STUDENT'S PERCEPTIONS OF USING MOBILE APPLICATION IN LEARNING TRADE-SPECIFIC ENGLISH VOCABULARY

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Abstract - This study explores the perceptions of students in using a mobile application for learning trade-specific English vocabulary in a Vocational and Professional Education and Training (VPET) institution in Hong Kong. The key considerations for further development of using the mobile application in learning are also discussed. The findings reveal that students generally expressed positive opinions towards the implementation of the Mobile-Assisted Language Learning (MALL). They considered the mobile application a useful tool for learning trade-specific English vocabulary and agreed that the mobile application can facilitate self-learning beyond the classroom.

Index Terms - Mobile Learning, Mobile-Assisted Language Learning (MALL), English Vocabulary Learning, Vocational and Professional Education and Training (VPET).

I. INTRODUCTION

The term "mobile learning" (M-learning) is defined as learning through mobile technologies including smartphones, laptop, tablets, netbook computers., etc. The mobility of learners and learning are what make it special compared to other types of learning activity. It allows students to access or receive the learning materials anywhere and anytime via wireless telecommunication network and the internet [13], [19]. The use of mobile technologies for learning has become well-known and is an important aspect in recent years. Many studies reported that the benefits of M-learning are to allow students have the added flexibility of being able to access the contents on their mobile devices. It could create pleasant learning environment and has a positive effect on learning. [7], [18].

Students use mobile device to learn vocabularies or languages is known as Mobile-assisted Language Learning (MALL). Kukulska-Hulme and Shield (2008) pointed out that MALL is "formal or informal learning mediated via handheld devices which are potentially available for use anytime, anywhere" [12]. A number of research studies indicate that the educational value of Mobile-assisted Language Learning is widely acknowledged by learners [3],[22], [23], [25] - [27].

Viberg and Gronlund(2012)reviewed Mobile-assisted Language Learning research within the specific area of second language acquisitionand found that studies of mobile technology use in different aspects of language learning support the hypothesis that mobile technology can enhance learners' second language acquisition [25]. Findings from the meta analysis of Taj, et al (2016)also indicate that Mobile-assisted Language Learning has fostered the English as a Foreign Language (EFL) instruction [23]. Positive impact of Mobile-assisted Language Learning on vocabulary learning is found in various studies. Rahimi and Miri (2014) investigated the impact of mobile dictionary use on language learning and found that EFL learners who used the mobile dictionary to learn English improved their language ability more than those who used the printed dictionary [17].In Wu's (2014) study, the use of smartphones is found to be an effective technique in building vocabulary for Chinese university EFL students [27]. Nevertheless, the use of mobile application in facilitating trade-specific English vocabulary learning in the context of the Vocational and Professional Education and Training (VPET) is yet to be fully explored. This study forms part of an exploration of using mobile technology to facilitate student learning, in particular, to review students' perceptions and experience of using a mobile phone application to learn trade-specific English vocabulary. The insights for further development of using the mobile application to facilitate student learning are also discussed.

II. METHOD

The data for this study was collected from a VPET institute in Hong Kong. A qualitative approach with reference to Davis's Technology Acceptance Model (TAM) [5],]6], [15] was used in this study to gain insights into the views and experiences of students on using a mobile application in learning trade-specific English vocabulary.

The TAM is considered to be one of the most widely applied framework in technology acceptance research studies. It has received empirical support for examining technology acceptance in different contexts [1], [2], [5], [6],[15]. According to the TAM, the Perceived Ease of Use and Perceived Usefulness are the two main factors that affect one's attitude and intention to use a technology system [5], [6]. It is used to provide a framework in this study to explain participants' perceptions on using the mobile application in learning in terms of perceived ease of

use and perceived usefulness of the application. The TAM is shown in Fig. 1.

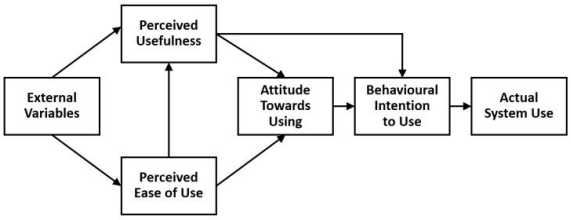

Fig. 1. The Technology Acceptance Model (TAM)

In this study, semi-structured interviews were conducted with students to collect their views. The interview questions were related to the factors of the TAM. Three focus group interviews were conducted with students from three Diploma in Vocational Education programmes of the Engineering Study Area in the institute to collect their perceptions on using the mobile application to enhance trade-specific English vocabulary learning and their views on user interface and basic functions of the mobile application. A total of 16 students (S1 - S16) participated in the interviews. All of the students have Cantonese as their first language.

III. THE CASE

A. Background

The institute in this study offers vocational and professional education and training (VPET) for youths above Secondary Three to acquire generic and trade-specific knowledge and skills for further studies and employment.

According to the final report of the language education review issued by the Standing Committee on Language Education and Research (SCOLAR), both educational and vocational considerations should be taken into account in developing the basic language competencies for Secondary Three to Seven students in Hong Kong. In the Final Report of the Language Education Review, it highlighted that students' low level of English proficiency seriously affected learning in Hong Kong's tertiary institutions [16], [21]. In the workplace sector, there is also an increasing demand for English proficiency from the workforce in Hong Kong [10].

To enhance students' English competency for further studies and employment, the institute piloted an initiative with the objectives to enable students to articulate common trade-related problems in simple English and apply the skills in learning topic-based trade content. One of the deliverables of the initiative is to develop a mobile application for learning trade-specific English vocabulary for supplementary learning.

B. The Mobile Application

The focus of English enhancement in phase one Mobile-Assisted Language Learning is vocabulary building. A total of 1,000 frequently used trade-specific English vocabularies for each Diploma in Vocational Education programme were put in the mobile application. The trade-specific English vocabularies are categorised according to students' programme of study.

The application contains a Chinese to English and English to Chinese dictionary with audio pronunciation in Putonghua, British and American English. Students may choose to search the words in Chinese or English, or to use the voice recognition function for searching words in Cantonese or English. Some of the words may contain drawings or pictures illustration.

Additional features of the application include "Word of the Day", "Searched Words History", "Top Ten Searched Words", "Favourite Words" and "Student Ranking". Students can also control the speed of word reading to suit their need. More learning and teaching functionalities and activities will to be developed subsequently in the second and third phases.

IV. FINDINGS AND DISCUSSION

According to the TAM, the Perceived Ease of Use refers to the degree to which a person believes that using a particular system would be free of effort and the Perceived Usefulness is referred to the degree to which a person believes that using a particular system would enhance his or her performance. The Attitude Towards Using is the user's evaluation of the desirability of employing a particular information systems application. The Behavioural Intention to Use is a measure of the likelihood a person will employ the application. The external variables affect intention and actual use through mediated effects on perceived ease of use and perceived usefulness [5], [6], [14].

A. External Variables

One of the external variables that affected participants' perceived usefulness and intention to use the application in this study was the availability of alternative solution for students to learn trade-specific English vocabulary:

- Google translate can translate the technical terms. (S7)
- I think the best way to learn English is to have more English lesson. (S13)

Another external variable affected participant's intention to use was the file size of the application:

- If the app is taking up too much space, I may not install it. (S16)

B. Perceived Ease of Use

In this study, all participants found the mobile application easy to use. No assistance was needed when they installed and used the application for the

first time. They found the user interface easy to navigate and theywere able to understand and use different functions and features of the application. The perceived ease of use of the mobile application was positive.

C. Perceived Usefulness

In terms of perceived usefulness, most of the participants opinionated that using the mobile application in learning trade-specific English vocabulary was helpful to their programmes of study both in class and after class in doing assignment. They considered the application has most of the functions and features they expected it to have.

- I could search the technical terminologies in both Chinese and English that helps me to find exactly what I am looking for. It helps me to deepen the memories of the vocabularies. (S8)
- I have to read English technical manuals from time to time. The app is useful for checking up new and difficult technical terms. (S10)
- It is good to use the app for learning technical vocabularies. (S15)
- It is a nice dictionary app with the vocabularies from my own programme. (S16)

Studies have shown that combining multiple forms of media such as text, voice and pictures can facilitate vocabulary learning [4], [27]. Participants in this study also considered the drawings or pictures shown alongside the vocabularies useful for understanding the vocabularies. Most of the participants pointed out that the English pronunciation of the application was useful for their study:

- I can control the speed of word reading. This is very useful for me to learn the pronunciation of the vocabularies. (S2)
- I like the English pronunciation and think that the picture can help me understand the meaning of some technical terms. (S3)

Mobility of learning is one of the unique educational affordances of mobile learning [11], [19]. It allows students to have the added flexibility of being able to access the contents on their mobile device at their own time.

Individuality of learning is another characteristic of mobile learning which could provide "unique scaffolding that is customised to individual's path of investigation" [11].

These benefits of mobile learning were acknowledged by the participants of this study. They considered the application useful because they could use it without constraint of time and learn at their own pace.

- I got new learning experience and I have the motivation to learn trade-specific vocabulary without constraint of time. (S1)
- If a lecture contained new or difficult trade-specific vocabulary, I could go over it again in my own time at my own speed. (S6)

These educational affordances of mobile learning could also enable self-directed learning. As asserted by the Curriculum Development Council, the information technology is considered to be an effective tool to facilitate both classroom and self-access language learning[8]. Most of the participants in this study opinionated that the mobile application was useful for self-learning.

- The app enables me to self-learn. I can use it to check terms in handouts and listen to the pronunciation. (S4)
- I could review the vocabulary after class, listen to the pronunciation and then spell the word by myself. (S9)

Only two of the participants were sceptic about the usefulness of the application.

- The app only includes part of the technical terms; I may not use it frequently. (S7)
- It is good to learn English but I may not install the app. The best way to learn English is to have more English lessons. (S13)

D. Attitude Towards Using and Behavioural Intention to Use

The attitude towards using represents one's evaluative feelings when performing a particular behaviour [14]. It has been identified as a factor that guides future behaviour and as an intentional cause that ultimately leads to a particular behaviour. Except for the two participants who were sceptic about the usefulness of the application (S7 and S13), the rest of the participants expressed that the overall feeling about the application was good. They also said that they intended to use the application for learning in class and in doing homework.

Comments from the participants indicated that the perceived usefulness had a positive influence on attitude towards use, and a positive attitude leaded to the behavioural intention to use the mobile application in learning trade-specific English vocabulary

E. Insights for Further Development of the Mobile Application

Qualitative information yielded from the interviews also provides insights on the key considerations for further development of the mobile application to facilitate student learning.

In this study, participants suggested to incorporate game elements into the mobile application.

- Adding scores for goals, leader board would make the learning app more interesting. (S2)
- It will be more interesting if the app has different players' rankings. If there are prizes for higher ranking players, I will be more motivated to use the app. (S4)
- The app will be more attractive if there are games or competitions. (S10)
- Matching and games would be good for vocabulary building. (S11)

Various studies indicate that gamification in learning

context is positive in terms of increased motivation and engagement in learning tasks [9], [20]. According to Simões, Redondo and Vilas (2013), game mechanics and game dynamics are two important elements in gamification pedagogy. Game mechanics are the rules and rewards of the game that govern a behaviour through a system of incentives and feedback. Game dynamics are the desires and motivations leading to those emotions [20]. For future development, adding game elements, score points, leader board and competition features in the mobile application would be one of the strategies to motivate and engage students in learning.

Simões, Redondo & Vilas (2013)also pointed out that game dynamics can attract students when they interact with other students in the process of the game [20]. In this study, participants also suggested to enhance the feature of the mobile application to provide more opportunities for them to interact with their peers.

- If the app has a forum or message board, we could interact with the teachers and other students. (S1)
- I think it would be more fun if I can play with peers when using the app. (S2)
- Ifthe app has more interactive activities that allow me to use it with my peers or in group, it would be more interesting. It would also encourage less capable students to learn. (S5)
- I may get bored easily if I use the app alone. If there are some competitions between peers or between classes, I will be using the app more frequently. (S9)

Developing learning activities for mobile learning requires understanding of both the delivery platform and good instructional practices [24]. To capitalise the benefits of Mobile-Assisted Language Learning in further development of the mobile application, identifying appropriate pedagogical use of the mobile application is crucial in motivating students, enhancing self-learning, and creating an effective technology-enhanced learning experience.

CONCLUSION

The TAM posits that the use of a technology system can be predicted reasonably well from users' intentions. The perceived usefulness is the major determinant and the perceived ease of use is a significant secondary determinant of people's intentions to use a technology system [5], [6]. Our findings are generally consonant with the findings of Davis and various studies using the TAM [1] - [3], [5], [6], [15]. Majority of the participants showed positive perception of using the mobile application in learning. They generally considered the mobile application as auseful tool to facilitate learning and agreed that the mobile application was able to provide opportunities for students to learn trade-specific vocabulary on their own. The students perceived strong needs for enhancing the game elements in the mobile application and considered providing opportunity for them to interactive with their peers would motivate them to use the application in learning.

Since this is a study with a small sample size in the engineering discipline, studies with different disciplines and more participants could provide a more comprehensive picture on students' perceptions of using the mobile application for learning. Further studies on a longitudinal basis with regard to the effectiveness of different instructional design approaches on using mobile applications in learning and the impact on students' learning would be valuable to scholars and teachers. However, the findings of the present study should provide insights to teachers by expanding their current understanding of technology integration in learning and the applicability of mobile technology in the VPET context in Hong Kong.

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