The Role of Teacher-Teaching Experience in VAE Teachers' Integration of ICT

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Abstract: The introduction of Information and Communication Technology (ICT) and its integration has made a significant impact on the Malaysian education system. Its rapid development has become a major priority in achieving the nations' Vision 2020 of becoming a fully developed country by the year 2020. Despite its huge potential advantages, the Visual Art Education (VAE) teachers were reportedly not utilizing the full potential of ICT in the Visual Art classroom. Based on the literature, it appeared that only a limited published research had tried to explain the influence of teachers' experiences on their ICT integration (ICTInt). The purpose of this study **is** to explore the VAE teacher- teaching experience as moderator variables in their decision to integrate ICT. The Technology Acceptance Model (TAM) was used as a theoretical grounding of the study. Based on TAM, perceived usefulness (PU) and perceived ease of use (PEoU) were two specific beliefs that determine individuals' ICTInt. Self-reported data was gathered through an on-line survey from 296 VAE teachers in the state of Selangor, Malaysia. The findings revealed that both PU and PEoU were able to explain 65 percent of the variance toward their ICTInt. The findings also show that teacher-teaching experience was found to influence the relationship between their PU and PEoU toward ICTInt. It is expected that findings derived from this study will contribute toward assisting the school administrator and the Ministry of Education in ensuring all teachers would pose and instill a degree of ICT integration.

Keywords: Perceived usefulness, perceived ease of use, ICT integration

Introduction

Over the past two decades, the Malaysian government has been proactive in fulfilling the demands of a technologically literate, creative and innovative workforce for the Information Age. As an important agent of change, teachers are required to make a complex adjustment and substantial rethinking of new possibilities in teaching. However, local researches have indicated ICT integration is far from reaching its target. Many senior teachers are also reported reluctant to change their conventional way of teaching [1]. The notion of users' experience having an impact on their decision to integrate a proposed technology has been highlighted by previous researchers [2]. The embracement of ICT in VAE classrooms will provide opportunities for students to construct their own knowledge, meaning and solution. The potential usages of ICT in conducting successful art instruction have also been noted through its simulation, manipulation and creative expression activities [3]. Despite those advantages, many VAE teachers were reported to be reluctant to embrace ICT into the VAE classroom [4]. Given the importance to accelerate the integration of ICT, the study attempts to explain the relationship between VAE teachers' perceived usefulness (PU) and perceived ease of use (PEoU) toward ICT integration (ICTInt). It is envisaged that the findings of this study will act as a guide and reference for school administrator and the Malaysian government toward establishing a standard of successful integration of ICT.

1. Theoretical Framework and Hypotheses Development

Adopted from the Technology Acceptance Model (TAM), users' PU and PEoU were two specific beliefs that determine their decision to integrate a proposed technology. PU is defined as individual degree of beliefs that using particular technology would enhance job performance; while PEoU is defined as individual's degree of beliefs that using particular technology would free them of any effort [5]. Although users might perceive a proposed technology as being advanced, they will not adopt it if they think the technology cannot facilitates them [6]. The first hypothesis was formulated as:

H_1: The VAE teachers' PU and PEoU will positively influence their ICTInt.

In determining a potential moderator that might influence teachers' intention to integrate ICT, their teaching experience was also considered. Previous research on students' acceptance of Web-based courseware by Stoel and Kyu [7] found that as the experience with technology increases, users' perceive it to be easier and more useful, which in turn leads to more usage. In similar vein, Ramayah [1] research found that prior experience has moderated the relationship between PU, PEoU and computer usage. Based on the following justifications, the second hypothesis is stated as below:

H_2: The relationship between the VAE teachers' PU and PEoU toward ICTInt is moderated by their teaching experience.

2. Research Methodology

This study employed a quantitative research method through 20 items on-line survey. Both PU and PEoU questions were adopted from the TAM questionnaire [5]. The items used to measure users' ICTInt were adopted from the UTAUT questionnaire [8]. A five point Likert-type scale was employed, starting with SD as strongly disagree, D = disagree, U = undecided, A = agree and SA = strongly agree. The VAE teachers in the state of Selangor (n=887), Malaysia were identified as a target sample of the study. Out of that number only 296 (33.4%) teachers responded and thus become the respondent of this study. This response rate was acceptable for an on-line survey [14].

3. Research Findings and Results

3.1 Reliability and Validity of the Instrument

The Cronbach's alpha coefficient was used to test the reliability of items of the questionnaire. As can be seen from Table 1, all the measurement items were considered to be good (exceed 0.80) [15]. The result also indicates a large correlation between items (exceed 0.50), thus confirming the reliability of the instrument.

Table 1: Cronbach's Alpha and Item-to-total Correlation Values

Measurement Items	No. of Items	Cronbach's Alpha	Item-to-total Correlation
Perceived Usefulness (PU)	6	0.882	0.659 – 0.735
Perceived Ease of Use (PEoU)	6	0.881	0.620 – 0.742
ICT Integration (ICTInt)	8	0.806	0.500 – 0.858

A factor analysis was used to test the construct validity of the questionnaire. The result suggested that all items were represented by three factors. The KMO value was 0.860 and the significant level was .000. These results thus indicate that all items are tapping and collapsing into the same constructs [15].

3.2 Descriptive Analyses

This sub-section presents the descriptive analyses of teachers' teaching experience. Teachers' maximum years of teaching experience were divided into three groups, which represent the low, moderate and high experience teachers. As can be seen from Table 2, a majority (67.9%) of the respondents were categorized as low experience, where their teaching experience was less than eight years on average.

Table 2: Summary of Characteristics of Respondents of the Study

Characteristics	Group	Cases (n)	Percentage (%)
Teaching Experience	Low Experience	201	67.9
	Moderate Experience	60	20.3
	High Experience	35	11.8

3.3 Hypothesis Testing

H_1: The VAE teachers' PU and PEoU will positively influence their ICTInt.

The result reported from Table 3 shows that the significant F-Change value was highly significant ($p<0.01$). The coefficient determination (R-square) value was found to be 0.651; which indicates that 65 percent of the variance of the VAE teachers' ICTInt can be explained by their PU ($B = 0.77$, $p<0.05$) and PEoU ($B = 0.79$, $p<0.01$). This result indicates that research hypothesis 1 was accepted.

Table 3: Regression Analysis between the Teachers' PU and PEoU toward ICTInt

Model	Unstandardized Coefficients		Standardized Coefficient	t
	B	Std. Error	Beta	
PU	0.112	0.050	.077	2.227*
PEoU	0.733	0.32	.797	23.025**
R Square	0.651			
R Square Change	0.651			
F Change	273.583			
Sig.-F	0.000			

*p<0.05; **p<0.01

H_2: The relationship between the VAE teachers' PU and PEoU toward ICTInt is moderated by their teaching experience.

It is apparent from Table 4, the significant F-Change value in the third block was significant ($p<0.01$) when the moderator was entered in the second block. The R-square value of 0.507 in the third block also indicates that 50.7 percent of the variance between teachers' PU and PEoU toward ICTInt was moderated by their teaching experience. This result indicates that hypothesis 2 was accepted.

Table 4: Moderating Effect of Teachers' Teaching Experience on the Relationship between Teachers' PU and PEoU toward their ICTInt

Variables	Standardized Beta Step 1	Standardized Beta Step 2	Standardized Beta Step 3
Predictors			
PU	.106*	.097*	.075
PEoU	.633**	.597**	.853**
Moderator			
Teaching Experience		-.251**	.213
Interaction Terms			
PU*Teaching Experience			-.680**
PEoU*Teaching Experience			-.196
R Square	.429	.491	.507
Sig. F-Change	.000	.000	.010

*p<0.05; **p<0.01

Two graphs were drawn in showing the moderating effect of teachers' teaching experience. Firstly, teachers' PU and PEoU were categorized into two levels (low and high) based on its median score. From Figure 1, it is apparent that ICTInt among the VAE teachers who gained low teaching experience increase dramatically when ever their level of PU and PEoU was high. This finding also confirms that VAE teachers' teaching experience was moderate the relationship between their PU and PEoU toward ICTInt.

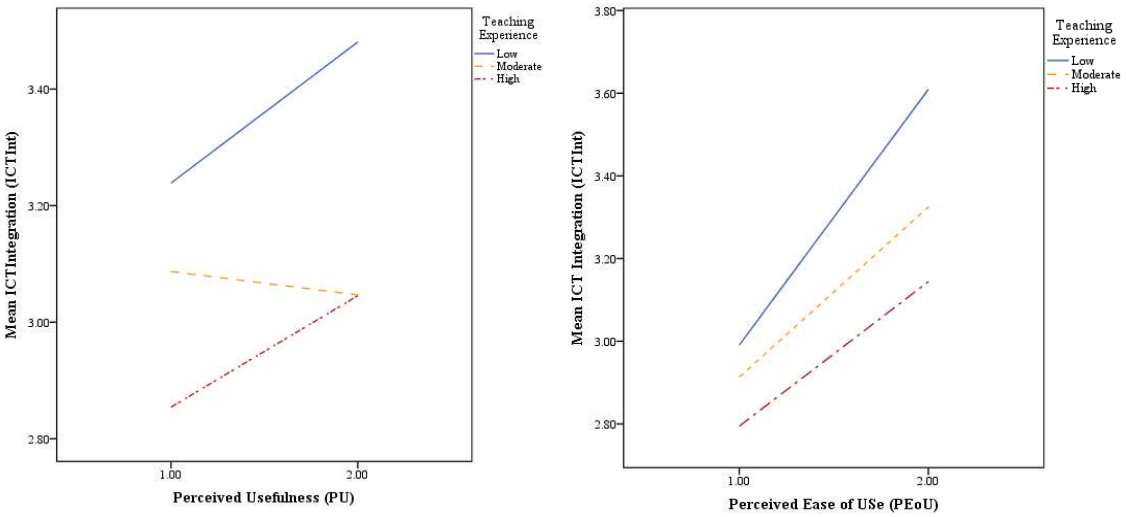

Figure 1: The Moderating Effect of Teachers' Teaching Experience on the Relationship between Teachers' PU and PEoU toward ICTInt

4. Discussion

The aim of the study is to test the relationship between the VAE teachers' PU and PEoU towards their ICTInt in the VAE classroom. Result of this study found that both PU and PEoU have positive significance effect on the VAE teachers' ICTInt. This finding is consistent with beliefs postulated in the TAM and UTAUT. It is confirmed that individuals' integration of technology is increased whenever the technology is perceived to be useful and easy to be used [1]; [6]. In ensuring better acceptance to the proposed technology, it is also possible to conclude that the technology should be perceived as better than the existing ones

[3]. The result from this study also shows that teaching experience does moderate the relationship of both the teachers' PU and PEoU toward ICTInt. This result support previous research that individuals' experience should be considered in determining their intention to integrate proposed technology [2]. The result indicates that when a teacher becomes comfortable and confident with their teaching, they are less likely to be attracted to integrate ICT into their instruction.

5. Implication and Conclusion

The result of this study demonstrates that the VAE teachers' PEoU was the more influential driver than PU in determining their ICT integration. Therefore, considering teachers' expectation toward ICT functions are required in proposing its usage in classrooms. The authorities (viz. the Ministry of Education) need to reflect on suggestions to better meet teachers' performance expectations. Basically, when ICT is perceived easy to use, teachers feel it is more useful; therefore, they will integrate it. Further, the result of the present study also suggests that teachers who have experience and confident with their subject area, are more likely to perceive the usefulness and ease of use of ICT, thus affecting their decision to integrate it [7]. Finally, the study suggests the needs of ongoing professional development courses, sufficient facilities and continues supports from authorities in ensuring teachers are ready to adopt ICT effectively into their instruction. Teachers' training colleges and universities must also take full responsibility in producing knowledgeable, skilful and confident teachers.

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