STUDENTS' AGE DIFFERENCE OF CONFIDENCE IN USING TECHNOLOGY FOR LEARNING IN HIGHER EDUCATION

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ABSTRACT
Some past studies find that older students have more confidence in using technology for learning than younger students but some other studies find the opposite result. However, it is found that there are a few researches studying on the age difference in the perception of using technology for learning in Hong Kong. Therefore, the aim of the study is to examine the age difference of confidence in using technology for learning in the Hong Kong higher educational institutions. In this study, it employed a survey methodology to collect a total of 211 questionnaires from one of the universities in Hong Kong. The findings show that older students had more confidence in using technology for learning than younger students.
Keywords Age difference; Confidence; Hong Kong higher education

STUDENTS' CONFIDENCE IN USING TECHNOLOGY FOR LEARNING

Students are not motivated 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 (Keller, 2010). 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 (Keller, 2010).

STUDENTS' AGE DIFFERENCE IN USING TECHNOLOGY IN USING TECHNOLOGY FOR LEARNING

Age difference is another personal factor that influences students' motivation in using technology for learning. Age difference in using technology has been reported in some researches. Because of the time constraint and other restrictions of life, distance education becomes popular for people to enhance their knowledge in their area of interest, especially for adults who cannot continue traditional face-to-face classroom education (Dabaj, 2009). Educational technology seems to solve the distance limitation problem. However, Dabaj (2009) revealed that the older students are more likely to attend the traditional face-to-face classes in university than online education. Besides, he also pointed out that older students have difficulty of the nonverbal communication and incompetence of using technology. As the rapid changing in the technology, older students may not adapt the changes and then it will lower their motivation in using technology for learning. However, recent study shows that older student can use the technology to learn than younger students (Maria & Hefer, 2011).
Based on the above evidence, we hypothesize:
H1: Older students have more confidence in using technology for learning than younger students.

PURPOSE AND RESEARCH QUESTION

As it appears that no study has examined the age difference of confidence of using technology for learning in Hong Kong higher education. In this study, the purpose of this study is to fill this research gap and examine the research question "what is the students' age difference of confidence in using technology for learning in higher education?"

METHODODOGY

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 (Kahveci, 2010) 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 1) which were rated from a 5-point Likert type scale, ranging from 1 "strongly agree" to 5 "strongly disagree".

Table 1 – 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

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 us to judge whether the chosen questions are effective to collect the information. In addition, any problems with the questions can be identified by the pilot study (Lowe 2006). For example, piloting helps to rephrase the wordings of the questions, the order of the questions and the reduction of the non-response rates (Oppenheim 1992). 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 appropriate.

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.

In total, 350 questionnaires were distributed and 211 copies were returned. Thus, the response rate was:
= collected samples / total numbers of questionnaires distributed
= 211/350 x 100%
= 60.29%

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

Prior to bivariate analysis and ANOVA 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 (Nunnally, 1978). 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 (Comrey, 1973). Since the factor loadings for the 5 items of confidence ranged from 0.516 and 0.726 (Table 1), all 5 items were retained.

RESULTS

211 students returned the questionnaire. Table 2 shows that demographic statistics of respondents. 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, 85.8% were full time students, 13.3% were part time students and 0.9% were exchange students.

Table 2 - Statistics of the personal data of respondents

Personal Details	No. of respondents	Percentage of respondents (%)
Gender		
Male	109	51.7
Female	102	48.3
Age		
< 21	74	35.1
21-25	123	58.3
26-30	10	4.7
31-35	4	1.9
Year of Study		
Year 1	60	28.4
Year 2	75	35.5
Year 3	76	36.0
Mode of study		
Full time	181	85.8
Part time	28	13.3
Exchange	2	0.9

Age difference was another personal characteristic in examining the use of technology for learning. In this study, age were divided into four groups aged <21, 21-25, 26-30 and 31-35. The means and standard deviation of four groups were found and shown in Table 3. One way ANOVA was then used for testing the differences between the means of four age groups.

The mean values for four age groups are showed in Table 3. The mean value with aged < 21 was 3.09, aged between 21 and 25 was 2.82, aged between 26 and 30 was 1.72 and aged between 31 and 35 was 1.70. Thus, older students were more confidence than younger student in using technology for learning. This finding was supported by Maria & Hefer (2011).

Table 3 – Means and standard deviation of difference age groups

Age Group	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
< 21	74	3.0865	.86647	.10073	2.8857	3.2872	1.00	5.00
21-25	123	2.8244	.78619	.07089	2.6841	2.9647	1.00	4.80
26-30	10	1.7200	.41312	.13064	1.4245	2.0155	1.20	2.60
31-35	4	1.7000	.34641	.17321	1.3488	2.2512	1.30	2.20

In addition, the ANOVA test indicated that there was significant difference among four groups ($F= 10.757$, $p < 0.001$).

Based on the survey result, the hypothesis H1 was supported.

DISCUSSION

The survey results showed that older students had more confidence in using technology for learning than younger students and the hypothesis H1 was accepted. This finding was not consistent with Dabaj (2009) and Sue & Robert (2006). However, the finding was supported by Maria & Hefer (2011). They found that part-time undergraduates had more confidence than full-time students in using technology for learning. In this study, most of the older students studied in part-time study mode while the younger students studied in full time mode. Firstly, older students might use technology frequently in their working environment and they adapted different new technologies for the job requirements. Therefore, the older students could build up their confidence in using different technology though their work. For the younger student, they have less opportunity to use the technology in the learning environment and they were encourage to access different software or other course related technology in school only. Therefore, they have less practice in using the new technology. As a result, they had less confidence in using technology for learning.

CONCLUSION

It is concluded show older students are found to have more confidence in using technology for learning than younger students. This study contributed to students' age difference of confidence in using technology for learning in Hong Kong higher education. Based on this study's findings, we can understand more on both younger and older 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 older students have more confidence in using technology for learning than younger 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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