

Factors Influencing Information Technology Adoption of the Educational Opportunity Expansion Schools' Teachers in Pattani Primary Educational Service Area in Pattani Province

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Abstract

The purposes of this research were 1) to study the level of information technology adoption of the educational opportunity expansion schools' teachers, 2) to explore the level of factors influencing information technology adoption of the educational opportunity expansion schools' teachers, and 3) to develop a predictive equation for the factors influencing information technology adoption of the educational opportunity expansion schools' teachers. The sample consisted of 285 primary and secondary teachers from 34 opportunity expansion schools Primary Educational Service Area (PESA) in Pattani province. The sample size proportion was determined by using Krejcie and Morgan tables (1970) with 95% confidence and selected by the simple random sampling technique. The research instruments consisted of an 88-item questionnaire with 5 rating scales. The obtained data were analyzed using percentage, mean, standard deviation, and Enter method of multiple regression.

The results of the study revealed the following. First, there was a high level of adoption of information technology for teaching in opportunity expansion schools ($M = 4.25$, $SD = 0.43$). Second, the overall aspect was at a high level ($M = 4.12$, $SD = 0.52$), with supports and motivations from administrators at a high level ($M = 4.12$, $SD = 0.77$), features of technology or innovation at a moderate level ($M = 3.46$, $SD = 0.51$), and social context, environment, and teaching atmosphere of educational institutions at a high level ($M = 4.09$, $SD = 0.76$). Third, some factors showed a significant level of .05: personal factor (X_1), and social context, environment, and teaching atmosphere of educational institutions (X_4). These two factors accounted for 69.10 percent of the variance. Finally, this present study developed the best fit predictive equations as follows:

$$\begin{aligned} \text{Raw score } \hat{Y} &= 1.464 + .587 (X_1) + -.050 (X_2) + .008 (X_3) + .132 (X_4) \\ \text{Standardized score } \hat{Z}_Y &= .711 (Z_{X1}) + -.089 (Z_{X2}) + .009 (Z_{X3}) + .235 (Z_{X4}) \end{aligned}$$

Keywords: Information technology adoption, Applying information technology, Teachers of opportunity expansion school, Pattani province

Introduction

Information Technology (IT) plays an important role in the modern world. People tend to apply IT to their daily lives increasingly. That is to say; an education field has to pay more attention to IT as integrating it into instructional designs (Poovarawan, 2012). Teachers should understand and see the pros and cons of IT and then select practical ones to use in class. Applying IT to schools leads to positive impacts since IT helps school members save time, budget, and human resources and have practical teachings. Moreover, Poovarawan (2010) stated that all schools were actively acquiring IT for instructions, classroom management, teaching resources, materials development, meetings, workshops, or exhibitions. Therefore, IT could enhance effective instruction, create various learning experiences, and lead to better achievement.

Kiranandana (2007) mentioned that success in applying IT to schools depends on its use in teaching and learning. Teachers have to experience and use IT in their teaching (Singta, 2005). Teachers are change agents, and this is important to IT adoption. If teachers do not adopt IT, instructions and the learning environment will not be changed (Kaewsuwan, 2015). IT adoption is a mental process; first, teachers would have positive or negative feelings toward IT. After that, teachers would decide whether to adopt that IT or not, yet this stage depends on the teacher's characteristics such as personality, attitudes toward profession and learners, motivation, academic competence, ability in assessment and evaluation, institute's environment, and IT skills (Kaewsuwan, 2015). Those mentioned above are from teachers, and they affect learning objectives and the learning process tremendously (Sawangpop, 2011).

Opportunity expansion school is under the responsibility of the Office of the Basic Education Commission located in remote areas with fewer teaching and learning facilities. Nevertheless, according to the national policy, this school must be operated for students in the area. The target schools in Pattani province are 34 schools from 3 education service areas: 17 schools from service area 1, 11 schools from service area 2, and 5 schools from service area 3 (Office of the Basic Education Commission, 2020). The opportunity expansion schools offer kindergarten, primary, and secondary levels. However, each school has different contexts and challenges regarding technology tools per teacher. This causes inequality in learning performance and achievement and IT adoption of teachers (Pratumman, 2009). To enhance the positive view of using IT in teaching effectively, Thorarit (2005) suggested that teachers should get support from school administrators as sufficient IT tools, IT workshops and trending educational technology to use in class.

Further, teachers in the opportunity expansion schools have to put effort into teaching duties and adopt technology in class (Office of the Permanent Secretary, Ministry of Education, 2011). Giving importance to teaching and educational technology could create various class activities, learning experiences, and engaging learning materials. Therefore, teachers should open up and apply technology to class to benefit learners and teachers (Ruksorn, 2015).

Rogers and Shoemaker (2003) said that there are five stages to adopting IT or innovation: 1) Awareness is to know that there are new practices or technology that are not ready to use since there is insufficient information. 2) Interest is to see the use of technology, match with own's problems or interests, and search for more information 3) Evaluation is to judge technology's value, compatibility, convenience, and limitations 4) Trial is to try out the selected technology, and 5) adoption is to use the selected technology continually.

Regarding the rationale above, studies from Evan (2009), Beggs (2010), Michele (2010), Viyasil (2010), Kokmanee (2012), Whattananarong (2013), Saipradit (2013), Erout (1976), Demos (1979), Nunez (1997), Riggs (1994), Pruemnat (2013), Kearney et al. (2017), Taherdoost (2018), Oh and Shim (2020), and Lazar et al. (2020) indicated that teachers have different levels of IT adoption, and this depends on personal factors, for example, teaching experience, personal practices, in-

terests, computer and digital literacy, motivation, and technology knowledge. Moreover, different IT adoption levels could be from external factors such as getting support from school administrators, grants, workshops, technology tools, and a positive working environment. Some teachers share positive opinions toward educational technology, but some do not. That could lead to ineffective teachings. Furthermore, the researchers reviewed the literature regarding the factors influencing information technology adoption of the Educational Opportunity Expansion schools' teachers in Pattani and other border provinces and found none of the studies in this area. Therefore, to fulfill the gap in perspective, adoption, and application of IT in classrooms. This present study could be the starting point for IT application studies in other areas, which might positively lead to a better understanding of using IT in classrooms. Consequently, the researchers were interested in exploring factors influencing the adoption of IT applications of teachers in opportunity expansion schools, PESA, Pattani Province, and plotting a predicting equation of the IT adoption according to the concept of Rogers and Shoemaker (2003) regarding innovation and technology adoption. In addition, the researchers expected to reveal the body of knowledge for further plans and policies in applying IT to class as guidelines for schools and other educational agencies.

■ Objectives

1. to study the level of information technology adoption of the Educational Opportunity Expansion schools' teachers in Pattani Primary Educational Service Area, Pattani Province.
2. to explore the level of factors influencing information technology adoption of the Educational Opportunity Expansion schools' teachers in Pattani Primary Educational Service Area, Pattani Province.
3. to develop a predictive equation for the factors influencing information technology adoption of the Educational Opportunity Expansion schools' teachers in Pattani Primary Educational Service Area, Pattani Province.

■ Scope of the study

There were four reviewed factors influencing the use of technology in teaching and learning concerning opportunity expansion school context, studies by Evan (2009), Beggs (2010), Michele (2010), Viyasil (2010), Kok-

manee (2012), Whattananarong (2013), Saipradit (2013), Erout (1976), Demos (1979), Nunez (1997), Riggs (1994), Pruemnate (2013), Kearney et al. (2017), Taherdoost (2018), Oh and Shim (2020), and Lazar et al. (2020).

1. Personal aspect consists of practices, teaching experiences, learning behaviors to solve teaching and learning problems, basic computer knowledge and digital literacy, personal contacts, and perceptions of attributes and benefits of IT.

2. Support and promotion from the administrators' aspect consist of teaching resources, workshops and grants, tools and equipment, features of technology and innovation supports, administrators and institutional policies, allocation of resources, and budgets.

3. Technology and innovation features are the value, convenience, and compatibility of innovations that teachers could use.

4. Contexts of society and environment and learning environment consist of organizational culture, staff readiness, course design and evaluation support, educators' collaboration in the learning process, academic environments in institutions, and motivations in using IT.

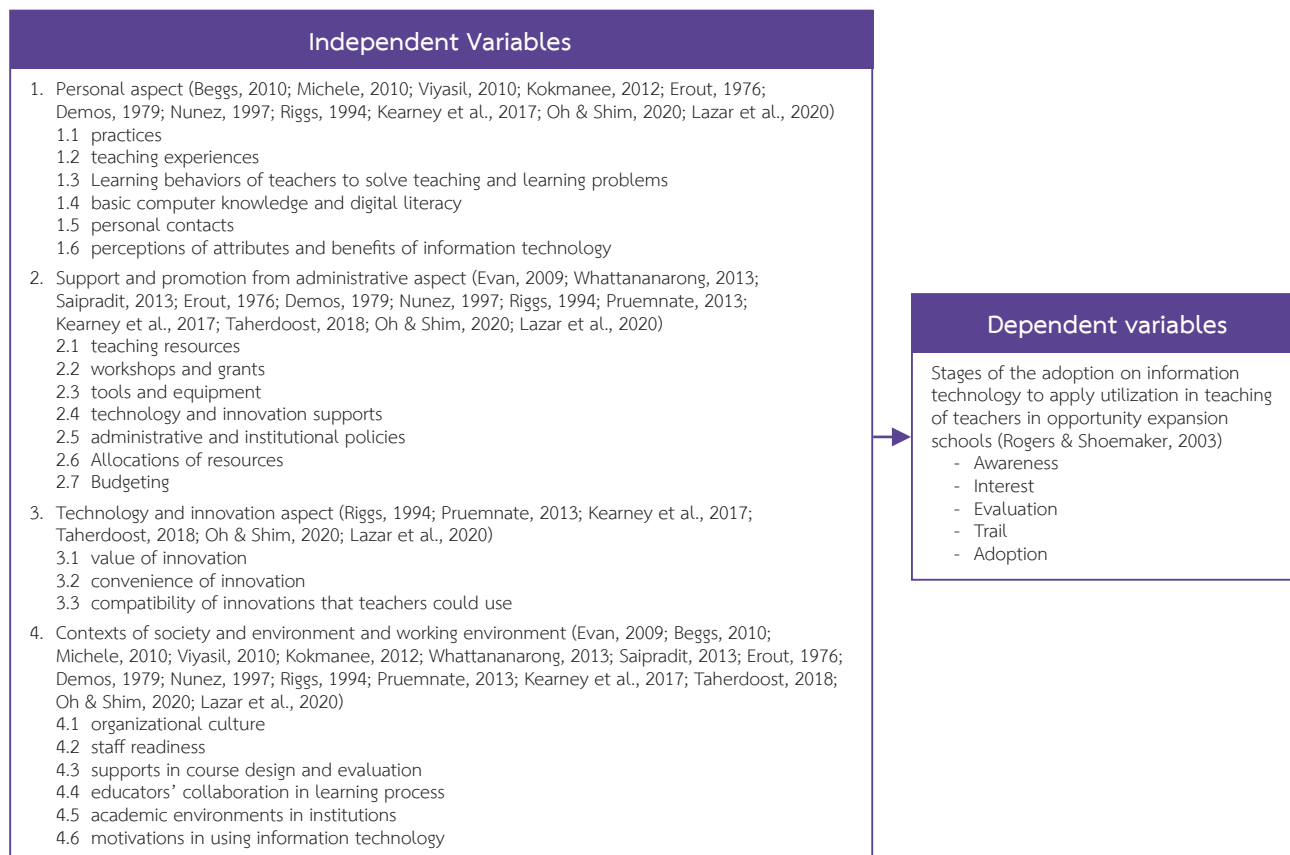
Conceptual framework

The study employed two concepts as follows:

1. According to the concept of technology adoption and innovation dissemination by Rogers and Shoemaker (2003), it is a process of acknowledging and using any existing technology or innovations. Finally, they adopt that technology in their teaching and learning activities. The process consists of awareness, interest, evaluation, trial, and adoption.

2. Factors influencing information technology adoption of the Educational Opportunity Expansion schools' teachers in PESA which reviewed from related documents by Evan (2009), Beggs (2010), Michele (2010), Viyasil (2010), Kokmanee (2012), Whattananarong (2013), Saipradit (2013), Erout (1976), Demos (1979), Nunez (1997), Riggs (1994), Pruemnate (2013), Kearney et al. (2017), Taherdoost (2018), Oh & Shim (2020), and Lazar et al. (2020). Regarding the review of related documents, the researchers summarized and created a conceptual framework of the research, as shown in Figure 1.

Figure 1
Conceptual framework.



Methodology

The study was survey research. The methodology was as follows:

1. Population and samples.

1.1 Population was 1,032 primary and secondary school teachers who taught in semester 2, the academic year 2020, and worked for 34 opportunity expansion schools of Pattani, PESA, Pattani Province.

1.2 The samples were 285 teachers selected using Krejcie and Morgan tables (1970) with 95% confidence and the simple random sampling technique (Leekitchwatana, 2012).

2. Research instruments. The research instrument was a questionnaire created by the researchers consisting of

Part 1 Four items of Demographic information as selected response

Part 2 Twenty-nine items of the five-rating scale regarding technology adoption: six items in the awareness stage, six items in the interest stage, six items in the evaluation stage, five items in the trial stage, and six items in the adoption stage. The reliability of this part was 0.97.

Part 3 Fifty-five items of a five-rating scale regarding factors influencing adoption of IT applications of teachers in opportunity expansion schools as follows: fifteen items on the personal aspect, fourteen items on support and promotion from administrators, eleven items on technology and innovation, and nineteen items of social and environmental context and learning environments. The reliability of this part was 0.82 - 0.98.

3. Data collection.

The researchers mailed the questionnaire and related documents to the target teachers because of the high risks and difficult commute. If the researchers reached the target groups, the researchers sent the questionnaire personally. The duration was on June 3 to November 28, 2021. The six-month process was as follows:

3.1 Asking for permission from the 34 school administrators on data collection

3.2 Collecting and sorting data: 281 questionnaires were returned, 98.59 percent of the distributed questionnaires.

The research ethics committee approved this study: PSU IRB 2021 – LL – HUSO 005 (Internal) under the Belmont report on March 30, 2021.

4. Data analysis. This phase was divided into three parts as follows:

4.1 Frequency and percentage were used to analyze the demographic information

4.2 Average and standard deviation were used to analyze the level of adoption and opinions of teachers towards the factors

4.3 Multiple Regression Analysis: enter method was used to analyze factors and create a predicting equation regarding factors influencing IT technology adoption in order to utilize it in the teaching of teachers in opportunity expansion schools

Results

The results were divided into four parts: 1) an analysis of demographic information, 2) an overview analysis of the level of information technology adoption of the Educational Opportunity Expansion schools' teachers (objective 1), 3) results of the level of factors influencing information technology adoption of the Educational Opportunity Expansion schools' teachers (objective 2), and 4) results of developing a predictive equation for the factors influencing information technology adoption of the Educational Opportunity Expansion schools' teachers (objective 3) as follows:

1. An analysis of demographic information

The demographic information includes sex, age, educational background, and teaching subjects. In addition, frequency and percentage were used to analyze, as shown in Table 1.

Table 1

An analysis of demographic information (n = 281)

Demographic information	Number	Percentage
Sex		
Male	116	41.30
Female	165	58.70
Total	281	100.00

Table 1
 (continued)

Demographic information	Number	Percentage
Age		
20-30	67	23.80
31-40	114	40.70
41-50	67	23.80
51-60	33	11.70
Total	281	100.00
Education		
Bachelor's degree	183	65.10
Master's degree	77	27.40
Ph.D.	21	7.50
Total	281	100.00
Teaching subjects		
Math	47	16.70
Thai language	47	16.70
Science and Technology	35	12.50
Social studies, religion, and culture	40	14.20
Art	20	7.10
Career	28	10.00
Foreign languages	41	14.60
Health and Physical Education	23	8.20
Total	281	100.00

According to Table 1, the participants were 165 females (58.70 percent) and 116 males (41.30 percent). In addition, 114 people were 31-40 years old (40.60 percent), 67 people were 20-30 and 41-50 years old (23.80 percent), and 33 people were 51-60 years old (11.70 percent). There were 183 participants (65.10 percent) who had Bachelor's degrees, 77 participants (27.40 percent) who had Master's degrees, and 21

participants (7.50 percent) who had Doctoral degrees. In addition, 47 participants (16.70 percent) taught Math and Thai language, and 41 (14.60 percent) taught foreign languages.

2. An overview analysis of the level of information technology adoption of the Educational Opportunity Expansion schools' teachers (objective 1).

Table 2

An overview analysis of technology adoption (n = 281)

Stages	Adoption degree		
	M	SD	Degree
Awareness	4.06	0.37	High
Interest	4.26	0.52	High
Evaluation	4.32	0.48	High
Trail	4.31	0.54	High
Adoption	4.28	0.56	High
Total	4.25	0.43	High

Table 2 shows an overall teachers' technology adoption of IT applications in opportunity expansion schools. The overview of the technology adoption was at a high degree ($M = 4.25$, $SD = 0.43$). The evaluation stage was at the highest average item ($M = 4.32$, $SD = 0.48$),

and the awareness stage was at the lowest average item ($M = 4.06$, $SD = 0.37$).

3. Results of the factors influencing information technology adoption of the Educational Opportunity Expansion schools' teachers (objective 2).

Table 3

An analysis of factors affecting technology adoption: Separated by factors (n = 281)

Items	Adoption degree		
	M	SD	Degree
Personal aspect	4.12	0.52	High
Support and promotion from the administrators' aspect	4.12	0.77	High
Features of technology and innovation aspect	3.46	0.51	Moderate
Contexts of society and environment and learning environment aspect	4.09	0.76	High
Total	3.95	0.48	High

Table 3 shows that all four aspects of teachers' opinions towards factors affecting the adoption of IT applications were high. The rank was a personal aspect ($M = 4.12$, $SD = 0.52$), support and promotion from administrators' aspect ($M = 4.12$, $SD = 0.77$), contexts of society and environment and learning environment aspect ($M = 4.09$, $SD = 0.76$), and features of technology and innovation aspect ($M = 3.46$, $SD = 0.51$) respectively.

1. Personal aspects consisted of practices, teaching experiences, learning behaviors to solve teaching and learning problems, basic computer knowledge and digital literacy, personal contacts, and perceptions of

attributes and benefits of IT.

2. Support and promotion from the administrators' aspect consisted of teaching resources, workshops and grants, tools and equipment, features of technology and innovation supports, administrators and institutional policies, and allocation of resources and budgets.

3. Technology and innovation features were the value, convenience, and compatibility of innovations that teachers could use.

4. Contexts of society and environment and working environment consisted of organizational culture, staff readiness, course design and evaluation support,

educators' collaboration in the learning process, academic environments in institutions, and motivations in using IT.

4. Results of developing a predictive equation for the factors influencing information technology adoption of the Educational Opportunity Expansion schools' teachers (objective 3).

Table 4

An analysis of multiple regression analysis, enter method in creating predicting equation of technology adoption

Variables (Factor)	B (Raw Score)	SE of b	β (Standard Score)	T	p
Personal aspect (X_1)	.587	.051	.711	11.437*	<.001
Support and promotion from the administrators' aspect (X_2)	-.050	.036	-.089	-1.368	.172
Features of technology and innovation aspect (X_3)	.008	.029	.009	.269	.788
Social context, environment and working environment of an institute aspect (X_4)	.132	.034	.235	3.834*	<.001
Constant (b)	1.464	.148		9.919	<.001
R = .832 Standard Error of the Estimate = .24077 R square = .691 F = 154.63*					

Remark *p ≤ .05

According to Table 4, it was found that the four aspects showed positive effects on the adoption of IT applications of teachers in opportunity expansion schools, PESA, Pattani Province. Two factors could use to predict IT adoption as they yielded 69.10 percent with a .05 significant level. The two factors were the personal factor (X_1) ($\beta = .711$), and the social context, environment, and working environment of institutions factor (X_4) ($\beta = .235$). Other factors were not the forecasting factors in this study. The correlation between this study (Y) and the factors (X_1, X_2, X_3, X_4) was .832, and the forecast error (SE_{est}) was .24077. The raw score of a predicting equation is

$$\hat{Y} = 1.464 + .587 (X_1) + -.050 (X_2) + .008 (X_3) + .132 (X_4)$$

According to the equation, if the factor of personal (X_1) increased by 1 point, it could be implied that the adoption increased by .587 points. If the factor of support and promotion from administrators increased by 1 point when X_2, X_3 , and X_4 were constant, it could be said that the IT adoption decreased by -.050 points. If the factor of technology and innovation features (X_3) increased by 1 point when X_3, X_4 , and X_1 were constant, it could be

implied that IT adoption increased by .008. If the factor of an institute's social context, environment, and working environment (X_4) increased by 1 point when X_4, X_1 , and X_2 were constant, it could be said that the IT adoption increased by .132. When X_1, X_2 , and X_3 were controlled, a predicting equation in a standardized score was plotted as

$$\hat{Z}_Y = .711 (Z_{X_1}) + -.089 (Z_{X_2}) + .009 (Z_{X_3}) + .235 (Z_{X_4})$$

From the above equation, if the factor of personal (X_1) increased by 1 standardized point, the IT adoption increased by .711 standardized points. If the factor of support and promotion from administrators increased by 1 standardized point when X_2, X_3 and X_4 were constant, it could be said that the IT adoption decreased by -.089 standardized points. If the factor of technology and innovation features (X_3) increased by 1 standardized point when X_3, X_4 and X_1 were constant, it could be implied that the IT adoption increased by .009 standardized points. If the factor of social context, environment and working environment of an institute (X_4) increased by 1 standardized point when X_4, X_1 and X_2 were constant, it could be said that the IT adoption increased by .235 standardized points.

Discussion

1. It was found that the IT adoption of the target group was at a high level. This could portray excellent collaborations of all stakeholders, namely, the school administrators, school staff, and educators. To illustrate, the school administrators and staff support teachers' resources, tools and technology, workshop grants, a positive working environment, and academic preparation. Educators support teachers in advising teaching and learning area. Lastly, teachers could prepare learning activities that suit students in any circumstances. Phuangcharern (2008) study stated that teaching improvement and IT adoption related to convenience in using technology and suitability of own context. Moreover, other factors leading to the target teachers' IT adoption were being supported by school administrators in terms of professional development and being familiar with technology and innovations' features. Niyomchart (2009) mentioned that an innovation adoption would rarely accept if school administrators did not support it. Further, insufficient budget and unclear policies about technology application could also affect the teachers' adoption level. As a result, the factors above influence the IT adoption of teachers, and this issue needs attention.

2. There were two factors affecting IT adoption: the personal aspect and social context, the working environment, and the learning atmosphere of an institute. These two factors show a high level of impact as they are basic factors regarding self-management and collaboration in an institute. Therefore, further discussion is presented as follows:

According to the factor of personal aspect, it was found that the IT adoption of the target group was high. This might be because the target teachers possess various perspectives concerning personal practices, teaching experiences, professional development, computer and digital media skills, and interests in applying technology to class. These could lead to a high IT adoption degree, as could be seen from their actions and behaviors in terms of using educational technology in classes, updating new technology and suggesting others, or participating in related workshops. This relates to Kokmanee (2012) and Kaewsuan (2015) studies that personal behaviors or actions regarding seeking knowledge, participating in activities, and then building on prior knowledge could lead to IT adoption. Moreover, Mathuros (2021) stated that teachers must

adapt to online teaching and use IT as a teaching tool. Technology helps teachers to manage their teaching and learning more effectively.

According to the factor of social context, working environment, and learning atmosphere of an institute aspect, it was found that the IT adoption of the target group was at a high level. It could be said that all stakeholders support the target teachers in terms of assessment and evaluation, teaching and learning activities, school academic atmosphere, and technology motivation. As a concern, Oh and Shim (2020) indicated that school contexts could represent social status, management, and relationships among people in organizations; academic atmosphere, working management, teaching and learning environment, and institute's environment. Also, Mathuros (2021) also mentioned that school administrative management should focus on online teaching tools and learners' variety; therefore, teachers have to adapt their teaching platform to be online effectively and successfully. In contrast, the other two factors, support from administrators and features of technology or innovation, did not affect the target teachers' IT adoption. Therefore, further discussion is presented as follows:

The target teachers showed a high-degree adoption of the 'support from administrators' factor. This adoption relates to exploring new knowledge to teach, participating in workshops, and being supported in teaching tools, technology, and budgeting. It could be observed from school administrators' participation, supports, and allocations concerning Ketmanee (2005) study as support from school administrators influences teachers' IT adoption. If the administrators do not give importance to IT applications or encourage teachers to attend professional development workshops, teachers would deny applying technology to classes. Additionally, providing a positive working environment and flexible working conditions might help teachers adopt technology in their teaching easier (Sakrunphongsakul & Yuthwiboonchai, 2006). Additionally, Kearney et al. (2017) illustrated that providing teachers IT support in teaching and learning reduces difficulties in class management. In terms of technology or innovation features, the target teachers showed a moderate level of adoption. This factor deals with innovation's value, convenience, and compatibility, not affecting IT adoption. This goes with Sinthaworn (2007) and Niyomchart (2009), studies that if learning materials,

innovation, and media equipment are not up-to-date, challenging to use and maintain, or expensive, this could cause an opposing view in applying technology to teaching. There should be staff or technicians to support teachers; as a result, teachers will gain a positive view and adapt technology to use in classes (Taherdoost, 2018).

3. There are four factors affecting the target teachers' IT adoption: personal aspect, support and promotion from administrators' aspect, features of technology and innovation aspect, and social context, environment and working environment of an institute aspect which show predicting equation of R^2 as 69.10. Therefore, further discussion is presented as follows:

The factor of personal aspect was the first factor for the prediction since it showed a multiple regression value of .711 ($p = <.001$). This is because the factor demonstrated correlations with teachers' characteristics, experience, knowledge, and personal skills (Rukwichien, 2005). Further, the factor indicated social status, relationships among people in schools, teaching techniques, and methods. Therefore, this factor reflects IT adoption in teaching and learning of the target teachers, which is related to Limcharoen (2021) study that personalized learning affects professional development regarding applying technology to teaching.

Concerning the factor of social context, working environment, and learning atmosphere of an institute aspect, it was the second factor influencing IT adoption of the target teachers by showing a multiple regression value of .235 ($p = <.001$). The items in this factor related to administrators, teachers, learners (Kraisin, 1997; Rukwichien, 2005), and learners' follow-up process (Limcharoen, 2021). Further, Sinthaworn (2007) mentioned that social context and academic environment enhanced teachers' learning and motivated them to take higher degrees. Therefore, this factor also indicates a social context in schools: learning resources, learning management, and school activities held by teachers and learners. Consequently, this factor relates to the IT adoption of the target teachers. In terms of technology or innovation features, it was found that this factor did not affect the IT adoption of the target teachers, and it showed a multiple regression value of .009 ($p = .788$). This could be implied that the teachers did not focus on features of technology or innovation but on techniques, processes, or how to run learning activities effectively. This might be with not paying

attention to innovation's value, convenience, and compatibility. As for Kokmanee (2012), technology or innovation features are important to enhance teaching and learning activities, learners, and teachers. Therefore, they could create a positive academic environment and IT adoption. The previous mention relates to a study of Lazar et al. (2020) which stated that being familiar with the digital tools affect IT adoption's degree in working and teaching. Since using IT is considered a skill, repeatedly using it may enhance individual IT expertise and literacy.

Lastly, the factor of support and promotion from the administrators' aspect did not affect the IT adoption of the target teachers, and it shows a multiple regression value of -.089 ($p = .172$). Teachers might not focus on reinforcement from school administrators but teaching load and learners' achievement. This leads to less professional development and response to school policies. Moreover, school administrators' support influences IT adoption because the target teachers could learn from schools' resources according to their preferences. Rukwichien (2005: cited in Kaewsuwan, 2015) said that various genders of teachers indicated IT adoption differently, but different education backgrounds did not affect IT adoption. It depends on the working environment: an academic atmosphere could lead to a high level of IT adoption. Additionally, teachers' interest and support from school administrators regarding policies are other issues to be concerned (Phuangcharern, 2008).

■ Recommendations

We found various issues regarding plans and policies in applying technology to the classroom as follows:

Policy aspect.

1. Responsible organizations; for example, the Educational Service Area Office and the Ministry of Education should pay more attention to collaborating with schools and providing information and workshops regarding educational technology so that teachers would be able to select practical technology and apply it to class.

2. Other educational organizations, Office of the Education Council, National Institute for Development of Teachers, Faculty Staff, and Educational Personnel, and Teacher Professional Development Institute should collaborate with schools and teachers to manage

workshops about educational technology; digital literacy, teaching techniques, and others that teachers are interested in. Moreover, teachers could have opportunities to develop curricula related to current issues, assess and evaluate, and continually follow up on educational technology challenges.

3. Other agencies: materials development sections and the community should also participate in designing teacher educational technology activities. Experts in materials or instructional design could advise these activities. Further, the agencies could participate in seminars to share technology used in local contexts.

Applications.

1. Awareness stage shows the least average. Therefore, there should be seminars and workshops to raise technology awareness, encourage teachers to explore new technology, and guide teachers to use technology effectively.

2. Teachers' factor is the highest forecasting factor. Administrators should support teachers regarding learning, computer skills, digital literacy, and technology awareness. A positive school environment encourages teachers to learn and develop themselves continually. This could lead to quality schools, teachers, and learners.

3. Opportunity expansion schools in the Pattani area could take the findings to plan or suggest to administrators and the Ministry of Education regarding budget allocation and technology support.

Further studies.

1. Other factors should be examined, for example, knowledge management or suggestions of technology needs in teaching and learning.

2. Development of IT adoption in teaching and learning or a model that could be modified according to each institute's context.

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