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Unpacking Stages of Mobile-Assisted Language Learning Adoption: A Narrative Inquiry

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ABSTRAK

Kemajuan teknologi menuntut adanya adaptasi dalam bidang pendidikan, khususnya bagi guru bahasa. Kebutuhan ini tidak bisa diakomodasi begitu saja di dalam kelas. Dalam proses adopsi teknologi, guru mengalami berbagai proses yang harus dilalui. Studi saat ini bertujuan untuk mengisi kesenjangan dalam isu-isu terkait dengan kompleksitas adopsi MALL di pendidikan tinggi. Untuk memenuhi kebutuhan akan kekayaan deskriptif dan menggambarkan keseluruhan proses adopsi, digunakan pendekatan kualitatif; khususnya, Narrative Inquiry (NI). Ada total tiga orang yang berpartisipasi dalam penelitian. Pengumpulan data dilakukan dengan menggunakan kerangka naratif, kotak kosong, dan panduan wawancara terstruktur. Temuan penelitian menyoroti sifat simultan dan berkelanjutan dari proses adopsi. Tiga fase adopsi yang berbeda diidentifikasi oleh penelitian ini: penerimaan (sebelum digunakan), penggunaan (selama penggunaan), dan konfirmasi (setelah penggunaan), dengan tiga prosedur evaluasi yang berbeda untuk setiap fase. Temuan penting lainnya adalah bahwa niat belum tentu merupakan dorongan untuk menggunakan. Ada proses review yang menjembatani maksud dan pemakaian. Proses niat dan peninjauan dilakukan secara simultan. Namun demikian, sementara niatnya mungkin segera, peninjauan membutuhkan waktu pengambilan keputusan yang lebih lama. Proses review bisa menjadi jawaban atas perdebatan dalam studi TAM terkait alasan ketidakkonsistenan niat penggunaan dengan penggunaan.

ABSTRACT

Technological advancements necessitate adaptation in the field of education, particularly for language teachers. This need cannot simply be accommodated in the classroom. In the process of adopting technology, teachers experience various processes that must be got through. This current study was aimed at filling the gap in the issues related to the complexity of MALL adoption in higher education. To fill the need for descriptive richness and picture the entire adoption process, a qualitative approach was used; specifically, Narrative Inquiry (NI). There was a total of three people who participated in the research. Data was gathered through the use of a narrative frame, an empty box, and a structured interview guide. The study's findings highlight the simultaneous and ongoing nature of the adoption process. Three distinct phases of adoption were identified by this research: acceptance (before use), usage (during use), and confirmation (after use), with three distinct evaluation procedures for each phase. Another important finding is that intention is not necessarily a drive to usage. There is review process that bridges the intention and usage. The process of intention and review are simultaneous. Nevertheless, whereas intention is likely immediate, the review takes longer period of decision making. The review process could be the answer to the debate in TAM studies related to the reasons of inconsistency of the intention to use to the usage.

1. INTRODUCTION

Technological advancements necessitate adaptation in the field of education, particularly for language teachers. This need cannot simply be accommodated in the classroom. In the process of adopting technology, teachers experience various processes that must be got through. The value of using technology in language learning is undeniable. Mobile learning have been assumed as a central role in supporting continuity of learning across diverse contexts and physical settings as well as extending opportunities to learn (Beatty, 2013; Burston, 2015; Chen & Tsai, 2021; Hockly, 2013; Kukulska-Hulme, 2013; Park, 2011). Mobile technology use has gained popularity in ELT due to its portability, affordability and availability, usability, and accessibility characteristics (Alrasheedi & Capretz, 2013; Baran, 2014; Crompton, 2014; Jeong, 2022; Lall et al., 2019; Miangah & Nezarat, 2012). Specifically, the use of mobile technology in language learning is known as Mobile-Assisted Language Learning (henceforth, MALL).

The growing interest in mobile learning has prompted experts to study the phenomenon scientifically.

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An increased reception of mobile technology use in reviews on current trends in education is the prove that studies in MALL is gaining popularity (Baran, 2014; Johnson, Smith, Willis, Levine, & Haywood, 2011; Khaddage, Müller, & Flintoff, 2016). Ample of previous studies on MALL (Chang & Hsu, 2011; Duman et al., 2014; Hwang & Tsai, 2011; Jeong, 2022; Mahdi, 2017; Taj et al., 2016) have provided evidences on the effectiveness of mobile technology implementation in English Language Teaching (henceforth, ELT). Unfortunately, there is an ironic issue in the attempt of integrating mobile technology into instructional context (Al-Azawei, 2019; Alrasheedi & Capretz, 2013; Zhao & Cziko, 2001). Even with the availability of technology and ample of empirically proven potentials, slow adoption of mobile technology use was revealed in higher education context (Ata & Yildirim, 2019; Liu et al., 2017; Zhao & Cziko, 2001). Surprisingly, compared to other subjects, ELT teacher educators have been found least inclined to use mobile technology (Alrasheedi & Capretz, 2013; Liu et al., 2017; Mahdum et al., 2019). There is a need to understand the underlying reasons of the contradiction.

One of the assumptions that may contribute to the low adoption of technology in language learning is a lack of desire to use it. The Technology Acceptance Model (TAM) is an example of a theory that lends support to this one. Proponents of TAM argue that intention plays a role in the adoption process (Kelly, 2014; Lee et al., 2003; Legris et al., 2003; Venkatesh & Davis, 2000; Yousafzai et al., 2007). The likelihood of adoption increases with the level of intention. Some studies, however, have shown that intention is not always a factor in the final adoption decision. Several studies have found that intention does not drive to decision to use. Discussion on this issue is still ongoing (Ajibade, 2018; Heshan & Ping, 2004; Hossain & Quaddus, 2012; Nyoro et al., 2015; Schwarz & Chin, 2007; Turner et al., 2010). Apart from these contradictions, it must be acknowledged that the TAM theory is considered too simple (Bagozzi, 2007) to capture a comprehensive picture of the adoption process (Hirschheim & Klein, 2012), because it concentrates more on the intention than that the usage issue. These weaknesses then become research gaps which are then explored by many researchers.

As a result of these contradictions, new issues arose. One major source of concern is the process in which technology adoption occurs. The emphasis is now on the usage process rather than the intention process. In order to get a complete picture of the adoption process, in-depth research is required that goes beyond simply comparing the factors that influence the intention to use technology. There is a need for a comprehensive set of understanding, ideally throughout all stages of the adoption life cycle (Black et al., 2011; Heshan & Ping, 2004). Further studies need to consider the dynamic of technological changes, dynamic of human behavior (Heshan & Ping, 2004), and social contexts (Ajibade, 2018; Black et al., 2011; Salovaara & Tamminen, 2008) that facilitate the intention and usage. In-depth studies are urged, especially to higher education context where the adoption of technology are encouraged (Baran, 2014; Beatty, 2013; Bozdoğan, 2015; Capretz et al., 2012; Forkosh-Baruch & Avidov-Ungar, 2019; Hamutoglu & Basarmak, 2020; Herrington et al., 2009; Hockly, 2012; Khaddage et al., 2016; Kim et al., 2011; Wu et al., 2012).

This current study was aimed at filling the gap in the issues related to the complexity of MALL adoption in higher education. In order to answer the challenge in the need for further elaboration of full life-cycle of adoption, the focus of the study was not on the intention but move to usage and decision-making process. The use of qualitative approach, specifically Narrative Inquiry (NI), was implemented to address the need of descriptive richness and picturing the whole life-cycle of adoption. This study intended to demystify stages of teacher educators' MALL adoption process based on a narrative inquiry.

2. METHOD

The study was conducted to gain fruitful MALL adoption experiences from teacher educators, focusing on the stages of MALL adoption. Qualitative approach, with Narrative Inquiry (NI) methodology, was considered suitable as the design of the study. Narrative is understood as a spoken or written text giving an account of an event/act or series of events/acts, chronologically connected. NI is a methodology in which the researcher attempts to illuminate meaning of personal stories and event (Wang & Geale, 2015), considered to allow gathering in-depth and rich description of teacher educators MALL adoption experiences (Haydon et al., 2018; Wang et al., 2015; Wang & Geale, 2015).

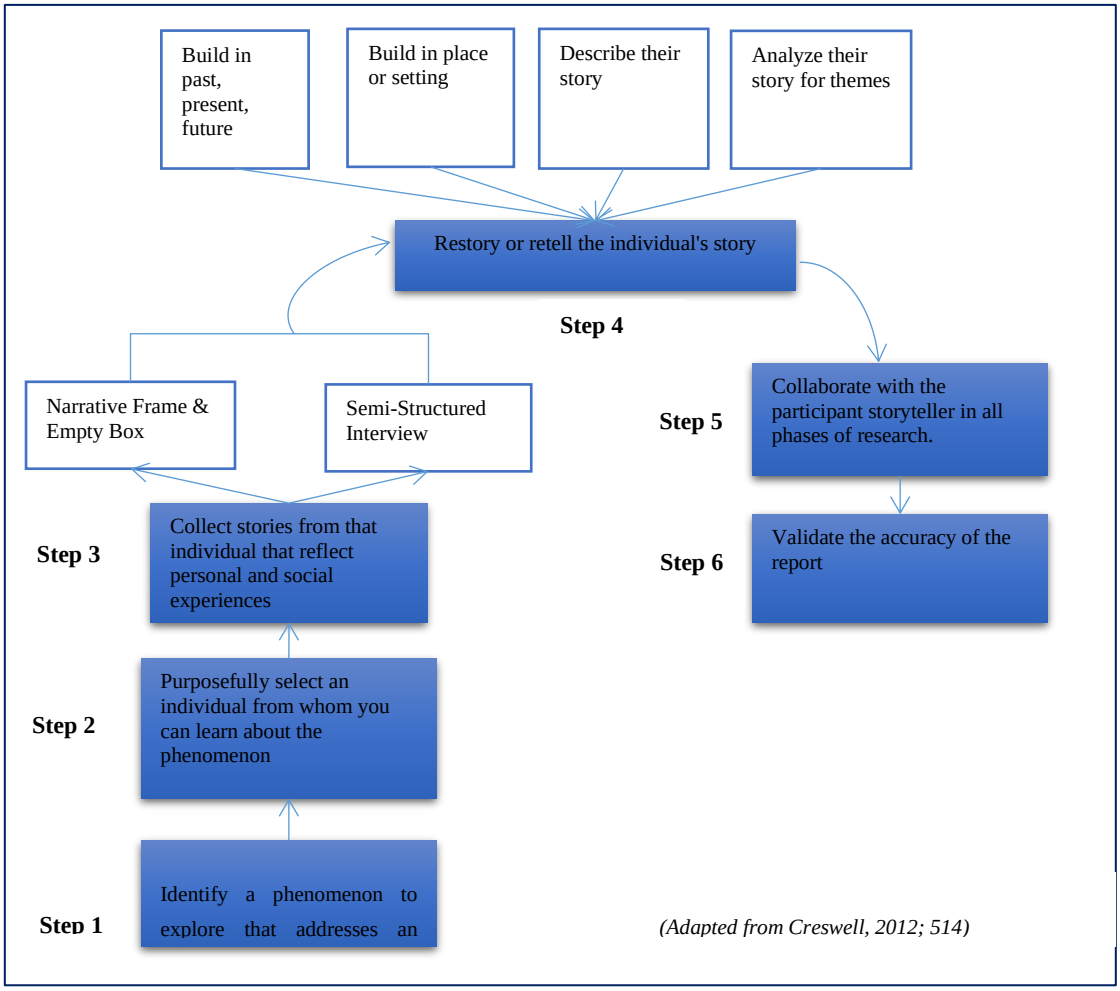

Figure 1. Design of the Study

The design of this study was adapted from (Creswell, 2018). As shown in Figure 1, there are six stages that must be completed. In selecting participants, criteria were made. The participant's criteria were an experienced EFL teacher educator, who consistently uses MALL, and has reputation as MALL practitioners. These criteria became the definition of participant in the study. During a seminar of MALL in Indonesia, a survey was conducted to gather prospective participants. 10 names of MALL practitioners were revealed. Based on the selection criteria, from 10 prospective participants, there were 3 teacher educators willing to participate in the study. They were Iwan, Duwa, and Fitri. Pseudonyms were used to ensure the ethical issue.

In order to portray the stages of the adoption, stories were gathered through narrative frame (NF), empty box (EB), and semi-structured interviews. The instruments were prepared to collect the narratives of participants' MALL life history, to capture whole-life MALL adoption stages of the teacher educators. The NF and EB instruments are useful for exploring the participants' stories, while the interview guide is useful for delving deeper into the stories told in the previous two instruments. It has to be reminded that the NF and EB were analyzed before the interviews were conducted. The narratives from NF and EB were roughly compiled. Fruitful stories were highlighted for further confirmation and elaboration in the interview sessions. The process and the factors of the adoption were noted. Some literatures were also prepared for understanding the narratives. From the literature readings, some questions emerged, needed to be confirmed and elaborated in the interviews.

The raw data were then gathered and re-storied. Restory or retell is the process of organizing the stories based on themes or sequential event. the re-story data were repeatedly read and analyzed to determine the core statement. During the process, the coding and categorizing were conducted to develop and refine themes. During the process, the researchers collaborate with the participants to ensure that the stories were reliable and valid.

3. RESULT AND DISCUSSION

Result

In general, the adoption processes of the participants were consisting of multiple stages and could take multi years for the process. There were stages of acceptance and use, in which along with the adoption, there were continuous evaluations through reflections. The evaluation was considered important as decision making process and comprehensively conducted before, during, and after the use. The process may not be easily observed by the participant and there is not any clear cut of each stage.

The adoption process was following fairly the same pattern. It started from intention to the use. In between there were evaluations. The evaluations occurred before, during, and after the usage. The participants' experiences were suggesting that adoption process was a complex multi-stages process. There was initial stage of Acceptance, consisting of Intention and Review (evaluation before use). In the main stage of Usage, there were processes of Use and Exploration (evaluation during use). In the follow up stage, there was a Confirmation process (evaluation after use). Figure 2 shows the stages of the MALL adoption. Each stage will be discussed further.

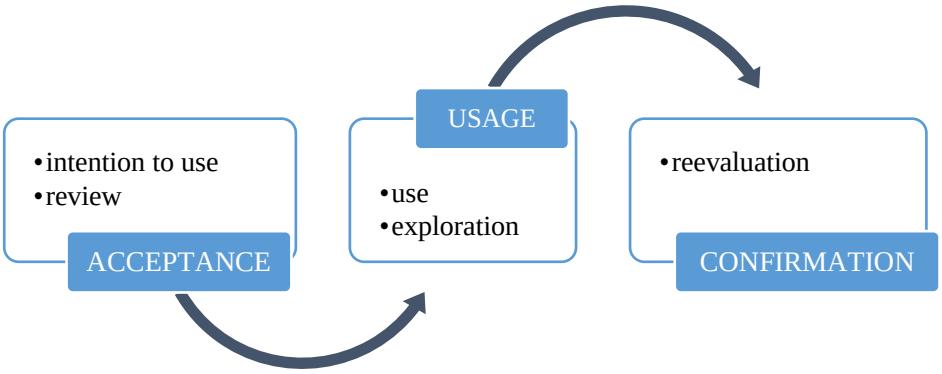

Figure 2. Multi Stages of Adoption

Acceptance Stage: Intention and Review

The initial stage of adoption was acceptance, which can be seen from the intention to use the MALL. The narratives of entire participants suggested that their early intention to use MALL were self-generated; the intention was not mandatory. Yet, some of the adoption process was mandatory, through suggestion or obligation to use some apps or mobile technologies. In the initial stage, there was also Review process (evaluation before use). The review could be in the form of reviewing literature, reviewing other users' use and success through discussion, sharing, or workshop, self-review based on product evaluation (comparing and contrasting tools and apps) or trial and mock activities, and reviewing contexts and needs (personal, learning, and students' needs). While the intention was immediate, the decision making in review stage tended to be deeper. The decision could lead to usage or rejection. The rejection could be temporal or permanent. In brief, there are two phases in the initial stage of adoption; intention and review. Decision to use or reject is based on these two processes, particularly the review. Even if there is an intention, rejection may still emerge when the desirable needs could not be met in the review process. The rejection may be temporary or permanent.

Usage Stage: Use and Exploration

All participants used multiple tools and apps, inside and outside classrooms. The usages are various: for preparing teaching (e.g., content creation), delivering information, managing classroom, practicing skills, giving feedback or assessment. During usage, the participants conducted evaluations (termed as Exploration). The evaluation is in the form of exploration through gathering feedback. On some occasions, several identical apps were evaluated in the classroom to gain the feedback, to observe the ease of using, and to look for the obstacles in applying the apps or the technology. The decisions in the exploration process leads to choices of apps, adaptation, and appropriation of the usage.

Follow-Up Stage: Confirmation

After using, it was revealed follow up stage. In the follow up stage, reevaluation was conducted to have confirmation. The confirmation could be in the form of continuance or turn down. The continuance resulted to further adaptation, appropriation, and innovation. On the other hand, the turn down could be in the form of minimizing the use, changing the app, or stopping the use of the app. Whereas exploration was conducted while

using, the confirmation process was conducted after a semester. In other words, confirmation could be as conclusion of exploration processes. The participants' adoption of mobile technology was gradually progressing, shifting from a techno-centrist perspective to a more needs-based one. In addition to individual requirements, the review took into account the educational requirements of the participants. The participants demonstrated varying levels of inventiveness by repurposing the use of certain apps in their work.

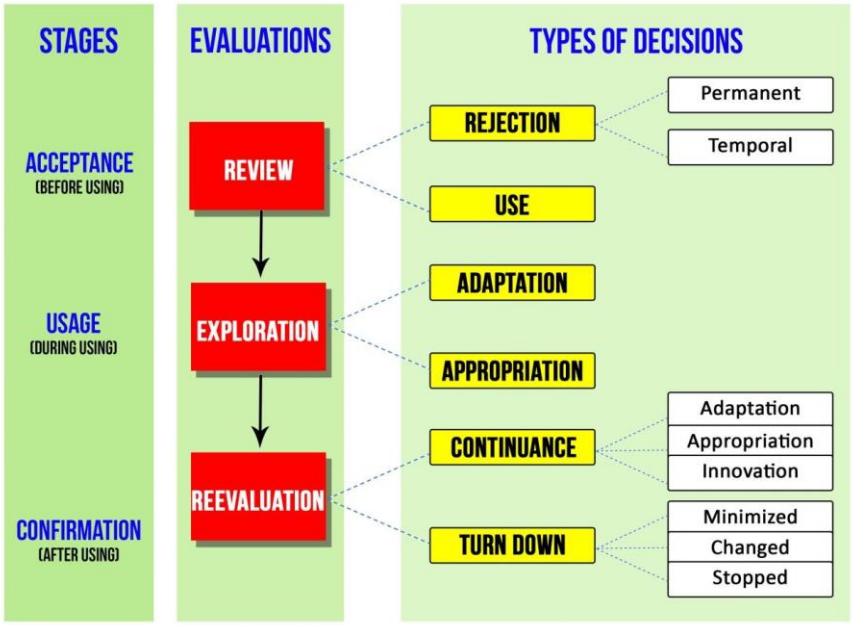

Figure 3. Evaluations and Types of Decisions

Discussion

The finding of the study has confirmed that the technology adoption was consisting of series of stages, not a single event. This finding shares common assumption with previous studies stated that technology adoption is a complex process, multi stages (Davis, 1993; Rogers, 1995; Straub, 2009). Similar to TAM studies, this study revealed the acceptance and usage stages. Intention to use takes place before the use, in the acceptance stage. In successful adoption process, intention will be followed by use. This study revealed an important aspect in adoption process: the evaluation process. Additional to intention and use, this study revealed processes of evaluations which take place before (review), during (exploration), and after (confirmation) using the technology. Based on the evaluation processes, an additional stage is then emerged, that is the confirmation stage (after using). Therefore, there are 3 (three) stages in adoption stages, in which in each of them, there is an evaluation process.

Unlike TAM theory that have two main stages: intention and use, this study revealed three primary adoption stages; Acceptance (prior to use), Usage (during use), and Confirmation (after use). Therefore, in the initial stage, there are two processes: intention and review (evaluation before using). In the main stage, there are processes of use and exploration (evaluation during using). After use, there is a reconfirmation process, evaluation after using. The initial stage is going to be termed as Acceptance stage, lending the TAM's term. Acceptance is the initial stage of adoption where individual has the intention to use technology and conduct initial evaluation (review). The main stage was termed Usage stage. Usage is the main stage of adoption where individual use and explore (evaluate during using) the technology. The after-use stage is termed Confirmation stage, lending the term of IDT (Innovation Diffusion of Theory). Confirmation, is the stage when "individual reflects on his or her decision and implementation process and re-evaluates whether to continue or discontinue with the innovation adoption (Rogers, 1995).

One unique finding was the evaluation process. This study confirms three types of evaluations in the adoption process; Review, Exploration, and Confirmation. Each of the evaluation process leads to different decisions. The review process would lead to use or rejection. This finding supports previous study that review determines whether a new innovation will be used or rejected by the potential adopters (Rogers, 1995; Wani & Ali, 2015). The rejection could be temporal or permanent. In temporal rejection, the technology usage will be postponed. It still has a chance to be reevaluated. The early evaluation could also be ended up with permanent

rejection, in which the technology would not be further evaluated or used. Figure 3 shows the Evaluation process and the types of decisions. Figure 3 becomes the novelty of the study.

During use, exploration process would also emerge. In exploration process, the advantages and disadvantages of the technology were evaluated. Changes were made accordingly, usually conducted during the whole semester. Even when the technology was subject to adaption and appropriation, it remained used. In the final stage, the technology was reevaluated for confirmation. This confirmation stage was commonly conducted in the end of the semester. The confirmation could be based on summary of the explorations or based on the changes of needs or technology. Result of the evaluation would lead to continuance, turn down, or innovation. Continuance could be with or without adaption. Continuance without adaption was not observed in this study. While continue using a certain app or tool, intention to use new additional tools or apps might emerge. In other words, adoption of a certain technology might lead to adoption of a new technology. The confirmation stage would also emerge innovation.

In this study, based on the needs, the development of technology, and sharing activities, the participants innovated; made some new apps for teaching and learning English. Whereas, in some instances, turning down of technological use existed in the confirmation stage. Technology turn-down could be in the form of minimizing the use, replacing with comparable innovation, or stopping it completely. Turning down technological activities is an example of a negative cycle of adoption (Straub, 2009). In this study, the negative cycle of technology adoption was observed. The pace of adopting new technology was getting slower, unlike the earlier years of MALL adoption. Various reasons were given. One of them was the available time to conduct evaluations. Their workload minimized their effort to evaluate.

The mobile technology adoption progress of the participants was gradually evolving, from techno-centrist to needs-based. It was following a developmental progress, starting from using, adapting and appropriating, and finally inventing/creating. In their early period of technology adoption, the participants tended to be techno-centrist, simply concerning on using technology. In the beginning, they were easily stimulated by new technologies. Technology was considered as part of participants' life. The use of technology, then, became a habit. The use of MALL was considered easier. The challenge was to adapt and appropriate the use to meet pedagogical goals. The participants became more adaptive and well informed as experiences grew. The process of reviewing became more selective based on the needs, not just on curiosity. Apart from personal needs, the review was also appropriating learning and learners' needs. In other words, in order to promote learning, the use of MALL was adapted and appropriated, regarding more pedagogical considerations than technological ones. The later development of adoption was creation or innovation. The participants showed various rates of innovation. Repurposing the use of an app was revealed on a participant, while the other participant has already been in the stage of creating new apps.

During the MALL adoption process, the teacher educators were not merely using the technology but also adapting, appropriating, and even creating innovation. Result of the study has confirmed that adoption process is evolving (Gibson, 2001), a developmental process (Levin & Wadmany, 2008; Straub, 2009). The process is then continued to adjust (i.e., appropriating) the technologies to meet new or changing strategies based on the features of technology. The most advance development of technology adoption is creating new innovation in technology and teaching methods. In some studies, this developmental process is termed as technology integration. Adoption is considered as simply using the technology (Levin & Wadmany, 2008). In this study, however, adoption is considered to have the nature of using, adapting, appropriating, and innovating. Using technology is considered to be the earliest development of adoption process. Technology integration, in this study, has equal meaning to adoption, in which the terms can be interchangeably used. The adoption follows a cyclical process, in which the use of a certain application may lead to the intention of using other applications. The processes of evaluations occur along the adoption process. That is why evaluation phases were less observed in the adoption studies. The process of adoption is not a single event. While the choice to adopt an innovation or not may be a one-time occurrence, the route that leads to one decision does not take in a vacuum. Belief and attitudes are established over time, and this may in turn affect the choices (Straub, 2009).

The findings could be a valuable reference for the current gap in technology acceptance model. In TAM theory, the intention to use technology has been the major concern. Factors affecting the intention have been widely studied. Some studies, however, have quantitatively confirmed that intention may not necessarily be resulted to use. Intention does not always lead to use. There is no common agreement on the issue. In this study, the reason for the issue was on the evaluation process, especially the review process. The review process has not been widely observed. Furthermore, while TAM considered rejection as unsuccessful adoption process or non-adoption, this study considered rejection as part of the adoption processes.

4. CONCLUSION

The finding of the study has confirmed that the MALL adoption was consisting of series of stages, not a single event, in which consisting of complex multi-stages. Additional to intention and use, as the novelty, this study revealed processes of evaluations which take place before (review), during (exploration), and after (confirmation) using the technology. This study has also confirmed that the adoption process is both simultaneous and continuous. All three stages —intention, use, and evaluation—occur simultaneously. It would be difficult to observe the stages independently. This explains why adoption studies rarely observed the evaluation phase. Another important finding is that intention is not necessarily a drive to usage. There is review process that bridges the intention and usage. The process of intention and review are simultaneous. Nevertheless, whereas intention is likely immediate, the review takes longer period of decision making. The review process could be the answer to the debate in TAM studies related to the reasons of inconsistency of the intention to use to the usage. This study shows that narrative inquiry could help to reveal undetermined process of adoption and show the complexity of the process. Further exploration on technology adoption using qualitative study is then suggested to observe individual adoption process, in a more holistic view, to be sensitive with the complexity of the process.

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