

The Influence of Study Mode on the Confidence in Using Technology for Learning: An Empirical Study in Hong Kong Higher Education

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Abstract—The purpose of this study is to investigate the difference between students with different study mode on the confidence in using technology for learning in Hong Kong higher education. A survey methodology was employed and 209 questionnaires were collected in a Hong Kong university. The finding shows that part-time students were more confident than full-time students in using technology for learning.

Index Terms—Confidence of using technology for learning; Hong Kong higher education, Study mode

I. INTRODUCTION

In Hong Kong, students use technology for learning like internet, software or programming. A number of students have experienced with word processing, searching from the internet and educational software. In high school, they might not use technology learning frequently. In university life, they always are required to use technology for learning. For example, they need to use blackboard to download notes, use Microsoft Office to complete their reports or projects and send email to contact professors or instructors. In addition, there are many technology related courses in some departments of universities. Students have more opportunities to access the educational technology, such as AutoCad, SPSS, Microsoft Office, Compiere, Arena etc. Besides, there are related computer courses to help student understand and learn programming, such as C, Java. Past study has examined that full-time students have more confident in using technology for learning than part-time students [1]. However, it appears that no studies have investigated this related area in Hong Kong. This study aims to fill this research gap and answer the research question “do the full-time students get more confidence in using the technology for learning in Hong Kong higher education?”

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II. LITERATURE REVIEW

In university, students are in full time and part time mode. Full time mode of study is provided by students who have no full-time job while part time mode of study is offered to students who have full time job. Part-time students are busy in their working and they have less opportunity to use technology for learning [1]. However, other study shows that part-time postgraduate students have more confidence in using technology for learning than full-time students [2].

In addition, students are not willing to learn if they do not have sufficient confidence in using technology for learning. Besides, they may create fears of the topic, skill or situation because they have negative experience in using technology for learning. In contrast, they might believe incorrectly that they already know it and then overlook the important details in the learning activities [3]. To avoid this situation, three strategies are obtained. They are the learning requirements, success opportunities and personal control. Learning requirements is a strategy to build a positive expectation for success. Success opportunity is a method to enhance the students' beliefs in their competence. Personal control is a tactic to let the learners know their success more clearly based on their efforts and abilities [3].

Based on the above review, it is reasonable to believe that full-time undergraduate students have more time to use new technology for learning. Therefore, we hypothesize:

H1: Full-time undergraduate students are more confident in using technology for learning than part-time students, in Hong Kong higher education.

III. METHODOLOGY

In this study, a questionnaire survey has been conducted to collect the data in order to examine the gender differences in using the technology for learning. The ‘confidence’ variable of the modified Fennema-Sherman Attitudes Scales [4] has been used in this questionnaire, which is used to investigate the gender difference of students' confidence in using technology for learning. This variable consisted of five questions (Table I) which were rated from a 5-point Likert type scale, ranging from 1 “strongly agree” to 5 “strongly disagree”.

TABLE I
ITEMS OF QUESTIONNAIRE

Question	Items	Factor loading
1	I am sure I can do advanced work in technology.	0.712
2	I am sure I can use technology.	0.516
3	I think I could handle more difficult technology problems.	0.711
4	I can get good grades in the courses related to technology.	0.726
5.	I have a lot of confidence when it comes to the use of technology.	0.774

Mode of study was another personal characteristic in using technology for learning. Mode of study divided into two groups, which were full-time students and part-time students.

After the questionnaire was finalized, the pilot study was carried out before distributing questionnaires to a large number of people. We had to test the questionnaire and made sure that it works as intended. Piloting questionnaire allows you to judge whether the chosen questions are effective to collect the information we want. In addition, any problems with the questions can be identified by the pilot study. For example, piloting helps to rephrase the wordings of the questions, the order of the questions and the reduction of the non-response rates [5]. Thus, pilot study is an essential part of the research.

During the pilot study, twelve questionnaires were then distributed to my classmates. They were asked to complete the questionnaires without any explanation in order to find out whether they understood the questions. Then, they were asked to give feedback individually. It was found that some of the questions were similar and difficult to understand. So, the similar items have been removed and some questions were rephrased so that the questions were easier to understand. After the questionnaire was modified, ten questionnaires were distributed to other students. It was found that they understood the content of the questionnaire and they thought the length of the questionnaire was moderate.

After the pilot study, the questionnaires were distributed to the students. The target group of this study was from the year 1 to year 3 university students in a Hong Kong local university. They have all experienced with the educational technology in the course or in high school. So, the information about the students' motivation in using technology for learning can be collected for this target group.

Then we distributed the questionnaire to this target group via email or during the lecture. Finally a large number of questionnaires were collected.

Totally 350 questionnaires were distributed and 209 copies were returned. Thus, the response rate was:
 = collected samples / total numbers of questionnaires distributed
 = 209/350 x 100%
 = 59.7%

All the returned questionnaires were useful since the data was relevant and the questionnaires were fully completed.

Prior to bivariate analysis and t-test analysis, data was examined to ensure that it was amenable to the use of these techniques. This involved examining the responses to each question for invalid responses and missing values. Then reliability analysis including Cronbach alpha, were used to test the reliability of the variable. The Cronbach alpha value of confidence was 0.886. Normally, the alpha value should be greater than 0.7 for well established measures [6]. As no alpha value in this survey study was less than 0.7, the results were considered to be consistent and reliable.

In addition to Cronbach alpha, a factor loading of the variable was obtained. Factor loadings less than 0.3 were omitted as it is accepted that only factor loadings on the attributes greater than 0.3 were suitable for interpretation [7]. Since the factor loadings for the 5 items of confidence ranged from 0.516 and 0.726 (Table I), all 5 items were retained.

IV. RESULTS

Two hundred and nine students returned the questionnaire. Of the questionnaire returned, 51.7% were completed by males and 48.3% were completed by females. 35.1% of respondents were under age 21, 58.3% of respondents ranged between 21 and 25, 4.7% of respondents ranged between 26 and 30, 1.9% of respondents ranged between 31 and 35. 28.4% of respondents were year 1 students, 35.5% were year 2 students and 36% were year 3 students. In addition, 86.6% were full time students and 13.4% were part time students.

The means and standard deviation were used to conduct the bivariate analysis. The result was shown in the Table II. The mean value of full-time students was 2.9448 while that of part-time students was 2.1143. It showed that part-time students were more confident in using technology for learning than full-time students.

TABLE II
MEANS AND STANDARD DEVIATION

	Study mode		Std. Deviation	Std. Error Mean
	N	Mean		
Confidence	Full-time	181	2.9448	.81625
	Part-time	28	2.1143	.64044

The t-test was then used to compare the two groups of students in confidence about using technology for learning. There were significant difference (t = 5.141, p < 0.001) between full-time students and part-time students with different confidence levels in using technology for learning. This finding was not consistent with other research [1].

However, this finding was supported by other study [2]. Thus, the hypothesis H1 was rejected.

V. DISCUSSION

From the result mentioned in previous section, the hypothesis H1 was rejected. It found that there was significant difference between full-time students and part-time students with different confidence level in using technology for learning in Hong Kong higher education. In addition, the mean values showed that part-time students were more confident in using technology for learning than full-time students. This finding was supported by previous study [2]. In this study, most of the older students were studying in part-time mode. Conversely the younger students were mostly studying in full-time mode. Part-time students might use technology frequently in their working environment and they adapted different new technologies for the job requirements. As part-time students used the related course technology in their daily jobs, they built up their confidence in using different technology through their work. Conversely the full-time students were the first time to use the related technology in the learning environment and they were only required to access different software or other course related technology in university only. As a result, they do did not have sufficient time to learn how to use the new technology for learning and they had less confidence in using such technology.

VI. CONCLUSION

It is concluded that part-time students are found to have more confidence in using technology for learning than full-time students. This study contributed to impact of study mode on the confidence in using technology for learning in Hong Kong higher education. Based on this study's findings, we can understand more on both full-time and part-time students' perception of confidence in using technology for learning. These findings can also enable the university's educators to integrate technological components in their courses to enhance students' confidence in using technology for learning.

The major limitations of this study were the small sample size and used only the survey technique. In the future study, qualitative technique like interview should be used to explore the reasons why part-time students have more confidence in using technology for learning than full-time students in Hong Kong higher education. In order to improve the generalization, we should focus on all Hong Kong's universities.

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