

Using Web 2.0 Technologies in English Language Learning: Perception of University Students

Kretsai Woottipong

Abstract—This study aimed at analyzing the Technology Acceptance Model (TAM) in order to investigate students' behavioural intention to use the web 2.0 technologies to develop four English language skills. The research was the survey research and used the questionnaire to collect the data. The samples of the research were 100 undergraduate students from Thaksin University. The results of the study revealed that students' perceived ease of use (PEOU) had a significant influence on attitude towards usage (ATU). Subsequently, perceived ease of use (PEOU) had the strong significant influence on perceived usefulness (PU). The findings suggest that TAM is a solid theoretical model where its validity can extend to the web 2.0 technologies.

Keywords—Web 2.0 Technologies, English Language Learning, Perception of University Students

I. INTRODUCTION

With the prominence of Web 2.0 technologies, they have been increasingly and steadily integrated into higher educational context. However, the benefits of these technologies make important for higher educational institutions and educators to gain more information about the advantages and feasibilities of adopting these technologies (Kaminski, 2005). This is because the wide use of these technologies is not enough to expect faculty to employ these technologies in university or college levels. That is to say it is more crucial to first evaluate their potential for enhancing learning efficiency (Donnison 2004).

What is missing in the existing literature is evidence proving whether instructors should utilize these technologies at the start in the classroom since they hardly reflect on what technology can or cannot do; they just employ it (Feenberg, 2008). Critical theorists have recommended instructors to have a critical awareness and vigilance prior to integrating technology into the classroom. This enthusiasm to immediately use the technologies may cause instructors to rush into employing new technologies without much consideration of their possible advantages or obstacles. This enthusiasm underpins teachers' beliefs that technologies will help them succeed in their teaching objectives, solve their teaching problems, and enhance student learning.

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In addition, many have not been adequately examined in terms of students' perceptions towards the selection of suitable technologies on their own for learning purposes. Thus, what is also often missing is the students' views (Aucoin, 2012). Although it might be possible to demonstrate that educators can integrate learning technologies in the classroom, this does not mean they should. In addition, although it may be possible to show that learning outcomes are somehow more effective through integrating technologies in the classroom, this does not guarantee that learners will be able to adopt the new techniques or make use of these new technologies. Instructors are not sure and don't yet know in any systematic way how learners perceive employing these technologies in the classroom.

The purpose of this study is to investigate the students' perceived usefulness of the web 2.0 technologies to develop four English language skills in language learning by investigating the students' attitude towards their use of these tools and their intention to use them in the future.

II. RESEARCH MODEL AND HYPOTHESES

The purpose of this study is to examine students' acceptance of using web 2.0 technologies to develop four English language skills in their language learning courses through examining their behavioral intention to use the web 2.0 technologies in their language learning courses. This acceptance is recognized through the students' intention to use this technology when they perceive it useful for their learning objectives and not difficult to use. The technology acceptance model (TAM) is employed in this study due to its predictive ability in studies (Teo, 2009). The causal relationships between perceived usefulness (PU), perceived ease of use (PEOU), attitude towards usage (ATU), and behavioural intention to use (BIU) technology are identified in the TAM to reflect the new environment of the web 2.0 technologies. PU means the degree to which an individual believes that using the web 2.0 technologies would enhance his or her performance in the course. PEOU refers to the degree to which an individual believes that using the system would be free of cognitive effort. TAM suggests that actual usage of the system is determined by the users' behavioural intention to use (BIU) the system, which is determined by users' attitude towards using the system and their perceived usefulness and ease of use of the system (Davis, et al., 1989). PU and PEOU have a significant effect on ATU, which in turn impact the

BIU. Moreover, PEOU has also been shown to significantly impact PU (Teo, 2009). Similarly, behavioural intention to use (BIU) the system is posited to be affected by attitude towards usage (ATU). In accordance with the research objective and consistent with the related literature, the technology acceptance model is utilized for this study since it reflects the environment of the web 2.0 technologies usage in the related context. Therefore, the students' acceptance of using web 2.0 technologies to develop four language skills in their language courses is influenced highly with their perceived usefulness of web 2.0 technologies and their perceived ease of web 2.0 technologies use, which in turn influence their attitude towards web 2.0 technologies usage and behavioral intention to use (BIU). This study investigated the following hypotheses:

H1: Perceived usefulness (PU) of the web 2.0 technologies will have a positive influence on attitude towards usage (ATU) of the web 2.0 technologies.

H2: Perceived ease of use (PEOU) of the web 2.0 technologies will have a positive influence on attitude towards usage (ATU) of the web 2.0 technologies.

H3: Perceived ease of use (PEOU) of the web 2.0 technologies will have a positive influence on perceived usefulness (PU) of the web 2.0 technologies.

H4: Attitude towards usage (ATU) of the web 2.0 technologies will have a positive influence on users' behavioral intention to use (BIU) of the web 2.0 technologies.

These hypotheses lead to the research model as demonstrated in Figure 1. It represented a causal relationship schema and used as a point of departure for this study.

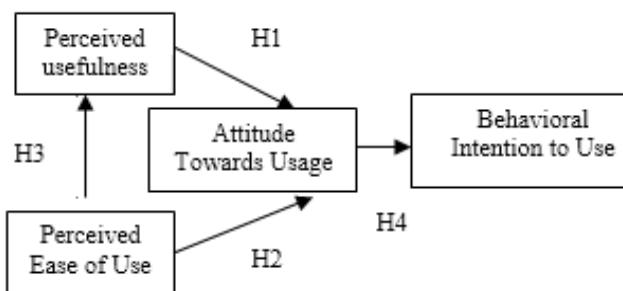


Fig 1. Conceptual Research model: Technology acceptance model (Davis, 1989).

III. METHOD

Before you begin to format your paper, first write and save the content as a separate text file. Keep your text and graphic files separate until after the text has been formatted and styled. Do not use hard tabs, and limit use of hard returns to only one return at the end of a paragraph. Do not add any kind of pagination anywhere in the paper. Do not number text heads—the template will do that for you. Finally, complete content and organizational editing before formatting. Please take note of the following items when proofreading spelling and grammar:

A. Instrument

The instrument to test the proposed hypotheses was a questionnaire. The first section of the questionnaire consisted of demographic items that were described in the "Participants" section of this article. It screened the respondents' background and experience of using the web 2.0 technologies in their language learning courses (reading, writing, listening, and speaking), so that the students' attitudes and beliefs were measured based on their actual experiencing of using the web 2.0 technologies.

The second section of the questionnaire contained twenty-eight items related to the four constructs of TAM: perceived usefulness (PU), perceive ease of use (PEOU), attitude towards usage (ATU), and behavioral intention to use the web 2.0 technologies (BIU). At the end of the questionnaire, there was a place for the students to make suggestions or comments. For each item listed in the questionnaire, respondents were asked to rate their experience of using web 2.0 technologies by circling the number that best represents their perception. Moreover, items used were similar to those that were used in previous studies in the related literature (Joo & Sang, 2013) with some modification to fit the context of the web 2.0 technology use.

B. Measurement scales

Perceived usefulness, perceived ease of use, attitude towards usage, and behavioral intention to use: they are the four constructs of TAM as shown in Figure 1.

Accordingly, the hypothesized measurements included were two measures as independent variables: perceived usefulness and perceived ease of use, and two measures as dependent variables: attitude towards usage and behavioral intention to use.

The variables were operationalized using Likert-scale items measuring the students' perceptions, attitude, and behavioral intention as listed in Tables 1, 2, 3, 4 respectively. Lastly, students' responses were solicited using a Likert seven-point scale coded as, 7: strongly agree; 6: moderately agree; 5: slightly agree; 4: neutral/ no opinion; 3: slightly disagree; 2: moderately disagree; 1: strongly disagree.

C. Participants

The participants in this study were undergraduate students from the Thaksin University from different fields of studies, such as Education, Sciences, Business and Economics. Eighty-eight percent of the respondents were between 18 and 24 years old.

The selected students were from five General English II classes. Those classes are offered for all first year students. The selection was based on the following reasons: first, high number of the students in the English courses was university freshmen, which represent typical university students. Next, the students in the General English II courses normally had an experience using web 2.0 technologies to study four English language skills before they enrolled in their General English II courses. Finally, the selected students were the most accessible groups due to class time limitation and the criterion guidelines.

D. Research procedure

This study was to investigate the language learners' perception about using web 2.0 technologies to develop four English language skills in their English language learning. The questionnaires and demographic forms were distributed to all participants after obtaining the students' approval via a written consent forms. Then, the respondents completed both forms while they could ask any questions they may suspect. They were also asked to write any comments or suggestions regarding the use of web 2.0 technologies in the third section of the questionnaire. The experiment took place in regular classrooms outside class times. The experiment took around thirty minutes to complete.

E. Data collection and analysis

Two questionnaire forms were administered to a hundred students. However, eighty-eight data responses were employed as the responses of five students were deleted; four respondents did not fit the criterion of having six weeks or more experience using the web 2.0 technologies to develop four English language skills, while the other three respondents did not follow the directions in using the Likert-scale. The students' responses of ranking their perceived usefulness and ease of use of the web 2.0 technologies, their attitude towards using the web 2.0 technologies, and their intention behavioral to use them were recorded. For the demographic questionnaire, the information was coded as it was answered. After the data was collected and checked for completion. Since this study employed a structural equation modeling to develop the relationships among its factors: perceived usefulness (PU), perceived ease of use (PEOU), attitude towards usage (ATU), and behavioral intention to use (BIU), a path analysis test was conducted to examine the causal relationships between the independent variables and the dependent variables in the hypotheses.

IV. RESULTS

A structural equation modeling approach was employed in this study to represent the casual relationships among the model factors: perceived usefulness and perceived ease of use of the web 2.0 technologies, attitude towards usage of the web 2.0 technologies, and behavioral intention to use the web 2.0 technologies. A multiple regression analysis was conducted to examine the effect size and significance of the hypothesized causal relations between the independent variables of this study (PU, PEOU, ATU) and the dependent variable (BIU) as shown in Figure 1.

Also, validity and reliability tests where completed before testing the proposed hypotheses. The validity test that was completed to check the construct validity of the items used using the factor analysis test as a measure and descriptive statistics. The reliability test completed was to evaluate the internal consistency of the items used in the instrument using Cronbach's alpha as a measure.

A. Evaluation of the Measurement Model

In this study, the data from the questionnaire underwent the reliability analysis. Cronbach Alpha was used to determine the reliability of the 4 dimensions of TAM in which each dimension consists of multi-item variables. The internal consistency is significant for all the dimensions as the reliability of all variables ranged from 0.75 to 0.83 which exceeded the minimum of 0.70 as suggested by Nunnally (1978).

B. Factor Analysis

A factor analysis was conducted to test the construct validity of items in the instrument. The values of the factor loading of the items used in the questionnaire show that items used are valid to measure the students' PU, PEOU, ATU, and BIU in using the web 2.0 technologies to develop four English language skills in their language learning courses.

C. Hypothesis testing

The first test completed was the Shapiro-Wilk test to check the normality of the collected data in order to decide the appropriate statistical test used to test the proposed hypotheses. The result of the Shapiro-Wilk test indicated at 95% confidence level that the data came from a normal distribution; the p-value of PU, PEOU, ATU, BIU was .067, .073, .104, .091 respectively which all are greater than .05. Therefore, a multiple regression analysis was conducted to complete the hypotheses testing as discussed below. The causal relationships between the four factors of TAM, which constitute the independent and dependent variables of the hypotheses were evaluated through the values of the correlation coefficients, Beta, R Square (R²) values, and the significance statistics of those relationships. Note that Beta shows the direct measure of the independent variable on the dependent variable, while R Square shows how much of the effect on the dependent variable is contributed by independent variable.

D. Descriptive Analysis

Descriptive statistics was used to identify the respondents' Web 2.0 technology acceptance levels. The results show that all the respondents rated the items positively within all four dimensions of TAM since the mean scores for all corresponding multi-item variables ranged from 3.35 to 4.2 and were within the upper third of the normative distribution.

Descriptive statistics was employed to identify the respondents' Web 2.0 technology acceptance levels. The results (Table 4 above) showed that all the respondents rated the items positively within all four dimensions of TAM. The mean scores for all corresponding multi-item variables ranged from 3.50 to 4.24.

For the Perceived usefulness dimension, the result showed that the top-ranked item was Web 2.0 technologies can help improve my reading skills with the mean score 3.97, while the lowest mean score ($M=3.50$, $SD=.704$) was ascribed to item 6. The results showed that Web 2.0 tools are acceptable and preferred among students for strengthening their four skills and partly agree with the findings received from the demography section which illustrated that reading, writing, in

contrast to speaking were rated as least interesting in the experiment.

The findings of descriptive analysis for the dimension of Perceived Ease of Use showed the highest mean score ($M=4.04$, $SD=.695$) for item 13, and the lowest mean score ($M=3.66$, $SD=.607$) for item 17, which demonstrated that although the respondents agree that Web 2.0 tools are acceptable and easy for collaboration and interactions among them to develop four English language skills in general, they do not really consider them user-friendly for speaking and listening skills.

The results of descriptive analysis for Attitude towards Usage dimension showed that the highest mean score ($M=4.21$, $SD = .518$) for item 21, and the lowest mean score ($M = 3.67$, $SD = .514$) for item 19. This means that the result supported the findings for Perceived Ease of Use dimension: Students have fun in using Web 2.0 tools for learning four skills in general, however, they are not really comfortable in their learning.

The results regarding the fourth dimension of Behavioral Intention to Use showed that the highest mean score ($M=4.24$, $SD = .534$) was obtained for item 26, while the lowest mean score ($M = 3.81$, $SD = .598$) was received for item 24. This leads to the positive assumption that the respondents are interested to employ web 2.0 tools for their language learning in the future.

In addition, a further testing was conducted to evaluate whether or not the students' experience of using the web 2.0 technologies before attending their language learning courses to develop four English language skills will impact their behavioral intention to use the web 2.0 technologies. To achieve this evaluation, an independent samples t-test was conducted to compare the responses between the two groups. Regarding to the results of the Independent Samples t-Test, the significance (2-tailed) p-value = .637 which is greater than .05. Thus, there is no significant difference between the responses of the two groups. In other words, there is no significant difference between the students' responses for those who have prior experience using the web 2.0 technologies, and those who do not have prior use of the web 2.0 technologies

V. DISCUSSION

In general, the results show that students' perceptions of usefulness of the web 2.0 technologies and ease of use have an influence on their attitude towards using the web 2.0 technologies, which directly affect the students' behavioral intention to use the web 2.0 technologies to develop their four English language skills and other contexts. To conclude, the web 2.0 technologies were perceived beneficial and easy to use in language learning courses.

Firstly, students' perception of the usefulness of the web 2.0 technologies (PU) in their language courses reveals a positive influence on their attitude towards using the web 2.0 technologies (ATU) ($p = .000$). In addition, the standardized Beta of PU of .764 shows a strong relation between the students' perceived usefulness of the web 2.0 technologies to develop four English language skills in their language learning

courses and their attitude towards using the web 2.0 technologies. This can be interpreted that there is a strong correlation between the students' perception of perceived usefulness of the web 2.0 technologies and their attitude towards using them to develop their four English language skills in their language courses. Besides, the standardized beta value is also positive. This means that when students agreed that the web 2.0 technologies are beneficial in their language courses, their attitude towards using them also rises. Furthermore, the R2 figure of .492 reveals that nearly half of the variance in the students' attitude towards the web 2.0 technologies is explained by the students' perceived usefulness of the web 2.0 technologies. Thus, H1 is supported.

Secondly, H2 is also supported. The students' perceived ease of use of the web 2.0 technologies to develop their four English language skills in their language courses shows a positive influence on their attitude towards using the web 2.0 technologies ($p = .004$). The standardized Beta of PEOU is .652. This shows a strong correlation between the students' perception of the web 2.0 technologies ease of use and their attitude towards using it in their language courses. Besides, the R2 that is equal to .436 indicates that slightly more than 40 percent of the variance in the students' attitude towards the web 2.0 technologies is explained by the students' perceived ease of use of the web 2.0 technologies. Thus, H2 is supported.

Next, the statistical results of testing H3 shows that students' perceived ease of use of the web 2.0 technologies influence their perception of the web 2.0 technologies' usefulness. The significance level was .001. Therefore, the relation between the students' perceived ease of use and their perceived usefulness of the web 2.0 technologies is statistically significant. The standardized Beta of PEOU on PU is .753, which shows a positive correlation between the students' PEOU and their PU of the web 2.0 technologies. This means that there is a strong correlation between the students' perception of the web 2.0 technologies' usefulness and their perception of the web 2.0 technologies' ease of use. This describes that students agree that the web 2.0 technologies are beneficial when they found it is easy to use. Besides, the R2 of .548 shows the variance in the students' perceived usefulness of the web 2.0 technologies which are explained by their perceived ease of use of the web 2.0 technologies. That is to say slightly more than 50 percent of the change in the students' perceived usefulness of the web 2.0 technologies is influenced by their perceived ease of use of the web 2.0 technologies. This can be interpreted that the web 2.0 technologies are beneficial when students found it is easy to use.

Finally, the results showed that the students' attitude toward using the web 2.0 technologies enhances their behavioral intention to use the web 2.0 technologies to develop four language skills in their language learning courses. The relationship between the students' ATU and their BIU of the web 2.0 technologies is positive and statistically significant. ($\text{Beta} = .486$; $R^2 = .365$; $p = .03$). This means that there is a correlation between the students' attitude towards using

the web 2.0 technologies and their behavioral intention to use it in the future. Therefore, H4 is supported.

The findings of this study validate the theoretical framework of TAM. That is to say, there is a positive relationship among the variables of TAM: PU, PEOU, ATU when predicting the students' acceptance of using the web 2.0 technologies to develop four English language skills in their language learning courses through their behavioral intention to use the web 2.0 technologies. The students' perceived usefulness and perceived ease of use are positive when establishing the students' attitude towards the web 2.0 technologies, which in turn predict the students' behavioral intention to use the web 2.0 technologies in the future or in any other contexts. The finding is consistent with the studies conducted by Park (2009) because the causal relationship has previously shown in many teaching and learning situations.

This may be implied that students accept the use of web 2.0 technologies to improve four skills of language learning as they perceive them usefulness. This finding is consistent with the previous studies using TAM in the contexts of e-learning (Liu et al., 2005; Park, 2009; Teo 2008) showing that TAM is an effective model to explain the adoption of similar technologies.

In addition, students made comments that gave further insights about their experience using the web 2.0 technologies in their four skill areas that are worth being explained. Two students felt that the web 2.0 technologies do not improve their speaking skills. Therefore, they prefer to orally communicate with native speakers of English. This comment reflects on how the web 2.0 technologies might have been employed in the related speaking and listening courses. It appears that certain features of the web 2.0 technologies are not beneficial to enhance the students' speaking skills and their engagement. Furthermore, three students felt that using the web 2.0 technologies is cost-effective as the student saved the money spent on purchasing books. This shows that there are other challenges related to using web 2.0 technologies that may affect the students' attitudes towards using the tools, apart from their perceived usefulness and ease of use of the web 2.0 technologies.

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