Attitudes and Technology Integration among ESL Secondary School Teachers in Sabah

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Abstract

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Technology integration in teaching and learning activities has become one of the debatable issues among educators in recent years, especially since many countries have invested a large portion of their yearly budgets on technologies in education. As one of the developing countries, Malaysia has also spent millions and planned many programs and strategies to increase the technology integration level of teachers in schools. Despite that, the level of technology integration among teachers in Malaysia still needs a lot of improvement, especially in teachers' attitudes. This study examined English as a Second Language (ESL) teachers' attitudes towards the use of technology in the teaching of English at secondary schools in Sabah. This is crucial to assist in planning for any future programs or trainings by the relevant authorities. The study applied quantitative method and used cluster sampling to choose participants which comprised 100 of ESL secondary school teachers in Sabah Findings of the study disclosed that ESL secondary school teachers in Sabah have positive beliefs and attitudes towards technology integration.

Keywords: ESL teachers, technology integration, attitudes
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Introduction

In the field of education, the growth and development especially in innovation and technology is undeniably at a rapid scale since the turning of the century. Technology, notably in Information Communication Technology (ICT) has become part of our daily life and is also considered as one of the key components of education. Over the last few decades, the importance of integrating technology into teaching and learning process is debated and researched not only among educators but to scholars as well policy makers. Through many studies and research scholars and educators suggested that technology integration improves teaching (Gilakjani, 2017), develops higher order thinking skills (Edwards, 2016) and allows teachers to create more student-centred classroom environment (Toh, Y.,2016).

Because of these expected outcomes, many countries have invested tremendous amounts of money to increase availability of technology in classrooms (Tarman, et al.,2019). Malaysia as one of the developing countries in South East Asian region through its Ministry of Education (MOE) showed the expenditure on education particularly on technology of ICT over the past two decades has skyrocketed tremendously. The government had spent nearly RM6 billion in education technology field such as smart school, which is one of the most capitals intensive investments Malaysian Education System has undertaken.

As a powerful tool, technology would bring about a transformation in education (Chigona, 2015). However, there are challenges and barriers towards the technology implementation in education. The lack of professional development is one of them (Tondeur, et al., 2017). Studies showed that teachers who went to technology related professional development programs (in-service training) are likely to show positive attitude towards the use of technology in their teaching compared to those who don't (NEA, 2008; Gray, Thomas & Lewis, 2010).

Teachers' negative belief and attitude toward technology are another reason for teachers' lack of technology integration in their teaching. Several studies implied that teachers' beliefs and attitude are two of the most important constructs of technology integration (Belland, 2009; Kim, Kim, Lee, Spector & DeMeester, 2013). Teachers' beliefs and attitude contribute towards technology anxiety, which is a negative emotional state by a person when he or she uses technology or technology equipment (Bozionelos, 2001).

Technology usage for the teaching and learning in the classroom is crucial in providing opportunities for students to learn effectively in today's digital era. However, the success of technology integration in teaching and learning process highly depends on the preparation and attitude of teachers. Despite teachers' attitude important role in determining the success of technology integration in their classes, there are few studies that focus on ESL secondary school teachers' attitude towards technology integration in teaching and learning. Therefore, there is a need for further studies to examine the teachers' attitude, especially in Sabah and Malaysia. This article focuses on finding out the attitude of ESL secondary school teachers towards technology integration in their teaching. Specifically, the objectives of the study are:

i.   To study the attitude of ESL secondary school teachers towards technology integration.
ii. To study the significant difference between ESL teachers' attitude towards technology integration by their gender.
iii. To study the significant difference between ESL teachers' attitude towards technology integration by their age.

Literature Review

The success of integrating technology in any educational programme endorsed by the relevant authorities depends heavily on the support, involvement, and attitude of teachers involved. If teachers do not think the programmes organised can achieve their expectations or fulfilling their students' needs, they are very much likely would not attempt to introduce and integrate technology into their teaching and learning. According to Semerci and Aydin (2018), one of the dominant factors that affects the successful use of technology or ICT in the classroom is teachers' attitude. According to Bullock (2004) teachers' attitude is the crucial factor that enables or disables them in their technology adoption. This was further supported by as study by Gonzalez & Harrell (2018) and Andrei (2017).

The factors of attitudes, gender and age on technology integration

Attitude refers to an individual's perception of an object either positively or negatively. According to Panagiotis, et al., (2005) attitude represents mental evaluations about an object based on one's proximity or distance of it. As for teachers' attitude towards technology, it refers to teachers' self-evaluation and self-perceptions regarding how they feel about integrating technology in their own teaching practices.

Focus on teachers' attitude is essential because teachers take on a major role in deciding on the extent to which technology they use or not in the classroom, and to identify teacher negative attitude and to foster the positive ones are crucial if integrating technology in the classroom can be a success (Gilakjani & Leong,2012). Teo, et al., (2016) also argued that the success of technology integration in the classroom heavily depends on positive teacher attitude towards it. This was also supported by Semerci & Aydin (2018) who reiterated that teachers' attitude substantially influence their use of

technology in the classroom. Thus, teachers' attitude play a very significant contribution towards their technology integration in the classroom.

According to Albirini (2006), attitude comprises three elements: affective, cognitive and behavioural. Affective element is the individuals' emotional case; cognitive element refers to the individuals' knowledge and behaviour element is the overt behaviour. Attitude towards technology integration is a person's general feelings towards technology or ICT and any specific computer and Internet related activities (Smith, Caputi & Rawstone, 2000 in Abedalaziz, Sharir & Chin, 2013). To understand about one's attitude towards technology integration, consideration of all these elements is essential.

Regarding gender's effect on attitude of teachers towards technology integration, there were some studies that show male teachers have a more positive attitude towards technology integration in their teaching (Rana, 2016, Gonzalez, et al., 2017). Other research on gender and its relation with ICT usage, although not conclusive, showed that males have more experience and able to utilise ICT or computers better (Brosnan & Lee, 1998; Balka & Smith, 2000). However, recent studies show how females have gained momentum towards ICT usage as shown in some research (Meelissen & Drent, 2008, Krause, et al., 2017).

As for age related studies in ICT usage, research results in Norway by Hernes et al. (2000) discovered how about 77% of the teachers, 25 years or younger stated that they have a good command of the use of internet. There was also around 63% of the teachers, 25 years or younger have a positive attitude towards the use of the Internet in their own teaching, consistent with the findings of Liang and Chao (2002) who discovered that Taiwan younger teachers had higher literacy level on Internet compared to the much older teachers. Recent findings in Turkey, however, by Semerci & Aydin (2018) showed that there is no significant between teachers' ICT willingness by their age.

Methodology

Participants

The study comprised 100 English Language teachers at randomly selected secondary schools in the state of Sabah. They completed the questionnaire through Google forms distributed to their respective schools.

Instruments

The study adapted the instrument from Sánchez, et al. (2012) "In-Service Teachers' Attitude towards the Use of ICT in the Classroom" that comprised two parts. The first part included a descriptive question of the participants' gender. The second part comprised 20 items of a five-degree Likert scale (from 1- strongly disagree to 5- strongly agree). This instrument also consists of a survey on a level of satisfaction towards the training provided for the teacher. However, the researcher did not include it in the study because of its irrelevance with the context of this study. Those 20 items then factorised as three dimensions and three items had been eliminated which resulted a final 17 items, namely Cognitive (9 items) Behavioural (5 items) and Affective (3 items). To test the psychometric quality of the scale, the Cronbach-Alpha coefficient was 0.76 for scale total, which showed an acceptable level of reliability.

Data Analysis

Data analysis for this study utilised descriptive statistics, such as means, standard deviation, and reliability analysis including internal consistency coefficient (Cronbach Alpha) analysis, and univariate statistics, such as independent samples t-Test, one-way ANOVA and Scheffe as a post-hoc using Statistical Packet for Social Sciences 23 (SPSS) package program. Regarding the comparison of means in Likert-type scales, the scores were standardised based on the formula (highest score – lowest score:

number of options: 5-1:5= 0.80). Based on the interval of 0.80, the mean scores between 1.00 to 1.80 was "very low", 1.81 to 2.60 as "low", 2.61 to 3.40 as "modest", 3.41 to 4.20 as "high", and 4.21to 5.00 as "very high"

Results

Descriptive findings on ESL teachers' attitude towards technology integration.

The results of descriptive analysis on English Language teachers' attitude towards technology integration were presented in Table 1.

Table 1: ESL Teachers' Attitude towards technology integration

Item	Component 1: Cognitive	Mean	SD
1	ICT helps me in the treatment of students with special educational needs.	4.28	.726
2	New technologies help me to obtain more resources to evaluate students' performance	4.38	.632
3	The teaching methodology is enhanced using computing resources	4.26	.719
4	ICT provides me access to new sources of information for my teaching subject	4.36	.746
5	I would use internet in my classroom very often.	4.48	.701
6	ICT makes the attention to diversity in my classroom easy	4.44	.643
7	As a teacher, the use of new technologies is still difficult for me	4.40	.569
8	I am willing to receive training in the use of any computing resource to work in my classroom.	4.48	.577
9	ICT tools such as computer and projector are necessary in my classroom.	4.44	.641
	Cognitive Overall	4.39	.661
	Component 2: Behavioural		
10	The integration of computing resources in the classroom encourages the improvement of the teaching learning process.	4.44	.671
11	Students' reading abilities are improved using computing resources.	4.22	.927
12	Despite limitations, I have a positive attitude towards the integration of computing resources in the teaching-learning process.	4.62	.508
13	Students are more motivated when using computing resources in the classroom.	4.28	.494
14	The use of ICT increases my satisfaction as a teacher	4.51	.559
	Behavioural Overall	4.41	.631
	Component 3: Affective		
15	I am willing to collaborate in school educational programs about ICT.	4.34	.794
16	Students learn more easily when using ICT.	4.57	.756
17	I usually find teaching resources for my classes on the internet.	4.28	.954
	Affective Overall	4.39	.834

As shown in Table 1, the teachers have a high level of positive overall attitude (Cognitive, M= 4.39, SD= .661) towards technology integration in education. The same goes to Behavioural, M= 4.41, SD= .631 and Affective, M=4.39, SD= .834. From the result, it shows that the teachers have a positive attitude towards the use of ICT and technology in their everyday lives as teachers. The results showed among the nine items in Cognitive component, two items share the highest mean value with 4.48, which are 'I would use internet in my classroom very often' and 'I am willing to receive training in the use of any computing resource to work in my classroom'. From this result, teachers felt cognitively positive towards integrating technology in their classroom as they feel open to the idea of attending any related trainings to improve their skills in teaching using technology, especially in relation with ICT.

For the second component of Behavioural, there are five items with an overall mean value of 4.41. From the five items, an item of 'In spite of limitations, I have a positive attitude towards the integration of computing resources in the teaching-learning process' gains the highest mean value of 4.62. Overall, teachers have a positive behavioural aspect of attitude towards integrating technology in their teaching-learning activities. The third component of Affective shows an overall mean value of 4.39. The highest percentage of mean for all three items is "Students learn more easily when using ICT" with 4.57. This showed that the teachers know that technology could make a difference in their teaching techniques.

Comparative findings on ESL teachers' attitude towards technology integration by gender

The comparative analysis results on teachers' attitude towards technology integration by their gender were presented in Table 2 below.

Table 2: ESL teachers' attitude towards technology integration by gender

Factor	Groups	N	M	SD	SE	df	t	p
Attitude	Male	45	4.36	.379	.056	98	-0.78	0.435
	Female	55	4.42	.390	.052	95	-0.78	0.434

From the table, it shows the mean scores and independent samples t-Test results of the ESL teachers' attitude towards technology integration by gender. From the score, it indicates there was no significant different for gender, t (98) = -.78, p = .44, despite female teachers (M = 55, SD = .38) attaining higher scores than male teachers (M = 45, SD = .39).

Comparative findings on ESL teachers' attitude towards technology integration by age

To examine whether there is a statistically significant difference between the teachers' attitude towards technology integration by their age, a One-way ANOVA and Tukey as a post-hoc was used. Prior to ANOVA, the homogeneity of the variance within the cases was tested with Levene's test. The test result (p = .910) showed that the distribution is parametric, thus not violating the assumption of normality. The One-Way Anova results in Table 3 showed that there was no significant difference between teachers' attitude regarding their age F (3,96) = .608, p= .612.

Table 3: ESL teachers' attitude towards technology integration by age

Factor	Groups	N	M	SD	SE	df	F	p
Attitude	24 to 34 years old	14	4.27	.36	.097	3	.608	.612
	35 to 45 years old	61	4.41	.36	.046			
	46 to 56 years old	7	4.33	.41	.16			
	56 years old and above	18	4.39	.35	.083			
	Total	100	4.38	.36	.036			

Discussion

The study investigated the attitude of ESL teachers towards integrating technology in teaching and whether their attitude differs subject to the variables of gender and age. Many other factors like school settings may influence effective integration of technology in teaching and learning in an educational setting or even the national education policies. However, of all the factors, teachers have the most prominent role in technology integration in their teaching. Thus, improving teachers' attitude is critical

to an effective integration of technology in school settings. However, there are some visible limitations of the study that require improvement. First, teachers' attitude is one factor that has an influence on teachers' technology integration during teaching and learning activities. Second, the results of the study cannot be generalised to other schools from different states because it was conducted in Sabah. Thus, the teachers' attitude levels from other states might produce different results altogether. The quantitative nature of the study is also another factor that might affect the results. Further research could use both qualitative and quantitative methods to explore factors that affect teachers' attitude towards technology integration. Despite all the limitations, the present study would contribute to the literature and might be useful to improve the technology integration, especially to the ESL teachers all over Malaysia.

The results of the study revealed that the ESL teachers have a high level of positive overall attitude towards integrating technology in teaching. This result corresponded with the findings of other studies (Mollaei, & Riasati, 2013, Eyyam, et al., 2010; Lau & Sim, 2008; Özdamli, et al., 2009). The findings also illustrated that there is no significant difference between teachers' attitude towards technology integration regarding their gender. This concurred with other research findings (Cavas, et al., 2009; Kusano, et al., 2013). The findings of the study also showed that there is no significant difference between teachers' technology integration regarding their age. This is contrary to some previous studies that argued that there is a significant difference between age and teachers' attitude towards ICT use (Cavas et al., 2009; Seraji et al., 2017). The studies showed that younger teachers' attitude towards computer is more positive and lower computer anxiety than older teachers. Findings by Lau and Sim (2008) also supported the claim that age is a significant factor in which in their study the higher age group teachers use computer technology more frequently than the younger teachers and are keen to adopt technology in their teaching.

Conclusion

This study shows that how ESL teachers in Sabah aspire to integrate technology in their teaching as indicated by their positive attitude towards the technology. To have teachers with a positive attitude towards technology benefits any school as the country moves forward towards Industrial Revolution 4.0 where technologies play a vital part in developing the nation. The results of the study showed that all the ESL teachers embrace the idea to integrate technology in their teaching. This positive attitude is an important sign of willingness towards an effective integration of technology. As for the findings of the present study, there are no significant differences regarding age. The same goes to gender, as it is not a determining factor in the attitude towards technology integration among the ESL teachers in Sabah. Thus, as a conclusion, ESL teachers in Sabah show a very positive attitude towards technology integration in their teaching activities. Besides that, factors of age and gender did not play significant factors towards the ESL teachers' technology integration, making it a great opportunity for relevant parties to implement any ICT related programs or policies in the future.

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