

Educator's Competencies On The Application Of Technological Tools In Teaching

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Abstract: This study dealt with the teachers' competencies in the application of technological tools in teaching. Data were gathered, tabulated, interpreted and analyzed. All of the teacher-respondents focused on the level of competency of teachers needed for technological tools utilization in terms of knowledge and cultural competencies, technical and technological competencies, practical competencies, teaching methods, and instructional design competencies. The level of seriousness of the problems encountered by the teachers in the utilization of technological tools in teaching and learning activities. The researcher based his work on theoretical papers, published research, and different literature in a collection of relevant data to extract facts and conclusions, as well as following the descriptive-analytical method which relies on the quantities method to determine the competencies of teacher in the application of technological tools in preparation programs to grade students enrolled in school through a survey questionnaire. Overall, the level of competency of teachers needed for technological tools utilization in terms of knowledge and cultural competencies, technical and technological competencies, and teaching methods and instructional design competencies are highly competent. On the other hand, practical competencies show very highly competent, the seriousness of the problems encountered by the teachers in the utilization of technological tools in teaching and learning activities shows fairly serious. Lastly, there is no significant relationship between the level of competency of Foreign English teachers across their profile variables.

Index Terms: teacher competencies, technological tools, Thailand

1. INTRODUCTION

Only a decades ago, classrooms are different from today, with blackboards, pencils, and notebooks [1] The technological tools also helps teachers to deliver his valuable information with the help of interactive whiteboards [2]. The researcher visited several institutions in Bangkok, Thailand, and found out that technology in the country is excellent. As technology increases, several studies contributed to the body of knowledge in education regarding the use of technology in education. The integration of Massive Open Online Courses could change the way the teachers teach [3], and new development in education was implemented. While technological competencies are needed, only a few studies measure the competencies of those in a foreign country. Recently, one Secondary School of Bangkok equipped all classrooms with audio-visual systems that allow the display of computer sets, projectors, Internet classrooms, Interactive whiteboards, and interaction with commonly used software such as Microsoft Office [4] and google classroom [5]. Technology plays a great role in education, where it is being utilized in most institution that includes several subscriptions in technological tools [6] such as grammar checker and plagiarism checker [7]. This paper focuses on the teacher's competencies in the application of technological tools in multiple school in Thailand.

1.1 Objective of the Study

The objective of the study is to determine the Profile of the English Foreign Teachers in terms of Age, Sex, Nationality, Educational Attainment (College), Highest Educational Attainment, Number of Training and Seminars Attended. The next objective is to determine the level of competency of teachers needed for technological tools utilization in terms of

(a) Knowledge and Cultural Competencies. (b) Technical and Technological Competencies. (c) Practical Competencies. (d) Teaching Methods and Instructional Design Competencies. Another. The next objective is to determine the extent of the seriousness of the problems encountered by the teachers in the utilization of technological tools in teaching and learning activities. Lastly, to determine the significant relationship between the level of competencies of the teachers across the profile variables.

1.2 The Scope of the Study and Significance

The study was conducted in multiple schools in Bangkok Thailand. Respondents are the employees of different nationalities working as an English language teacher in the school. This research was conducted during SY 2017-2018 on its Second Term until SY 2018-2019 First Term. The results of this study will be a tool for all teachers to be acquainted with technological tools and come up with teaching styles and instructional materials that are appropriate based on the needs of the students. The output of this study will provide baseline data and information to researchers who are interested to conduct related further studies.

2 METHODOLOGY

2.1 Respondents of the Study

Respondents of the studies include the foreign teachers in one institution in Bangkok, Thailand. They were from different nationalities: American, African, Japanese, French, Dutch, Filipino, Chinese, South African, Thai, British, Irish, Italian and Cameroonian with different qualifications and experiences. The respondents trimmed down to twenty-five because some teachers were on leave, and others refused to answer the survey questionnaire.

2.2 Instrumentation

The instrument, which was used as a data-collecting tool, was a questionnaire, which included forty-seven items in order to attain the objectives and the aims of the study. After the researcher designed the questionnaire, he conducted a pilot survey. It included three examples of the level of competencies

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of teachers needed for technological tools utilization in terms of: 1) Knowledge and Cultural Competencies. 2) Technical and Technological Competencies. 3) Practical Competencies and 4) Teaching methods and Instructional Design Competencies. The extent of the seriousness of the problems encountered in the utilization of technological tools in teaching and learning activities were also included. This pilot survey form needed teachers to write real examples of challenges. In light of the survey, some modifications were made to the questionnaire. The questionnaire was sent through e-mail to a number of advisers.

2.3 Data Gathering Procedure

The questionnaire was given by hand to the sample or via google forms. They responded by putting a tick in the appropriate space opposite to an item in one of the following choices: very highly competent, highly competent, moderately competent, less competent, and least competent for the second part and very highly serious, highly serious, serious, fairly serious, and not serious for the third part. After that 'very highly competent' and 'highly competent' and very highly serious and highly serious were summed up and 'less competent and 'least competent' and Fairly serious, Not serious were summed up. The responses became only three columns: competent, moderately competent and low competent on the second part and serious, fairly serious, not serious on the third part. These six responses were given values as 'excellent', 'v. good', and 'good'. The responses

below 'good' were rejected. Online forms were used, as it is the current trends in data gathering from different researches [8]. The researcher personally administered the research instrument. A set of respondents were properly oriented before they were set to the tasks. Each item was explained for further understanding. Then all data were gathered, classified and tabulated.

2.4 Statistical Treatment of Data

The profile of the English Foreign Teachers in terms of age, sex, nationality, educational attainment, highest educational attainment and number of training and seminars attended were described using frequency and percentages. For the response on the respondent's Rating Scale, a five-point Likert Scale was adopted for the purpose of interpretation to obtain the level of competencies of teachers needed for technological tools utilization.

3 RESULTS AND DISCUSSION

3.1 Demographic Profile of the Teacher-Respondents

The demographic characteristics of the teacher-respondents included in this study include age, gender, nationality, educational attainment (college), highest educational attainment, and a number of training and seminars Attended related to technological tools utilization.

Table 1 Profile of English Foreign Teachers
N=25

Profile variables		Frequency
Age	21 - 30 years old	32
	31 - 40 years old	36
	41 - 50 years old	16
	51 - 60 years old	8
	61 - 70 years old	8
Sex	Male	52
	Female	48
Nationality	Filipino	24
	African	12
	Chinese	8
	British	8
	Dutch	4
	American	8
	Thai	12
	Japanese	4
	Irish	8
French	12	
Education	Nursing	4
	Economics	4
	Business Administration	28
	Education	12
	Mathematics	4
	Communication	44
Engineering	4	
Highest educational attainment	College Graduate	84
	Master's Graduate	16
Number of trainings and seminars attended	1-2	16
	3-4	76
	5-6	8

It can be gleaned from the table that nine or 36% of foreign English teachers covered in this study are aged 31 to 40, which has higher numbers allocated than age 21 to 30 (32.0%), 41 to 50 (16.0%) and 51 to 60 and 61 to 70 (8.0%). As for the variable sex, the male teachers comprised 52.0% of the total respondents, while the rest are female teachers. As to the nationality, six or 24.0% of teachers are Filipinos, while others are African, Thai and French (12.0%). With regards to educational attainment, the teacher respondents earned a Communication course (44.0%), Business Administration (28.0%), Education (12.0%), and the rest of the respondents completed Nursing, Economics, Mathematics, and Engineering courses. It can be seen based on the result that most of the foreign teachers in Thailand are

teaching English subjects [9]. When it comes to the highest educational attainment, 84.0% of the respondents are college graduates and 4 or 16.0% are master's graduates. As for the number of training and seminars attended, 19 or 76.0% of the respondents attended 3 to 4 trainings and seminars, four or 16.0% have 1 to 2 trainings and seminars, and two or 8.0% have 5 or more training and seminars attended. In general, the majority of the respondents are male Filipinos aged 31-40 years old. Most of them are College graduates and earned a Communication course with more than 3-4 training/seminars attended.

3.2 Level of competence of teachers needed for technological tools utilization

Table 2 Knowledge and Cultural Competencies

A. Knowledge and Cultural Competencies	Less competent		Moderately competent		Highly competent		Very highly competent	
	f	%	f	%	f	%	f	%
a. Knowledge in Computer hardware, networks, and other hardware-based competencies	4	4.0	4	4.0	56	56.0	36	36.0
b. Knowledge in Computer application software	4	4.0	4	4.0	56	56.0	36	36.0
c. Knowledge in Internet resources, and other learning sources and e-libraries	4	4.0	20	20.0	44	44.0	32	32.0
d. Knowledge in Thailand Cultural (Thai Culture)	4	4.0	12	12.0	56	56.0	28	28.0
e. Knowledge in Asian Culture	4	4.0	4	4.0	56	56.0	36	36.0

Table 2 shows that the knowledge in computer hardware, computer application software and Asian culture higher number of respondents are highly competent in terms of knowledge and culture have a similar weighted mean of 4.24 with the corresponding descriptive equivalent of very highly competent. The lowest rating of 4.04 is along with the knowledge on internet resources.

During this study, it was observed that teachers generally had a positive attitude towards the utilization along with knowledge and cultural competencies as highly competent. Aside from ICT training and seminar that was being conducted in school yearly, the department of education in Thailand is also conducting Asian culture training and seminars and Thai culture for teachers.

Table 3 Technological Competencies

B. Technical and Technological Competencies	Less competent		Moderately competent		Highly competent		Very highly competent	
	f	%	f	%	f	%	f	%
a. Technical Skills in productivity tools software	8	8.0	20	20.0	48	48.0	24	24.0
b. Technical Skills in Cloud based computing	12	12.0	24	24.0	44	44.0	20	20.0
c. Technical Skills in Computer Hardware servicing and use of hardware devices	8	8.0	24	24.0	48	48.0	20	20.0
d. Technological competencies in basic electronics	4	4.0	0	0	64	64.0	32	32.0
e. Technological competencies in Multimedia Development (Photo editing, video editing)	4	4.0	24	24.0	48	48.0	24	24.0

For the competency of teachers along technical and technology, the teacher respondents rated basic electronics with a corresponding highest weighted mean of 4.24 while cloud-based computing got the lowest weighted mean of 3.72

with a corresponding weighted mean of highly competent. This result is due to the different technical and technological training conducted for teachers per year as being mentioned in their profile data.

Table 4 Practical Competencies

C. Practical Competencies.	Less competent		Moderately competent		Highly competent		Very highly competent	
	f	%	f	%	f	%	f	%
a. Operate a word-processing application	4	4.0	4	4.0	36	36.0	56	56.0
b. Use of email and web browsers application	4	4.0	4	4.0	36	36.0	56	56.0

c. Create Spreadsheet application	4	4.0	12	12.0	36	36.0	48	48.0
d. Operate presentation package	4	4.0	12	12.0	36	36.0	48	48.0
e. Operating Cloud based productivity tools	4	4.0	24	24.0	24	24.0	48	48.0

As to the practical competency of foreign English teachers, word processing application and web browsers application got the highest rating of 4.44 from the respondents with a corresponding descriptive equivalent of very highly competent while the competency along cloud-based operation got the

lowest weighted mean of 4.16 with a corresponding descriptive equivalent of highly competent. Those statistics indicates that no difficulties encounter by the respondents in terms of practical skill competencies.

Helvetica Teaching Methods and Instructional Design

D. Teaching methods and Instructional Design Competencies.	Less competent		Moderately competent		Highly competent		Very highly competent	
	f	%	f	%	f	%	f	%
a. The teacher provides contribution to the instructional design process	4	4.0	12	12.0	48	48.0	9	36.0
b. The teacher develop instructional materials for teaching	8	8.0	4	4.0	52	52.0	36	36.0
c. The teacher can Identifies the learning objectives and the learning reality for learners	8	8.0	0	0.0	48	48.0	44	44.0
d. The teacher has knowledge in educational pedagogy	4	4.0	16	16.0	40	40.0	40	40.0

For the competency of foreign English teachers along teaching methods and instructional design, identification of learning objectives got the highest weighted mean of 4.28 with a corresponding descriptive equivalent of highly competent while the competencies of instructional design, educational pedagogy, and development of instructional materials earned the lowest weighted mean of 4.16. Majority of the teachers shows highly competent especially that the teacher can

Identifies the learning objectives and the learning reality for learners. This indicates that teachers Teaching methods and Instructional Design Competencies is highly competent this is due to the rapid pace of technology change from training and seminars attended.

3.3 Seriousness of the problems encountered by the teachers in the utilization of Technological tools in teaching and learning activities

Table 6 *Seriousness of the problems encountered by the teachers in the utilization of SmC*

Problems	Least serious		Less serious		Moderate serious		Highly serious		Very highly serious	
	f	%	F	%	f	%	f	%	f	%
1. Browse/search the internet to collect resources to be used during lessons and information to prepare lessons.	60	60.0	28	28.0	4	4.0	4	4.0	4	4.0
2. Use applications to prepare presentation for lessons and Create your own digital learning materials for students.	64	64.0	24	24.0	4	4.0	4	4.0	4	4.0
3. Prepare exercises and tasks for students and Post homework for students on the school website.	76	76.0	16	16.0	8	8.0	0	0.0	0	0.0
4. Use ICT to provide feedback and/or assess students' learning and digital learning resources in the subjects you teach.	72	72.0	20	20.0	4	4.0	4	4.0	0	0.0
5. Communicate online with parents.	68	68.0	24	24.0	8	8.0	0	0.0	0	0.0
6. Download/upload/browse material from the school's website and from a learning platform.	72	72.0	24	24.0	8	4.0	0	0.0	0	0.0
7. Look for online professional development opportunities.	52	52.0	40	40.0	4	4.0	4	4.0	0	0.0
8. Insufficient number of internet connected computers and Insufficient Internet bandwidth or speed	36	36.0	44	44.0	20	20.0	0	0.0	0	0.0
9. Insufficient number of interactive whiteboards, laptops/notebooks, and computers.	36	36.0	44	44.0	20	20.0	0	0.0	0	0.0
10. School computers out of date and/or needing repair	45	48.0	32	32.0	12	12.0	8	8.0	0	0.0
11. Lack of adequate skills of teachers and content/material for teaching	44	44.0	40	40.0	16	16.0	0	0.0	0	0.0
12. Insufficient technical and	40	40.0	40	40.0	16	16.0	4	4.0	0	0.0

pedagogical support for teachers and Lack of pedagogical models on how to use ICT for learning										
13. Difficult to integrate ICT use into the curriculum	64	64.0	28	28.0	4	4.0	4	4.0	0	0.0
14. School time organization (fixed lesson time, etc.) And School space organization (classroom size and furniture, etc.	40	40.0	28	28.0	16	16.0	16	16.0	0	0.0
15. Pressure to prepare students for exams and tests	32	32.0	36	36.0	20	20.0	12	12.0	0	0.0
16. Most parents not in favor of the use of ICT at school	72	72.0	24	24.0	0	0.0	4	4.0	0	0.0
17. Most teachers not in favor of the use of ICT at school	72	72.0	16	16.0	4	4.0	8	8.0	0	0.0
18. Lack of teacher's interest and pedagogical models on how to use ICT for learning	64	64.0	24	24.0	8	8.0	4	4.0	0	0.0
19. No or unclear benefit to use ICT for teaching	76	76.0	12	12.0	8	8.0	4	4.0	0	0.0
20. Using ICT in teaching and learning not being a goal in our school	80	80.0	12	12.0	4	4.0	4	4.0	0	0.0

It could be gleaned from the table that pressure to prepare exams got the highest weighted mean of 2.12 with a corresponding descriptive equivalent of fairly serious. Other problems that fall under fairly serious are insufficient technical and pedagogical support from teachers, school time organization, ICT not being a goal in school and insufficient number of internet connected computers. Therefore, the result analyzed and interpreted clarifies that the seriousness of the problems encountered by the teachers in the utilization of

Technological tools in teaching and learning activities was least serious. On the basis of the above-mentioned result the statement of the problem of the study which reads as "What is the extent of seriousness of the Problems encountered by the teachers in the utilization of Technological tools in teaching and learning activities?" has been accomplished.

3.4 Relationship between the level of competency of Foreign English Teachers across their profile variables

Table 7 Relationship between the level of competency of Foreign English Teachers across their profile variables

Profile variables	Competency of Foreign English Teachers	
	Contingency coefficient	sig
Age	.835	.421
Sex	.594	.476
Nationality	.926	.071
Bachelor's degree	.881	.390
Highest educational attainment	.537	.753
Number of trainings and seminars attended	.758	.210

It is found that the demographic profile of the teachers did not influence the level of their competencies such as age, sex, nationality, bachelor's degree, highest educational attainment, and a number of training and seminar attended. Data analysis of the relationship between the level of competency of foreign English teachers across their profile variables using the contingency coefficient, a variant of the square test, revealed a non-significant result for both competencies and profile variables.

3.5 Implications

The result of the study implies that most of the foreign teachers are competent in the use of technology [10]. Despite the study is only applicable to Thailand, it is suggested that this study should be conducted in other parts of the Asian countries to determine the level of competencies in wider scope [11]. While the overall competencies of the teachers are highly competent, it is recommended that teachers should still improve the competencies for continuous improvement.

4.1 Conclusion and Recommendation

In view of the above empirical evidence, the hypothesis which reads as "There is a significant relationship between the level of competencies of the teachers across the profile variables."

stands not accepted. Thus, the null hypothesis is accepted. With a low average mean on the seriousness of the problems encountered by the teachers in the utilization of technological tools in teaching and learning activities, it is concluded that respondents don't have any major problems encountered in utilization of technological tools. It is also concluded that there is no significant relationship between the level of competency of Foreign English teachers across their profile variables. Since the Demographic Profile of respondents is no way correlated to the level of competency of Foreign English Teachers the management should take into account the hurdles experienced by teachers and also should motivate the school teachers to pay more focus in improving the teaching methodology by citing good examples. It is also suggested that they should focus on effective teaching planning and strategies in using technological tools. The school teachers are also suggested to create a platform whereby the student's individual differences, individual thinking can be considered. It is also important for every teacher to update their current stock of knowledge by keeping in mind the recent development and advancement in the society particularly in the world of technology. It is also advised that teacher should come out with new creative ideas, new practices, and new grade system which one enable students to learn faster. In addition to focusing on teaching it is also advised that the teacher should

be a good content developer of learning materials in a new fashion and make it accessible and resourceful to the students. It is the duty of a teacher to ensure ideal atmosphere and encourage slow learners with the help of other members. The teacher should regularly attend training and orientation program to equip with the latest knowledge.

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