Face-to-Face Tutorial, Learning Management System and WhatsApp Group: How Digital Immigrants Interact and Engage in E-learning?

[1] Ch'ng Lay Kee

[1] mousse2964@gmail.com, Universiti Sains Malaysia, Malaysia +6016-4211808

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ABSTRACT

The advancement of educational technology enables universities to provide various online courses to fit the needs of different learners. However, the question is – how do adult learners learn in this digital age, especially for those who had learned and developed their digital skills through experience and by self-exploring at their workplace? As such, a case study in Malaysia was conducted to examine learning experiences exhibited by middle-aged learners, also known as digital immigrants, in an e-learning environment. Fourteen new students from the first semester of a first-year programme in a private university, with ages ranging from 40–55 years, participated in the study. Face-to-face interviews were conducted and observations were performed in Learning Management System (LMS) and WhatsApp groups for a semester. This study has pointed out that the digital immigrants require human-to-human interaction in e-learning. The forming of virtual groups using the WhatsApp application is also very important to digital immigrants. Conclusively, blended learning mode in the e-learning environment which still allows interaction between humans is still the best choice for these digital immigrants, while technology is an alternative tool for the learners to complete their studies.

Keywords: Interaction, Engagement, WhatsApp, Learning Management System, E-learning

INTRODUCTION

In an e-learning environment, the learning experience obtained by the learner varies from one individual to the other. The learners will gain experience from three main aspects during their learning process in an e-learning environment. These three aspects consist of learning activities, engagement and interaction (McDonald, 2012). The learning activities in an e-learning environment include studying the learning materials, doing the exercises, completing the assignments and sitting for the examination. Having a computer with Internet access is essential for the learner in an e-learning environment. News and updates on the course will be communicated using the email service or through the online learning platform. Thus, the learners communicate and collaborate to perform their learning, share resources and information, access learning materials and references using the online platform provided by the university. Besides, the learners have the opportunity to take part in synchronous and asynchronous discussions in an e-learning environment

by attending the tutorial sessions as well as participate in the forum discussions in the online platform. The interaction with tutors or facilitators, peers and learning materials also play a part in the learning experience (Hascher, 2010). Learners can interact virtually with their tutors and peers through different ways, such as using the forum in the online platform, e-mails or text messages.

PROBLEM STATEMENT

In this technological era, many people have the opportunity to learn using different learning platforms with different technological tools. To ease the learning process, some institutions offer different kinds of e-learning platforms for working adults so that they can perform learning anytime and anywhere. The study provides a significant value to the education field of how these learners interact and engage in an e-learning environment. In addition, the literature gaps found in the adult learning theories which lack of discussion about the engagement and interaction in e-learning were also be addressed.

RESEARCH OBJECTIVES

The specific objectives are stated as follows:

i. To explore the extent to which the digital immigrants interact in learning activities in an e-learning environment.
ii. To explore the extent to which the digital immigrants engage in the learning activities in an e-learning environment.

LITERATURE REVIEW

Digital Immigrants and Technology

"Is it just that I'm getting older? I find myself having trouble keeping up with technology… I have been swamped with the choice and variety of technology." The interviewee continues to argue, "I can't possibly learn it all. Sometimes I feel like I can't even learn the ones that might actually be helpful to me." This is a claim done by Lohan (2015), a 56-year-old adult learning specialist. Today, the middle-aged adults are digital immigrants. The way they perceive technology is different as a digital native.

Many kinds of literature applauded the benefits of Web 2.0 in various learning occasions. However, there are hidden aspects concealed below the surface that are often ignored and have yet to be explored from the user for e-learning (Zakaria, 2013). To keep up with trends, digital immigrants nowadays are actively involved in performing day-to-day activities and learning using technology. On the other hand, older adults still lack confidence in using Internet applications. (Chung, Park, Wang, Fulk & McLaughlin 2010). But Tung's (2012) study found out that the digital immigrants seemed to see the usefulness of social networking tools and are more interested in using the tools for learning than digital natives even though they have less experience using the tools.

Digital Immigrants in E-learning

In the conventional educational system, teaching content is communicated by the presence of an instructor. With the advancement of technology and mass affordability of mobile devices, more learning opportunities have been created, thus providing a wide array of types of learning medium to people. The e-learning system has been developed and integrated into the educational process in most institutions (Sfenrianto & Suhartanto, 2011). Today, the distance education institutions are based on e-learning technique. The interpersonal communication is replaced by printed material, electronic communication and online forum.

Interaction of Digital Immigrants in E-learning

Interaction is part of the learning experience of adult learners. The interactions could be the interaction between the learners, tutors as well as with the learning materials (Moore & Kearsley, 2011). Abrami,

Bernard, Bures, Borokhovski and Tamin (2011) derived three types of interaction. They emphasised the importance of these interactions in e-learning environments with the use of technology.

However, Best and Conceição's (2017) study perceived that social media tools such as WhatsApp, Facebook and Skype help in communication but not the learning management system. The majority (84.6%) of respondents in is from the age group of 36–45 years, and they are female working adults. Earlier, Hrastinski (2008) has categorised the human and human interaction into asynchronous and synchronous. Likewise, Best and Conceição (2017) have also categorised the types of interaction into three main categories: the learner and learner interaction, learner and tutor interaction, and learner and content interaction.

The first type of interaction is student-student interaction. Student-student interaction in e-learning environment could be synchronous or asynchronous (Hrastinski, 2008). Asynchronous could be in a forum discussion or messaging while synchronous could be video-conferencing and chatting. Online collaboration tools foster the asynchronous interaction (Susilo, 2014).

The second type of interaction is a student-instructor interaction. Similar to the first type, this kind of interaction could also be in synchronous or asynchronous. Telephone consultation, video conferencing and instant chats physically in the tutorial session are synchronous while discussion through emails, forum posts and messaging could be asynchronous. Hrastinski (2008) claimed that students expected a quick response to solve less complicated issues that they have from face-to-face meetings. Whereas for complex issues, they go for asynchronous as they need time to reflect. Azizan (2010), Tayebinik and Puteh (2012), as well as Cela, Sicilia and Sánchez-Alonso (2016) emphasised the importance of learner-learner interaction in e-learning environments but did not highlight if it is virtual or physical. The finding of this study claimed that human to human interaction is important to digital immigrants. Correspondingly, Best and Conceição (2017) also found that the interaction between peers was ineffective in terms of problem-solving, even though they felt a sense of community in the learning management system. Lack of timely feedback from peers and tutor had resulted in the fact that the learners felt the uselessness of the online platform.

The third type of interaction described by Susilo (2014) is student-content interaction. Learning materials are the main components to facilitate learning (Best & Conceição, 2017). This refers to searching and learning materials online, studying the course materials and doing assignments. However, only 42.6% of the respondents in Best and Conceição's study (2017) claimed that they were satisfied with the online learning.

Engagement of Digital Immigrants in E-learning Environment

Rodgers (2008) proclaimed engagement affected the academic performance as well as the learning experience of the learners. Similarly to the study of Amoozegar, Daud, Mahmud and Jalil's (2017) on distance learning in Malaysia, they concluded that learners who are focused on learning, have high motivation and always seek for self-improvement are more likely to be involved in learning, encourage learner engagement, and produce a better academic performance. However, the way of engagement and the types of engagements were not clearly addressed by the studies.

Learning experience of the learners can be varied in different learning context. The learning activities as well as the way the learners interact and engage in learning environment could also be different. As such, by identifying and exploring the learning experiences of the learners, especially digital immigrants, the educators and researchers can understand in details of how digital immigrants interact and engage in different kinds of learning activities. The learning activities performed include participating in the face-to-face tutorials and learning management system, studying the course materials, completing the assignment and preparing for the examination.

RESEARCH METHOD

This study is conducted in a private open university in Malaysia. The university offers programmes in distance learning mode and uses the e-learning approach for its teaching and learning. This study employed a qualitative approach through interviews, tutorials and Learning Management System (LMS) and WhatsApp

group observations to understand how learners interact and engage in various learning activities in e-learning environments, thoroughly. The data was collected during an academic semester of July 2016 from two semi-structured interviews. The NVivo software was used to analyse the text-based data.

Research Participants

Fourteen middle-aged adult learners; two males and 12 females, were selected based on their voluntarism to participate in this study. There were all working adults aged 40 years old and above. There was no force participation in this research and the participants were allowed to withdraw at any point in time. The selecting criteria for the research participants are:

1. The learner who has not received any formal or informal computer-literacy training during their primary and secondary education.
2. The learner must be in his or her first semester at the university.
3. The learner who does not have any experience in an e-learning environment before joining the university.

Research Site and Its Educational Models

The setting for this study is an open and distance e-learning themed qualitative case study based on a Malaysian higher education institution. Technology plays an important role in the e-learning environment and open distance learning is one of the kinds of learning which is based on e-learning techniques. In this context, the concept of 'open' means the learning opportunity is open to anyone regardless of age, qualification or ethnic group. On the other hand, 'distance' in this context has a spatial and time dimension (Tan, Fan & Emmanuel, 2007). The learning process can take place anytime, anywhere. However, the distance between the learners and the learning has been shortened with the availability of technology. The mode of communication is replaced by technology such as online self-instructional learning materials, electronic communication, teleconference, audio, video and online communication (Tan, Fan & Emmanuel, 2007). In short, the unique nature of the e-learning environment for this study has resulted in curtailed characteristics stated below (Tan, Fan and Emmanuel, 2007).

1. Separation of teacher and learner – Learners will only have the opportunity to meet teachers once a month per semester. In cases where tutorials are conducted through teleconferencing, learners who do not participate in a session will be able to refer to the uploaded materials in the learning management system, hence conduct self-managed learning.
2. Self-managed learning – learners have to organise their own learning and look for learning resources either online or from the library. They can perform e-learning regardless of time and place where the knowledge is delivered to the learners just-in-time, when they need it.
3. Two-way communication – learners and tutors are allowed to interact using electronic communication tools via a learning management system. This system can be used by learners to communicate and collaborate their learning, share resources and information, as well as access the learning materials and references; anytime, anywhere.
4. Synchronous and asynchronous learning – teaching and learning may take place simultaneously or at different times. A face-to-face tutorial provides an opportunity for learners to interact with the tutor and friends through active discussion in the tutorials. Learners can also perform self-learning online.

The delivery of teaching relies heavily on technology. Moreover, learners will be able to tailor their own learning styles in such a learning environment. In Tung's (2012) study, learners felt enjoyed and less anxiety when the course content in LMS are well-structured and organised. As such, the learners are self-guided and more independent in their learning.

Research Procedure

When the semester began, the first interview was conducted in the first two months. The second interview was conducted at the sixth month or after the end of the semester. The observation was done over five tutorials which were conducted once a month at the main campus of the university. This is to track the interaction and engagement of the participants with tutor and peers in the tutorial class. Meanwhile, the activities performed by the participants in the learning management systems and WhatsApp group chat were also monitored and observed daily throughout the semester.

In this study, the researcher is the primary instrument in collecting the data. The researcher used interview questions, the weekly emotion journals of the learners and field notes which were recorded during the process of site observation, as the research tools to help the researcher in gathering data.

Interview Questions

For the two formal interview sessions, a list of interview questions with open-ended questions has been prepared. There are three sections in the first interview. The first section of the interview questions consists of questions regarding the participants' actual experiences in an e-learning environment. The researcher understood more about the two kinds of interaction, namely human-to-human and human-to-technology interactions, which the participants are experiencing in the course. The second interview addressed the ideas that come out from the first round of interviews. It started with the discussion of the events that have happened in the course since the first interview.

Observations

The observation was practised in this study and field notes were taken. The field notes were used to describe the participants' behaviour in a specific setting – in the tutorial class and in the learning management system. In this study, the researcher was an observer as a participant stance, where the researcher does not take part in any activity in the group, but the status as a researcher is known by the participants. Then, field notes were taken to record the observations by the researcher throughout the semesters in the tutorial and learning management system.

DATA ANALYSIS

Thematic analysis is a method used for identifying, analysing and reporting patterns or themes within a set of data (Suter, 2011). Figure 1 shows the steps in the thematic data analysis process.

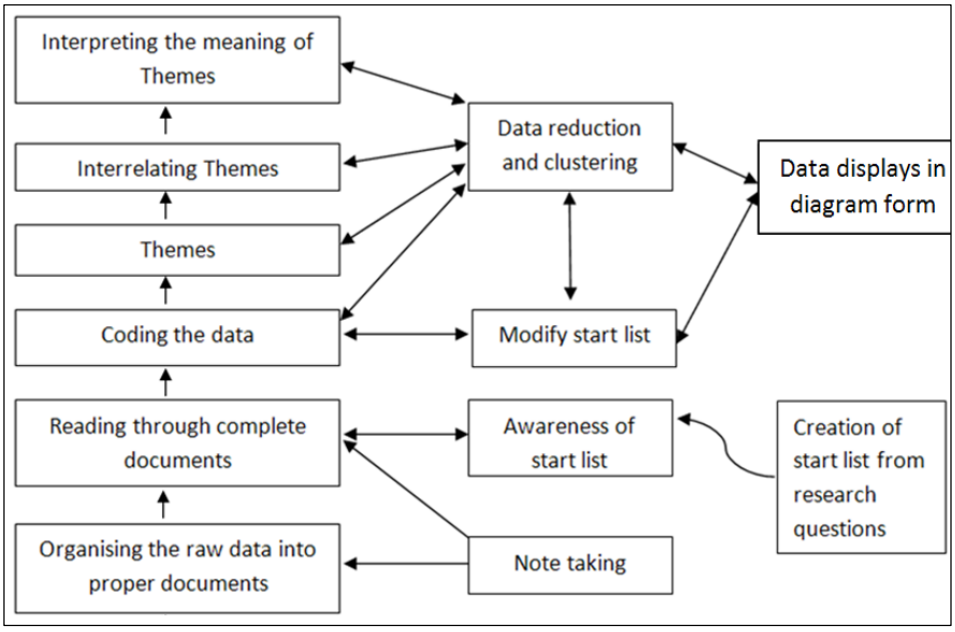

Figure 1. The steps of using thematic analysis
(Adapted from Cresswell, 2009)

The themes generated were able to provide an in-depth understanding of the digital immigrants' learning experiences in terms of interaction and engagement in an e-learning environment. The data collected from the interview transcripts, field notes and observations were analysed, classified and categorised. All of the interview transcripts were read to offer a detailed review and the emerging patterns of data were discovered.

The interview transcripts were read for the first round, whilst the filed notes and observations were written in the margin of the transcript. On the second round, notes and comments were written with regards to interesting data that are relevant to develop a general understanding of what was missing from the participant. After that, a preliminary list of emergent categories was made, into which the notes and comments were grouped and developed. This process was repeated until all the data had been analysed. Once the categories are satisfied, the data were fractured into meaning units that were assigned to each category. All the categories were arranged and re-arranged many times until a coherent pattern emerges. This was better providing an interconnected relationship of the patterns formed (Suter, 2011).

RELIABILITY AND VALIDITY

Reliability in qualitative research refers to exact replicability of the processes and the results (Leung, 2015). Thus, the reliability of a case study could be increased by creating a case study database (Yin, 2009). A shared database was created for this case study during the data analysis process with the experts who performed the checking and reviewing on the coding during the data analysis process. The computer files consisted of the recorded interview, interview transcripts, WhatsApp documents and assignments from participants. Other than the documents from participants, researcher's notes that resulted from the interviews, observation and document analysis are also stored in the case study database. These raw data are made available for the new investigators for independent inspection.

The reliability of the information in a case study is increased by maintaining a chain of evidence. The theses' findings are using proper citing the documents, interviews and observations. The time and place of participants' interviews are properly recorded and stored in the database. The data collection had followed the research procedures stipulated in the protocol. The research protocol and the research instrument have been approved by JEPeM-USM (Jawatankuasa Etika Penyelidikan Manusia Universiti Sains Malaysia).

By using multiple sources of evidence with all triangulating on the research questions, the construct validity of a study can be enhanced as it provides multiple measures of the same phenomenon (Yin, 2009). This study is conducted by collecting data from different sources, namely participants' interviews, tutorial class observations, LMS observations and WhatsApp group observations. The data was then accessed, cross-checked and reviewed by three experts during the process analysis.

Descriptive validity refers to the accuracy of the reported descriptive information (Yin, 2009). Each interview was recorded. Later, the interviews were transcribed verbatim. A copy of transcribed transcripts was given and checked by the respondents. Clarifications and amendments on the responses were made in the softcopy. This is to ensure that the information provided by the participants is accurate and they were agreed with the interpretation of the study (Jacob & Furgerson, 2012). At the same time, notes were taken during the interview by the researcher. This also ensured that the notes compiled during the interviews reflected the information provided by the respondents accurately.

FINDINGS

Interaction

Instead of categorising the interaction observed into three main groups, which are interaction with peers, tutors and learning materials, this study grouped the interactions into two main categories. They are virtual interaction and physical interaction. Virtual interaction using technology is still preferable and prioritise by digital immigrants. The discussion of each interaction is as follows.

Physical Interaction

Some participants requested physical interaction with peers. For example, S5 prefers face-to-face interaction with peers as they were able to provide immediate responses and discussed the problems they faced, as well as exchanged ideas. However, he did not ask his peers about the problems that he faced in learning as he did not want to trouble them. So, he looked for an easier way, which was to get the solution from the Internet. S5 also preferred face-to-face interaction with peers as he claimed that he was able to obtain immediate responses from these conversations. At the beginning of the semester, S5 actively engaged with the assignment discussion group and met up twice with S14 and S7. However, due to time constraints, this interaction was replaced by technology.

S13 viewed that human interaction was a two-way thing but with technology, it was only one way, *"You go to search then anything you can get"* (S13/Interview 1). S13 affirmed that learning, for her, could continue without peers, but she still required the Internet to perform her studies. Likewise, S14 claimed that she could not deny the helpfulness of technology in terms of cost and time savviness, and convenience in obtaining updated information. She admitted that looking for information using technology would be faster than asking someone (S14/Interview 2). However, she claimed that the messages could not be conveyed clearly by some technological tools (S14/Interview 2).

Eleven participants printed their course materials while only three did not print any materials out. Interaction with learning materials is not only limited to course materials that the university provided in PDF form, but it also included the online materials. Some participants still preferred to seek information from someone rather than depend on technology.

Virtual Interaction

It has been found that the interaction with peers, tutors and learning materials virtually are equally significant as interaction with them physically in an e-learning environment. Among the three types of interaction, participants less likely interact with tutor either virtually too. The interaction with peers happened with the use of technology.

It was observed that right after orientation and before the first tutorial, learners were slowly being added into the WhatsApp group chat from the LMS forum. Some participants claimed that they were able to chat freely in the WhatsApp group chat even though they did not have much interaction during the face-to-face sessions. This is because the participants only met during tutorials or during the day of the examination. It is interesting to find that some participants may not even know if their peers in the group chat were similar to those in the tutorials. They claimed that they have a group of peers who interact virtually and another group of peers who interact physically during the face-to-face sessions.

By using technology to communicate with peers, S5 claimed that discussions were recorded and could be reviewed anytime, whenever needed (S5/Assignment). In terms of interaction with peers, S8 also preferred prompt responses; he described the questions as food and should be *"serve it when hot"*. If not, once the feeling of urgency disappeared, then he was no longer interested in learning about it (S8/Interview 1). S9 claimed that technology allowed her to do many things conveniently but she felt that it lost a personal touch (S9/Interview 1). Thus, participation in the group discussions and interaction with peers were needed in the learning process.

In addition, the interaction with learning content was connected with the use of technology in the self-learning. As such, for self-learning, participants mainly depended on the available technological tools such as smartphones, tablets or computers. These tools helped them to look-up information they needed to learn. For S1, learning in this technological era allowed someone who had forgotten about something to simply search for it online. Furthermore, even though S12 had difficulty in searching and understanding the text, she still affirmed that technology had helped her a lot with learning (S12/Interview 2) before approaching her peers for a more detailed explanation that technology could not provide. Likewise, S5 replied that all busy learners required technology to help them as it shortened their learning time (S5/Interview 2).

Engagement

The participants engaged in the learning management system, WhatsApp group chats and face-to-face tutorials. Each of the engagement is discussed as follows.

Engagement in LMS

There were two communication platforms that the participants engaged in. One is the LMS which was offered by the University and another was the WhatsApp group chat which was created by the students of the course.

The learners did not participate actively in the forum and just downloaded course materials and obtained updates from the LMS. S1, S2, S7, S8 and S10 did not post any messages in the forum for the entire semester. Some participants posted a few queries about the assignments. These included the request for the assignments' cover template (S3/30 July 2016, 5:43 pm), and seeking advice for wrong file submissions (S4/30 August 2016, 12:47 pm, Forum post; S13/9 September 2016, 9:53 pm; S14/30 August 2016, 3:48 pm, Forum post). S5 sought for guidance on citations (S5/11 August 2016, 12:15 am, Forum post). Additionally, S12 requested for the tutor to post the tutorial slides on the forum (S12/15 September 2016, 10:18 am).

On the other hand, S11, S12, S13 and S14 posted on the LMS requesting to join the WhatsApp group chat. The rest of the posts in the forum were general replies such as *"thank you"* and *"noted",* corresponding to the Course Coordinator or tutor's posts.

The peak hours of participants' login times were between 1–2pm and 5–6pm, followed by 8–9am, 10–11am and 9–10pm. Logins were the least during midnight and between 7–8pm. August and November had the highest numbers of logins at 101 and 95 counts respectively. July and December had the lowest numbers of logins, at just 36 and 34. Obviously, the semester had just started at the beginning of July, and examinations ended in the first week of December. 63 counts were found in the month of September and October. Tuesdays, Fridays and Sundays were the most favourite login days among participants. The following diagram shows the WhatsApp group chat messages and forum posts by days and months.

From Figure 2, the data of S14 is excluded because the number of WhatsApp messages she posted was extremely high compared to other participants. As such, both y-axes in the two graphs on the left indicated the number of WhatsApp group chat messages posted by S14, whereas the y-axes in the two graphs on the right were the numbers shown for other participants.

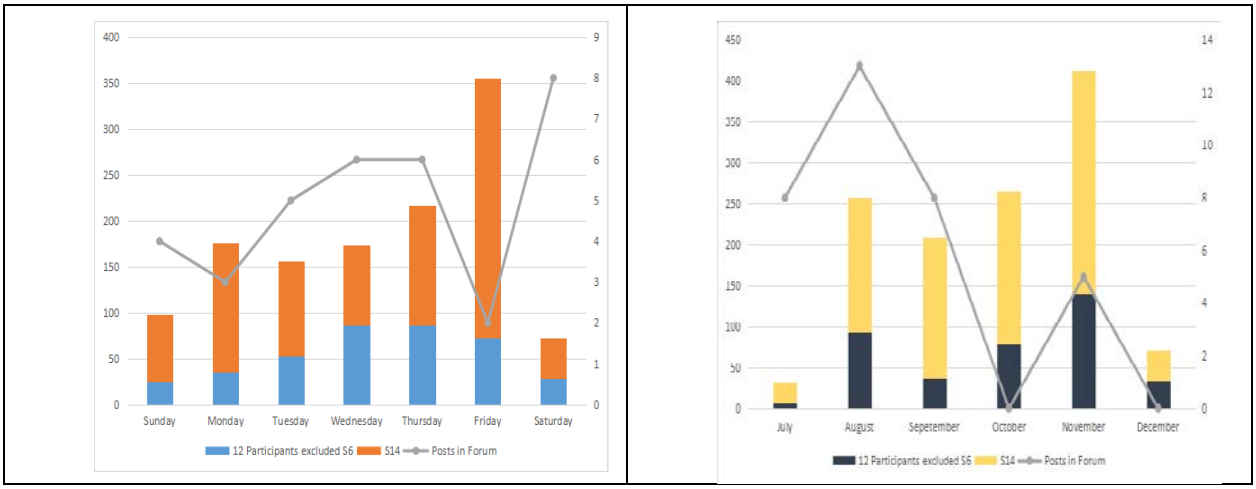

Figure 2. WhatsApp group chat messages (bar charts) and forum posts (line graphs) by days (left) and months (right).

It was found that participants were more active in the WhatsApp group chat than in the LMS forum. Most participants did not interact with peers and 'be there' to obtain information. When asked about the low participation in the LMS, the participants had the following feedback:

"Not much information"

S1 claimed that in the forum, there was not much information from the LMS, even though the tutor provided some resources; but she still wanted to look for other information to strengthen her understanding (S1/Interview 2). S3 explained, *"I make the effort to log in there, but nothing much. The effort is not equivalent to the result that I get. Thus, it drained my effort to log in every week or every day, because nothing much to expect"* (S3/Interview 2). S6 uttered that if the responses in the forum were quick and contained a lot of

information, naturally students will want to participate more actively in the forum (S6/Interview 1). S11 lamented, *"Sometimes, you go on LMS, open, nothing at all"* and these factors reduced the eagerness to log into the platform (S11/Interview 2).

"Too complicated and many unimportant posts"

S8 and S9 lamented that the LMS contained too many resources (S8/Interview 2; S9/Interview 2). According to S8, other than the course coordinator and tutor's posts, the other posts were "*not helpful"* and *"meaningless"* (S8/Interview 1). Additionally, S8 claimed that he did not enjoy the forum discussions at all because the login steps to LMS were very tedious, and he preferred something simple (S8/Interview 1). S9 claimed that students were asking common questions that she was not interested in and she always skipped those parts (S9/Interview 2). This resulted in her not logging into LMS frequently.

"I just want to observe"

S4, S8, S9, S10 and S13 wanted to be an observer in LMS. They logged into LMS just to get any updates and the latest information from the tutor or course coordinator. As stated by S4, she claimed, "*I just look at their conversation, yeah actually from the comments you get everything*" (S4/Interview 1). For S13, LMS for her is a platform to look for resources and not interact with peers. For S10, LMS just served as a platform to download course materials (S10/Interview 2). Besides that, there are other comments on not participating actively in the LMS forum. S9 asserted that she did not want to use the LMS platform to interact with peers or the tutor because she had to wait for their replies and that she could not really express herself very well in writing, so she would prefer to ask the tutor directly in class (S9/Interview 2). S2 replied, *"Some* [of them] *don't know how to use the forums, either that or they don't know how to ask,"* (S2/Interview 2) in response to the low participation in the forum.

Other than the comments posted above, some participants claimed that the LMS is a formal learning platform (S1/Interview 2; S12/Interview 2). It was still a better platform to get updates and download resources from the tutor and course coordinator (S2/Interview 2). Some participants described that they still prefer the LMS over WhatsApp. The following are their feedback.

"It is still a formal learning platform"

S4 described the LMS as, *"Another part of the engine where I can get everything I need*" (S4/Interview 1). S5 prefers the simpler design of the LMS. He affirmed, *"LMS has more related information,"* (S5/Interview 2) and that it included the involvement of the course coordinator and tutor (S5/Field notes/Week 9). He added, *"All the questions* [are labelled] *with proper title, easy to review and no need to go through all conversation compare with WhatsApp"* (S5/Field notes/Week 9). S6 had a similar point of view with S5 (S6/Interview 1) and she still believed that the main reliable source to get information from was from the tutor, while the WhatsApp group chat only included references (S6/Field notes/Week 9).

Initially, S7 lamented that the site was piled up with a lot of information and there was no step-by-step guide to guide her clearly (S7/Interview 1) and the LMS was quite *"messy"* and she got confused about how to view the posts made by other participants (S7/Field notes/Week 9). After getting used to it, she found that the LMS contained more learning materials and details, whereas the function of the WhatsApp group chat function was only to chat with other participants (S7/ Field notes /Week 9).

Engagement on WhatsApp Group Chats

The WhatsApp group is not a formal communication platform provided by the university. Thus, the researcher only obtained the information about the WhatsApp groups formed in the first two weeks at the beginning of the semester. There were three WhatsApp group chats being observed for this study. The purpose of using WhatsApp by participants are different. The WhatsApp group chats were most active in November, before the examination period, followed by August and October. It was found that S14 was extremely active in the groups compared to the others. She created two groups. A total of 860 messages were posted by her in the WhatsApp group chats. On the other hand, S6 was just an observer in the WhatsApp group chats and did not get involved in any of the discussions during the entire semester. She claimed that she preferred to chat with her peers individually instead of asking in the WhatsApp chat group (S6/Interview 2).

The topics of the messages found in the WhatsApp group chats ranged from irrelevant topics from chats with peers and discussions about non-learning topics, to learning-related topics such as queries about assignments, encouraging peers, sharing general information about courses and updates on the university and sharing personal experiences from the past. Out of 1,252 messages which were traced, only 612 (48.9%) messages were learning-related messages. Figure 3 shows the learning-related messages that were posted by participants in the WhatsApp groups. TMA is Tutor-Marked Assignment and it is the term used in the university.

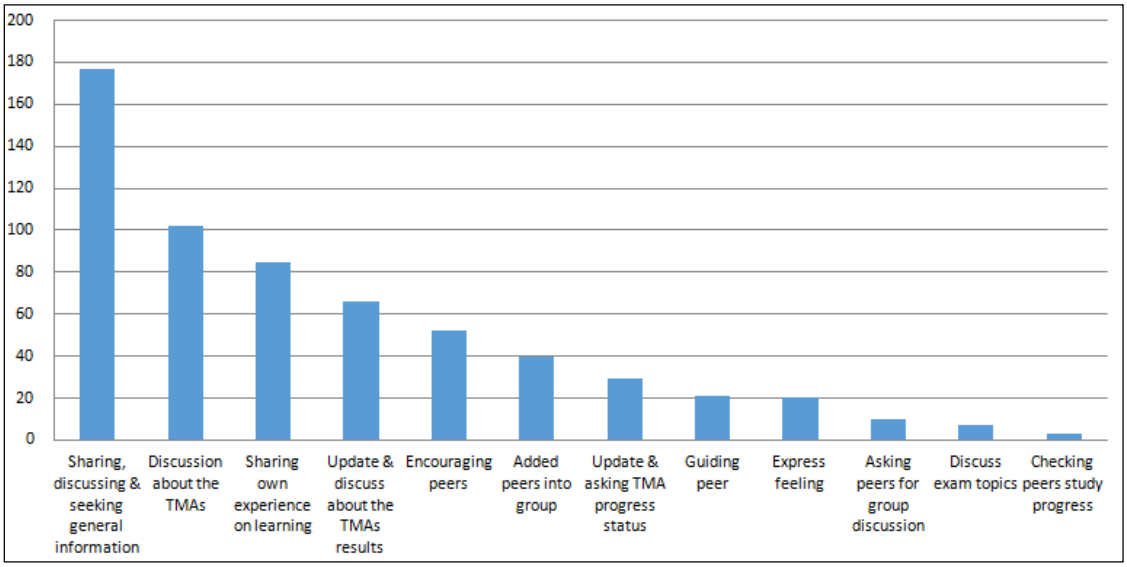

Figure 3. The learning-related messages posted by participants in the WhatsApp group chats.

The examples below show the messages posted by the participants:

1. Sharing, discussing & seeking general information (Total of 177 messages)

S14: "*Where to get the programme structure?"*

S2: "*They say our exam notification slips are available at student portal and we have to print it, where does it located?"*

S5: "*I have done enroll my course this morning. Only unable print receipt, but use print screen to keep the record."*

2. Discussion about the assignments (Total of 102 messages)

S2: "*Is it suppose to be point form for each answer or in essay???"*

S4: *"How to add in Turnitin report?"*

S10: *"Can give example of citation writing? Is it like 'According to David, 2009,_____?'"*

3. Sharing own experiences in learning (Total of 85 messages)

S9: *"I write all in my own word"*

S14: "*I also doing hard to strengthen my English"*

S14: *"I email tutor to get her advice"*

4. Update and discussion on the assignments results (Total of 66 messages)

S2: *"I got an A for learning skills ☺☺"*

S3: *"Hey everyone... We got the marks... What did all of you got"*

S14: *"My first assignment I get 93, if I can get 80 meaning that I can get grade B?"*

It was found that forming WhatsApp group chats for courses seemed to be a popular trend among these university students. Some participants were fonder of using the WhatsApp group chats to

communicate and interact with their peers but some participants had some dissatisfactions when using the WhatsApp group chats for their learning. However, at the same time, they liked and disliked using the WhatsApp group chats. The following shows the feedback from participants who preferred using the WhatsApp group chats for their learning.

"Speedy response"

S2, S4, S5, S8, S9, S10 and S14 pointed out that the response speed in the WhatsApp group chats was much faster than in the forum and they preferred to receive prompt messages. S4, S8, S11 and S12 lamented that the LMS login required a few steps (S4/Interview 2; S8/Interview 1; S11/Interview 2).

"Peers in the group are my motivators"

S12 and S14 claimed that the messages in the WhatsApp group chats served as a motivator as well as a reminder for her to complete the tasks (S12/Interview 1). S6 experienced positive peer pressure from the WhatsApp group chats when she knew about her peers' assignments and study progression (S6/Interview 2) and she had to keep up with them. These are the motivators for her to start revising earlier. S11 also claimed that peers were her motivating factors (S11/Interview 2) and added, *"We really need each other so much that we share our feelings and thoughts… at times we give encouragement to those who are down and upset never to give up*" (S11/Interview 2).

"They share all the updates"

S10 claimed that some peers were willing to teach and answer other peers' queries in the group especially for the questions that they were unclear about (S10/Interview 2). S10 also claimed that she had more ideas for her assignments through the discussions. Other than that, some people may also share updates on the WhatsApp group chats, such as the announcement from the tutor or course coordinator, so that they do not all need to log into the LMS to get the same piece of information (S10/Interview 2). The same goes for S11 and S14 who claimed that peer interaction in the WhatsApp group chats allowed them to talk more about how to solve problems faced in the assignments and discuss possible exam topics. S11 concluded that the LMS provided learning-related information with all relevant notes and slides, whereas the WhatsApp group chats were important in terms of sharing ideas and doubts (S11/Interview 2).

"Not all the conversation was learning-related, but it was helpful sometimes"

At the beginning of the semester, S1 said that she did not like to study alone and disliked online group discussions. She felt that it was troublesome to scroll and read the lengthy WhatsApp group chat messages. She said, *"You have to scroll scroll read read read,* (to find) *is it related? Is it not related? Have to go through and then if you ask then maybe your answers is not answered yet… I don't so into…I rarely scroll WhatsApp"* (S1/Interview 1). At the end of the semester, she realised the helpfulness of participating in the group. She said, *"To find something I don't know where, when mostly the group help me a lot… Few of us in the WhatsApp chat group still actively discuss questions through chat group and help one another"* (S1/Interview 2). The same happened to S12. Initially, S12 grumbled, *"Why got a lots of messages"* from the WhatsApp group chats but in the end, she felt that it was an information bank (S12/Interview 1). Same with S13, who also felt annoyed when there were too many messages, but she was thankful for them in the end as they were helpful in her learning (S13/Interview 2).

S5 complained that the WhatsApp group chats contained too much gossip. It was a waste of time for him to read all the messages when a majority of the messages were not learning-related (S5/Interview 1). However, in terms of the speed of responses, the WhatsApp group chats were faster (S5/Interview 2). S6 and S7 also lamented that irrelevant messages were posted by others in the WhatsApp group chats. As such, S6 occasionally deleted the messages and selectively kept the important ones (S6/Interview 1). On the other hand, S7 skipped reading any irrelevant messages and only searched for the relevant ones which she claimed was quite troublesome and time-consuming (S7/Interview 2). However, both pointed out that the others sometimes posted questions or problems that they had never thought of, and the group also provided the answers to these problems raised by the others (S6/Interview 1; S7/Interview 1) which were quite helpful to them.

"Did we discuss it correctly?"

Some participants had doubts about the information that was posted in the WhatsApp group chats and questioned if all the information was truly reliable. By reading the messages in the WhatsApp group chats, S11 claimed that the peers shared information and tips from other tutors in different centres which were very helpful (S11/Interview 1). It was helpful even though some answers that were shared by the peers may not be correct or left unanswered (S13/Interview 2). This concern was also raised by S8 as he found that some of the suggested answers given by peers were incorrect because he had to personally research the answers (S8/Interview 1).

"Interacting physically is better than virtually"

S1, S2, S3, S4, S5, S6, S8, S10 and S14 claimed that a face-to-face study group was better for learning. However, it was very difficult to meet with peers at a time which was convenient for everyone and that no one was keen to form a group. Thus, the learning mainly consisted of self-learning. This was also the reason why they preferred using the WhatsApp group chats to interact with peers.

"I can express better when talking face-to-face"

Some participants claimed that they expressed better when communicating face-to-face. S2, S7 and S11 preferred communicating with peers face-to-face, as they were able to gauge people's expressions (S2/Interview 1; S7/Interview 2; S11/Interview 2). S7 believed that issues can easily be solved when people interact and communicate face-to-face (S7/Interview 2). S3 claimed that it was much easier and better to express one's thoughts when interacting face-to-face (S3/Interview 1). S8, S9 and S13 claimed that they could not really express themselves and the intended meanings very well in writing (S8/Interview 1; S9/Interview 2; S13/Interview 1). S10 prefers face-to-face interactions and claimed that she may not understand what the other person is saying through the phone or by email (S10/Interview 2). As claimed by S11, *"Sometimes they don't understand what you are saying, and they really can't help you"* (S11/Interview 2).

Engagement in Face-to-face Tutorials

There were two main activities that were carried out during the tutorials – tutor lecturing and group discussions. Most of the time, participants sat calmly and listened quietly to the lecture. They become slightly active during the group discussions, especially in the last two tutorials. The face-to-face tutorials were not made compulsory for students in the University. Thus, the turn-up rate was around 50% of the total enrolled students. The participants in this research attended all tutorials except for S2, S4 and S13 who missed one class due to personal reasons. During the tutorials, participants usually sat alone and had fewer interactions with others. The atmosphere in Class 1, Class 2 and Class 3 was more peaceful and quiet, whereas the Class 4 was slightly bigger with more participants and thus, the interactions with the tutor were slightly higher. In general, interaction among peers was higher than with the tutor in the face-to-face tutorial classes. Participants were more active when interacting with the tutor, except for when the tutor was asking questions.

Participants were more expressive in group discussions. Participants enjoyed interacting and talking with the others and the atmosphere was not as quiet as during the first tutorial. Also, there was always one or two outspoken participants in a group. These consisted mostly of the elderly participants, especially women. After the discussion, learners happened to be more active when expressing their opinions and were not as quiet as before. S3, S8 and S10 claimed that they learned better through discussions (S3/Interview 1; S8/Interview 1; S10/Interview 2). Then again, S8 claimed that he had difficulty communicating with other learners. He did not agree that this was due to an *"age gap"* between him and others but claimed that it was due to individual characteristics (S8/Interview 1).

"2-hour classes for each month is too little"

Tutorials were held once a month, with 5 classes every semester. The duration of each tutorial was 2 hours. S6, S8 and S14 lamented that two-hour classes held in each month were too few for them. They further criticised that the tutor was always rushing when discussing the focus for the exam and assignments (S6/Interview 1) and had no time for the question and answer sessions (S14/Interview 2). S8 commented that the information given by the tutor was not enough due to the time limitation (S8/Interview 2). S13

lamented that if she had a question, she would have to wait for the next month before she was able to ask and complained that the tutor always gave excuses that he/she could not explain further due to time limitations. In addition, she also uttered that she had no time to talk with her peers (S13/Interview 1).

DISCUSSION

Interaction in E-learning

Most of the time, digital immigrants connect with their peers and educators through technology (Moore & Kearsley, 2011). Although human-interaction is low, they were connected through the Internet.

Interactions with Peers and Tutors

Similarly, in a typical classroom, interaction with tutors are just limited to a question and answer session (Silva & Gimenez, 2019) as some digital immigrants still panicked when interacting with the tutors. Most of the time, the digital immigrants interacted more with their peers compared to the tutors, either in the classroom or in the virtual group. There was no issue about the age gap during peer interaction. Nonetheless, digital immigrants tend to join groups with similar ages as there is a sense of security derived from this similarity. This phenomenon could not be seen in the virtual group because the identity or background of each learner was not revealed in the virtual group.

Digital immigrants had some concerns when they needed to use technology to contact their tutors to ask about the issues faced. They could not see the tutor's expressions nor feel the tutor's emotions. Emotions and messages could be interpreted wrongly due to individual perceptions and emotions when using technology. As suggested by Silva and Gimenez (2019), most digital immigrants still prefer face-to-face communication.

On the online learning platform, LMS, digital immigrants chose to be observers rather than actively participate in online discussions. This was because they were weak in writing. They found it difficult to express themselves through words. So, they remained inactive most of the time. As such, to digital immigrants, interacting with humans using technology and words cannot really clearly express what they want to. The same occurred during the tutorials. Most digital immigrants claimed that their peers had asked the questions that they intended to ask, so they remained silent unless asked by the tutor. Salmi (2013) claimed interaction was not necessary if assignments and instructions were clearly formulated.

Learning is a two-way process. The same goes for interaction and communication. Two-way communication is needed so that learners can communicate smoothly with each other and with their tutors (Moore & Kearsley, 2011; Salmi, 2013). In other words, participation leads to communication. If there is no participation, communication does not exist. Active participation was observed during the face-to-face tutorials rather than on the formal platform, LMS. To the digital immigrants, they can only interact actively face-to-face, whereas technology only serves as an information searching tool. So, time should be given for peers to interact with each other before the start of each tutorial since they only meet once a month. This time given to the learners could be used as a networking and bonding time for the digital immigrants as they would not have spare time for this outside the classroom.

Interaction with Course Materials

It can be seen that there were many participants who still printed their learning materials (Prensky, 2012) because some may prefer the feel and touch of the materials as the physical books feel real. Furthermore, points can be easily highlighted with just a grab of a highlighter and it is not as troublesome as a mobile device or technological tools to study. In short, the convenience of printed learning materials varies among the learners as some may think that, "With a highlighter and my printed materials, I can read anywhere and anytime," while for others, "I can read anywhere and anytime too as long as I have my technological device." These statements show that there are two different preferences. As such, the study emphasises that it is an obligation of the HEI to provide more variety and flexibility of choices for the adult learners so that they may pick and choose the one that best fits them in such e-learning environments.

Engagement in E-learning

Engagement in LMS

The Learning Management System (LMS) was the official platform used by the University to convey important messages and provide an interactive platform to its students. From the findings by Rahman, Ghazali and Ismail (2010) in one of the open universities in Malaysia, they claimed that the learning management system is used effectively by students regardless of their backgrounds and computer literacy level. However, this study shows minimum utilisation of the learning management system in the university, by those digital immigrants. The digital immigrants did not participate in the forum actively. Instead, they would rather choose to have their discussions by creating their own WhatsApp groups. An interesting phenomenon seen here is that the students used the forum in the LMS to ask their peers to create another discussion platform outside the prepared platform.

Clearly, digital immigrants seem to have their own perspectives and preferences in using both platforms. To them, the LMS is a formal learning platform where only learning-related topics should be discussed while the WhatsApp groups do not involve the tutors and course coordinators. As such, they feel more at ease to chat in the WhatsApp groups which play a less formal role than the LMS. Furthermore, the LMS had no pull factor for students' engagement as tutors just gave updates and information on the LMS. Other than this, they just observed others who posted questions and how the tutors replied. This was also considered as another part of learning.

Engagement on WhatsApp

Many digital immigrants took the initiative to form and join the WhatsApp community for every course. Through social network learning, they had the freedom to choose and develop relationships with their peers virtually and create personalised learning and sharing communities (Tung 2012). WhatsApp groups form another learning community. Some digital immigrants chose to join only one group while others chose to join as many as they came across. It was based on individuals' preferences. Hicks and Graber (2010) claimed that learners' conversations on social network learning were able to help them overcome a sense of loneliness and also develop their sense of self-control during their learning process. This can be shown by several digital immigrants' feedback who stated that the messages in the WhatsApp groups were useful and made them more aware of their assignments as well as their learning progression. However, Tung (2012) pointed out that learners tend to focus on the people rather than just the learning content. Though, from the findings, it can be seen that the digital immigrants focused on achieving a mutual goal, which was to complete the course successfully at the end of the semester. They did not know the identity of their peers, such as gender, age, as well as background. They answered each other's queries. They tolerated irrelevant messages by remaining in the group just to get updates and the latest information. After completing the course, they immediately left the group and formed a new group for a new course. They are like 'virtual nomads'. The learning community no longer fixed themselves to a permanent group in such a flexible e-learning environment.

In short, social media platforms such as WhatsApp and Facebook are no longer applicable only to social networking; in fact, it helps in disseminating learning-related information. They are the fastest in receiving and responding to messages compared with the learning management platform in which logging in and replying may take up more time. In addition, encouragement from peers is one of the factors that could facilitate the e-learning process (Jasim et al., 2015). As such, a typical perspective of WhatsApp and Facebook as only limited to social interaction should be diminished. Educators should make use of the WhatsApp and chat groups on Facebook in a more organised and formal way. In addition, WhatsApp was preferred by the digital immigrants although some lamented that some people posted non-learning related topics.

In view of the convenience that the WhatsApp or Facebook group chats brought, the institution may consider making use of the group chats rather than rigidly using the LMS. Or they could also consider redesigning the LMS platform or designing a Forum APP that could be embedded into the LMS to increase participation and engagement rates among the learners. Notification alerts and ease of use are the main aspects to consider when designing the APP.

Engagement in Face-to-face Tutorials

Findings indicated that participants just sat and listened to the lecture quietly during the face-to-face

tutorials. The digital immigrants are brought up from the traditional classroom teaching where students learn what the teacher teachers. They get used to this kind of teaching method and expected the teacher to tell them what to do, when to do it and how to do it. Even now in many higher institutions, students are usually listening and taking notes from what the teacher says. Students are more reserved and do not query or question the teacher.

As Rodgers (2008) says, the active engagement brings better learning performance for the students in an e-learning environment. Learner engagement could be increased when the interaction among the peers and tutors increased. Teacher-centred teaching is not an effective way to engage students in an e-learning environment anymore. Therefore, to encourage active engagement in the class, the tutor should conduct their tutorials in a more interactive way rather than giving a 2-hour lecture in the class which do not promote any engagement. For example, group activity, group presentation, microteaching activities can be implemented. Technology could also be incorporated into the learning activities. For instance, using GoogleClassroom for practise exercises to a learning topic, compare answers among the class, discuss the answers and provide the feedback.

In addition, the digital immigrants have lots of experiences, thus, the tutor can let digital immigrants share their experiences and bridge those experiences into the learning content. Give them a chance to present and share their ideas and experiences, and the tutor relates them to the learning content (Silva & Gimenez, 2019). The learning becomes more engaging when there are multiple resources of the learning content to be shared rather than just from the tutor. Nevertheless, the tutor is the dominant person to trigger the engagement of the students in the class.

Engagement in Course Materials

Only a small group of digital immigrants claimed that they read the course materials thoroughly. The majority of them claimed that they just skimmed through the learning materials and focused only on the main points. Thence, they used mind-mapping to draw the points and just studied those points while others claimed that mind-mapping is ineffective as they prefer referring to complete sentences when doing revisions.

On the other hand, digital immigrants selectively pick and choose to read the topics they feel they want to study about deeper or are more interested in, or even just because they find it easy to understand. They gave up on the difficult-to-comprehend parts as they claimed that they have no time to waste on dwelling on things that made them struggle. For those who skimmed through the learning materials, short notes, simple learning objects or videos that serve the purpose of learning a topic (e.g. microlearning) could be created for them to enrich their studying process.

Connection between Learners, Tutors, Peers and Technology

As proclaimed by one of the digital immigrants, *"Everything is connected… just in different ways"* and this is so for the learners, peers, tutors and technology. They are linked during the learning process. Figure 4 shows how they are interrelated.

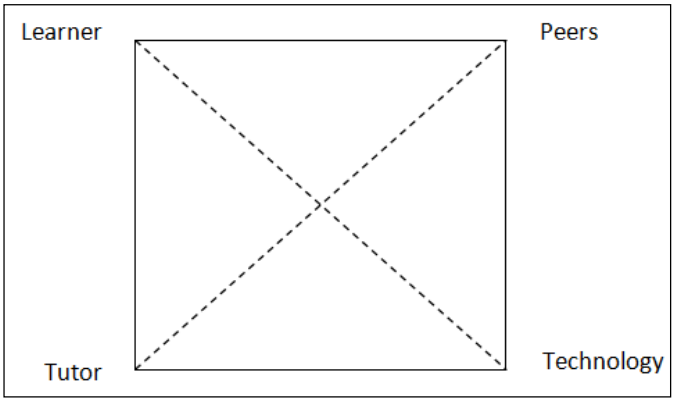

Figure 4. Four agents in the e-learning environment.

Figure 4 shows the four main agents in the e-learning environment of this study. They are learners, tutors,

peers and technology. This study named it as the 'Educational square' (E-square, □) in which the study found that participants interacted with their peers, tutors and technology in different learning activities. The following summarised each pattern or combination found in the study.

1. Learners-tutors-technology (└): Participants use technology to get updates from tutors in the LMS and send messages to the tutors to ask about their assignments.
2. Tutors-learners-peers (┌): This is observed during the face-to-face tutorials which involved the highest interaction. The participants listened attentively to the tutor's presentation and answered the tutor's questions in class. On the other hand, peer interaction is significantly observed during group discussions.
3. Learners-peers-technology (┐): This was practised by participants outside the classroom. They joined the WhatsApp groups, some of them received updates from peers through the groups while some participated in the discussion actively in the WhatsApp group.
4. Peers-technology-tutors (┘): This was practised by the participants when performing their learning alone. When encountering any problems, the participants' choices of seeking help were different. The majority of the participants would use technology to look for solutions by 'Googling' then only asking their peers, and finally the tutors. Meanwhile, some may ask their peers and only get confirmation by 'Googling' the information. Then again, asking tutors will always be the last choice for the learners unless the learner is in a face-to-face situation.

On the other hand, it can be seen that there were two types of peers that exist in the e-learning environment. One would be the physical peers that digital immigrants met face-to-face and another would be the virtual peers from the group chat.

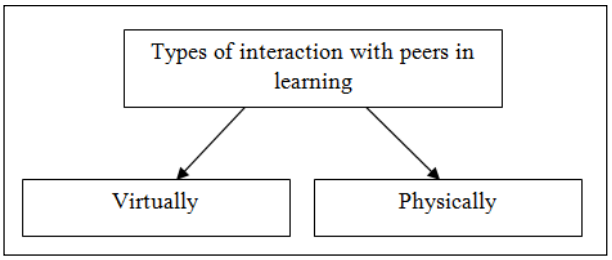

Figure 5. The types of peers in the e-learning environment.

People network because they think that peers could be helpful in some way. As such, the two types of peers – virtual and physical – play different roles. Peers could be the companions who shared similar goals and faced similar challenges with them. Peers could be also helpful in giving updates on the latest information. It is notable that virtual peers are information providers and to some extent, they are also problem solvers provided they have enough information or knowledge to contribute answers. Whereas, peers that meet physically play the roles of companions as well as motivators who share common goals with each other.

Alongside this, peers give fast responses to queries as well. According to Tilvawala, Sundaram and Myers (2013), digital immigrants preferred WhatsApp over the learning management system as the responses are speedy. However, in this finding, in terms of the speed of the responses, different digital immigrants have their own perspectives. Some may think that the communication through WhatsApp groups gets them immediate responses and is easy; whereas, some may think that through face-to-face communication, the response could be also obtained quickly.

Several digital immigrants still insist that learning should contain the elements of human interaction. Human responses that are emotional are important to them as emotions are considered a part of their messages. When it came to solving learning queries, the majority of the digital immigrants opt to search for information through the search engine before they approached their peers.

CONCLUSION

When the transformation takes place, it is important for the researchers to rethink the value of technology that has been brought to education. While technology may bring the benefits, it may also take

away some benefits that the traditional way of learning provided. As seen, the interaction between humans was emphasised by the digital immigrants in the e-learning environment, but technology separates the human-to-human interaction in some ways. Conclusively, blended learning modes in the e-learning environment which still allows interaction between humans is still the best choice for these digital immigrants, while technology is an alternative tool for the learners to perform their studies.Social media such as WhatsApp and Facebook group chats have played a part in teaching and learning activities, thus studies could be done to find out the new teaching and learning approaches with the integration of social media, especially through the interactions among the participants in the WhatsApp groups.

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