertaken in a multi-cultural society to explore any possible differences in the cognitive and affective factors and for this purpose, the synchronous learners and asynchronous learners were addressed separately. In the case of synchronous learners, there was found to be a significant difference in the factors influencing learning styles belonging to different nationalities both in the cognitive and affective domain. This indicated that in a multicultural society, there are differences in the cognitive and affective among different nationals and this issue has to be addressed while the educationists offer them courses.

There was found to be no significant difference in the factors influencing learning styles among the asynchronous learners belonging to China and other nationalities both in the cognitive and affective domain. But in case of Malaysian nationals, there was a significant difference in the asynchronous learners belonging to Malaysia both in cognitive and affective domain. Individual preferences may be considered based on their nationality while designing and offering e content.

6. CONCLUSION

This study provides some interesting insights regarding synchronous and asynchronous learning modes of students in a multi-cultural education environment. The findings of this study indicated that nationality is one key factor which could influence the e-learning choices which is to be considered in the implementation of synchronous vs. asynchronous modes. The results of the study could help the educationists to form heterogeneous groups, devise strategies that could suit the individual requirements of the students in such a society in order to serve them better by understanding the differences in their preferences. Such strategies could work in identifying individual choices based on nationalities and devising customized framework for each group instead of imposing similar ideologies on the entire student community as a whole.

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