THE ATTITUDE AND COMPETENCES OF PRE-SERVICE TEACHERS ON THE USE OF ICT IN TEACHING ENGLISH AS FOREIGN LANGUAGE: A STUDY AT ENGLISH DEPARTMENT OF SULTAN AGENG TIRTAYASA UNIVERSITY

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ABSTRACT

The use of Information and Communication Technology (ICT) in teaching English is a challenging and demanding issue. Thus, it becomes crucial that pre-service teachers to be outfitted with the ability to integrate ICT into English classroom. This study aims at identifying pre-service teacher attitude and competences on the use of ICT in teaching English as a foreign language. A study was conducted to 50 pre-service teachers during 2015-2016 academic year that includes closed question items focused on pre-service teachers' attitude towards ICT and their level of competence in the use of ICT. The responses were analysed in frequency and percentages. The study informed that the pre-service teachers demonstrated a positive attitude towards using ICT for teaching and they are competent in the use of few basic ICT operations. The results suggest that the department should have a closer look at the teacher education curriculum and other aspects of the formal preparation of these pre-service teachers about the necessary competences in the use of ICT in teaching English.

Keywords: attitude; competences; Information and Communication Technology;preservice teacher.

INTRODUCTION

Many literature had discussed information and communication technology (ICT) to facilitate students' learning, improve teaching and enhance institutional administration (Kazu & Yavulzalp, 2008; Kirschner & Woperies, 2003). The use of information and communication technology as a tool for enhancing students' learning, teachers' instruction, and as catalyst for improving access to quality education has become a necessity. Recognising the impact of new technologies on the workplace and everyday life, teacher education institutions try to restructure their education programmes and classroom facilities, in order to meet the potentials of ICT in improving the content of teacher education. Information and communication technology within the school environment include use for school administration and management, teaching and learning of ICT related skills for enhancing the presentation of classroom work, teaching/learning repetitive tasks, teaching/learning intellectual, thinking and problem solving skills,

stimulating creativity and imagination; for research by teachers and students, and as communication tool by teachers and students (Collis & Moonen, 2001; Derbyshire, 2003; Moursund & Bielefeldt, 1999).

Information and communications technologies are computer based tools used by people to work with information and communication processing needs of an organization. Its purview covers computer hardware and software, the network, and other digital devices like video, audio, camera, and so on, which convert information (text, sound, motion, etc,) into digital form (Moursund & Bielefeldt, 1999). Successful integration of ICT in the school system depends largely on the competence and on the attitude of teachers towards the role of modern technologies in teaching and learning. Thus, experienced teachers, newly qualified, and student-teachers need to be confident in using ICT effectively in their teaching (Kyriakidou, Chrisostomou, & Bank, 2000).

Simply having ICT in schools will not guarantee their effective use. Regardless of the quantity and quality of technology placed in classrooms, the key to how those tools are used is

the teacher; therefore teachers must have the competence and the right attitude towards technology (Kadel, 2005). Attitudes refer to one's positive or negative judgment about a concrete subject. Attitudes are determined by the analysis of the information regarding the result of an action and by the positive or negative evaluation of these results (Ajzen & Fishbein, 1980). There is a common saying that attitude determines altitude. Studies have established close links and affinities between teachers' attitude and their use of ICT. More positive attitudes towards the computer were associated with a higher level of computer experience (Dyck & Smither, 1995; Teo, 2008). Students' confidence on ICT can be explained through the attitude and behaviors of their teachers. Teachers' behavior is a critical influence on students' confidence and attitude towards ICT as they provide important role model to their students (Derbyshire, 2003). The literature suggests that lack of adequate training and experience is one of the main reasons why teachers do not use technology in their teaching. This also eventuates in teachers' negative attitude towards computer and technology. In addition, lack of confidence leads to reluctance to use computers by the teachers (Kumar & Kumar, 2003).

Attitude of pre-service and in-service teachers towards computer and technology skills can be improved by integrating technology into teacher education (Zammit, 1992). Findings have revealed that a significant relationship exist between computer attitude and its use in institutions for pre-service teachers (Khine, 2001), and also for serving teachers in the affective attitude, general usefulness, behavioral control, and pedagogical use (Yuen & Ma, 2002). Attitude is a major predictor of future computer use. Lee (1997) study indicated the importance of appropriate responses to the trainee's feelings about using ICT as one of the factors critical to success. Thus, there is the need to take care of the emotional needs of preservice teachers as attitude is a major predictor of future ICT use. Pre-service teachers have positive attitude and are highly enthusiastic about interactive whiteboards as an important feature of teaching and learning, and this motivated them to practice using the technology (Kennewell, & Morgan, 2003) Lee (1997) found that a great number of pre-service teachers are not equipped with basic computer operational skills; therefore, for teachers to be

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able to integrate ICT into the school curriculum, groundwork must be done at the pre-service teacher education level. Teacher educators need to understand the dimensions of pre-service teacher attitude as a means of developing teacher education curriculum relevant for the contemporary knowledge age.

The study was triggered by various concerns from educational stakeholders that teachers are not aware of the potentials that technology offers in pedagogy (Mselle, 2012). The use of modern technological tools such as computers and internet is still in its infancy stage in most developing countries including Indonesia. ICT as a pedagogical tool is regarded as the use of ICT facilities in teaching and learning process which involves the use of software application to solve problems, to provoke student capabilities, to create products or communicate and share their perspectives with each other (Jonassen, Howland, Marra, & Crismond, 2008).

In the context of the present study, it is the ability of teachers to access information, create solutions, analyze and apply knowledge in teaching and learning process. A number of international studies have shown that secondary school teachers lack competencies on the use of ICT as a pedagogical tool in teaching and learning process (Nihuka & Voogt, 2011; Bingmlas, 2009. In this regards, it makes sense to analyze the attitude and competences of pre-service teacher on the use of ICT in English classrooms.

Problem Statements

The following research problems guided the study:

- 1. What is the attitude of pre-service teacher towards information and communication technology (ICT)?
- 2. What is the level of competence of pre-service teachers in the use of information and communication technology (ICT)?

Purpose of the Study

The main purpose of this study was to investigate the attitude and competence of preservice teachers towards information and communication technology. Specifically, the present study examined:

- 1. The attitude of pre-service teachers towards the use of ICT.
- 2. The competence of pre-service teachers in the use of ICT.

RELATED LITERATURE REVIEW

The Use of ICT in Teaching-Learning Process

Teachers have very important roles in many society. The roles they play in the education process are central to basic education, in particularly more in Third World countries. A daunting challenge facing the education system is lack of competent teachers who are literate or proficient in the use of information technology. Information Communication Technology (ICT) proficiency is the ability to use technology tools and networks to define an information need, to access, to manage, integrate and evaluate information. The ability to access, evaluate, organise and use information from a variety of sources is known as Information literacy (Humes,

2003). As agents of change, it is important that teachers are ICT literate as this could bring about a lot of positive attitude towards the use of computer and information technologies. Regardless of the quantity and quality of technology available in classrooms, the key to how ICTs are used is the teacher. Hence it is important that teachers are competent and have the right attitude towards technology (Kadel, 2005). A school could have ICT hardware and software, but whether used efficiently will depend on the teachers. It will depend on the teachers' beliefs and experiences, levels of knowledge, attitude towards ICT, educational applications, the expected outcomes and the teaching and learning approach (Thomas and Stratton, 2006). High levels of knowledge, value, skill, personal dispositions, sensitivities and capabilities, will determine the ability to put those combinations into practice in appropriate way (Commonwealth Department of Education, 2002).

An ICT competency describes what a teacher should know to be able to use technology in his or her professional practice. Some major ICT competencies that teachers require were highlighted by Kirschner and Woperies (2003). These include competency in making personal use of ICT, mastery of a range of educational paradigms that make use of ICT, making use of ICT as minds tools, using ICT as tool for teaching, mastering a range of assessment paradigms which involves use of ICT, and understanding the policy dimensions of the use of ICT for teaching and learning (Robbins, 1998). In order to successfully impart knowledge to students, it is important that teachers are well equipped with the knowledge that they need.

The central question is, do pre-service teachers and teachers have the required knowledge of ICT? There are studies which reveal that teachers do not acquire the necessary level of knowledge. Findings by Rosnaini and Mohd Arif (2010) show that a minority group of teachers were knowledgeable in basic ICT. The majority of them only had average knowledge in ICT or very minimal knowledge of ICT. This scenario clearly shows that the key factor in making ICT programs successful in school is to upgrade the level of ICT knowledge among teachers (Moganashwari and Parilah, 2013). ICT is a tool that can be used across the curriculum or in separate subjects where the emphasis is on the development of ICT-related skills, knowledge, processes, and attitudes (UNESCO, 2007). It enhances the learning outcomes of students within the limits of the existing curriculum and also a potential tool to transform the teacher-based classrooms into learner-focused, rich and interactive learning environments.

Teachers are the key elements in this transformation based on the acceptance of ICT learning and teaching tool in schools. According to Albirini (2006), teachers' attitudes toward computer technologies are also related to teachers' competence in using the technology. In addition, they have a significant impact on the openness to new experiences, and also reflect and implement the changes. Positive attitude towards ICT, though too limited support their use in classes. ICT should be effectively used in classrooms as this would serve justice to the investments made for the ICT to be available in the classrooms.

Plomp et.al (1996) identify three objectives which distinguished for the use of ICT in education such as, the use of ICT as object of study, the use of ICT as aspect of a discipline or profession; and the use of ICT as medium for teaching and learning. Peck and Domcott (1994) outlined ten reasons that technologies should be used in schools: (1) Technology enables teachers

to individualize instruction, which allows students to learn and develop at their own pace in a non-threatening environment; (2) Students need to be proficient at accessing, evaluating and communicating, and information; (3) Technology can increase the quantity and quality of students' thinking and writing through the use of word processors; (4) Technology can develop students' critical thinking and allowing them to organize, analyze, interpret, develop, and evaluate their own work; (5) Technology can encourage students' artistic expression; (6) Technology enables students to access resources outside the school; (7) Technology can bring new and exciting learning experiences to students; (8) Students need to feel comfortable using computer, since they will become an increasingly important part of students' world; (9) Technology creates opportunities for students to do meaningful work, and; (10) Schools need to increase their productivity and efficiency. Thus, pre-service teachers are expected to make good use of modern teaching technology and develop effective teaching resources.

Morgan (1997) claimed that when computers are used, there are many learning processes are engaged such as: (1) gather information; (2) teacher as facilitator; (3) involvement in experiential learning; (4) face-to-face communication; (5) expanded creativity, and (6) testing of new knowledge. Murphy (1995) summarizes the learning outcomes that result from the use of technology in classroom as following: (1) social growth, (2) problem solving, (3) peer teaching, (4) independent work, and (5) exploration. Technologies have played a dictating role in the field of education. Researchers have shown technology integrated into mainstream classrooms support higher-level learning and thinking skills among students. It's proved to have positive effects in language learning and it becomes as an integral part of education and contributed as teaching tools in the language classroom (Tsou, Wang & Tzeng, 2006). There is a great deal of interest to learn more about the potential use of ICT in schools. Pelgrum (2001) identified several reasons why technologies in general and computers in particular might be important to schools. These included rationales relating to social and economic interests, such as reducing the costs of education, supporting the computer industry, preparing students for work and for living in a society permeated with technology, and making the school more attractive to its potential clients. Public initiatives have intended to spread the use of computer technology in schools by implementing computer laboratories and embedding actual classrooms with digital technologies to assist and support current classroom learning (Kozma, 2003).

Teachers' attitudes towards the use of ICT

Achieving a meaningful use of computer technology in the field of education can be influenced by many factors. One of these factors is teachers' attitudes towards the use of technology in teaching and learning process. Research shows that the success of technology use in the educational settings largely depends on teachers attitudes toward technology use (Albirini, 2006, Baylor & Ritchie, 2002). Teachers' attitudes are considered as a major predictor of the use of new technologies in the educational settings (Albirini, 2006). Thus, their attitudes toward computer can play an important role in the acceptance and actual use of computers. The successful utilization of technologies in the classroom depends mainly on the teachers' attitudes toward these tools (Kluever, Lam, Hoffman, Green & Swearinges, 1994).

Thus, it can be concluded that the attitude further related to the usage frequency of technology and usage amount of the technology. Thus, an attitude plays an important role in determining people reactions to situations. A review of the psychological literature reveals diverse definitions of attitudes. Allport (1935:810) defined it as "a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related". Other researchers define attitude as a positive or negative emotional reaction toward a specific situation. Moreover, Fishbein (1967) defined attitude as "a learned predisposition to respond to an object or class of objects in a consistently favorable or unfavorable way". Attitudes are key factors in whether teachers accept computer as a teaching tool in their teaching practices. Correspondingly, a number of studies were carried out to determine teacher attitudes toward computer use. Harrison and Rainer (1992) conducted their research using data compiled from a 1990 survey of 776 knowledge and information workers from a large university in the southern United States. They found that participants with negative computer attitudes were less skilled in computer use and were therefore less likely to accept and adapt to technology than those with positive attitudes. Albirini (2004) conducted a study to investigate the attitudes of EFL teachers in Syrian high schools toward technology in education, both quantitative and qualitative methods were employed to collect data. He found that the results from both quantitative and qualitative data indicated that teachers had positive attitudes toward technology use in education.

METHODOLOGY

In this study, a survey was employed to collect data. The survey instrument used for this research was adapted from Yusuf et.al (2011) based on established procedures in literature. The survey instrument contained two major sections. Section A included questions focused on student-teachers' attitude towards Information and Communication Technology (ICT). The section contained 14 items in the Likert response. Section B was designed to know the level of competence of students-teachers in the use of ICT, specifically, basic ICT competence and not the educational ICT competence. The data collection was limited to pre-service teacher of English Department who joined PPLK program.

Sample

The participants were 50 pre-service teachers randomly sampled from the third year students of English department of the Faculty of Education, Sultan Ageng Tirtayasa University who joined teaching practice program (PPLK) at some schools in Serang City.

Survey Instrument

The survey instrument used for this research was adapted from Yusuf et.al (2011) based on established procedures in literature. The survey instrument contained two major sections. Section A included questions focused on student-teachers' attitude towards Information and Communication Technology (ICT). The section contained 14 items and the Likert response mode of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) were used.

Section B was designed to know the level of competence of students-teachers in the use of ICT, specifically, basic ICT competence and not the educational ICT competence. The section contained 35 items divided into four major cluster namely Basic computer operation (9 items), the use of application software (10 items), the use of internet sources (12 items) and the use of peripheral ICT equipment (4 items). The Likert response mode of Fully Competence (FC), Regular and Confident User (RCU), Ocassionally Use (OU), Do not Use (DU) and Not Aware (NA) were used.

FINDINGS

The attitude of pre-service teachers towards information and communication technology (ICT)

Based on the results of the analysis, there is every indication that responses to the positive statements show that majority of respondents have a positive attitude towards ICT. It is seen that more respondents believe that ICT enhances students' learning (86%), provides better learning experiences (82%), makes course more interesting (78%) and gives opportunity to learn more (76%). However, for negative statements show that only about 32% of the respondents agreed or strongly agreed that they won't have anything to do with ICT, while about 68% disagreed and also strongly disagreed on that statement. About 30% of respondents agreed that they have phobia for ICT equipment while about 70% of the respondents disagree that they have phobia for ICT equipment. About 68% of the respondents disagreed that ICT can't address the needs of school system, while more than half of the respondents (30%) agreed that the state of infrastructural facilities discourages them from using ICT. As seen from the analysis in Table 1, pre-service teachers generally have positive attitude towards ICT.

Table 1: The attitude of pre-service teachers towards information and communication technology

No.	Statement	SA	A	D	SD
		%			
1	ICT enhances students' learning.	64	22	14	0
2	Teacher education should include ICT.	60	28	12	0
3	Mail creates more information between teachers and learners.	48	26	18	8
4	ICT provides better learning experiences.	54	28	12	6
5	I would work harder if I could use ICT.	46	32	14	8
6	I learn more from ICT than I do from books.	46	26	18	10
7	ICT is useful in dissemination of information.	38	34	22	4
8	ICT makes course more interesting.	52	26	18	4
9	ICT skill is worthwhile.	46	28	16	10
10	ICT gives opportunity to learn more.	52	24	14	8
11	I won't have anything to do with ICT.	14	18	28	40
12	I have phobia for ICT equipment.	12	18	30	40
13	ICT can't address the needs of school system.	18	14	34	34
14	The state of facilities discourages me from using ICT.	12	18	30	40

Level of competence of student-teachers in the use of information and communication technology (ICT)

The Competence of Student-Teachers in Basic Computer Operation and Issues

Most of the respondents indicated that they are competent on most of the items. Over 50 percent are fully competent or are regular and confident user of locating and running an application program, searching for files on computer system, accessing information on CD/DVD, organizing electronic files into folders, moving files between drives and printing to various networked printers. It can also be observed that in average, 10% percents of the respondents noted that they had occasionally used these applications/operations but need further training.

Table 2:: The Competence of Student-Teachers in Basic Computer Operation and Issues

No.	Statement	FC	RCU	OU	DU	NA
				%		
1	I can locate and run an application program e.g. word	50	36	10	4	0
2	I can search for files on computer system	54	34	12	0	0
3	I can connect the computer and its peripherals	48	30	16	6	0
4	I can access information on CD/DVD	64	32	4	0	0
5	I can organize electronic files into folders	62	26	12	0	0
6	I can move files between drives (e.g. from A: to C).	66	30	4	0	0
7	I can print to various networked printers.	56	32	10	2	0
8	I am aware of computer security, copyright and the law	48	34	12	6	0
9	I am aware of health and safety issues relating to the computing environment	46	36	10	4	4

The Competence of Student-Teachers in the Use of Application Software

The results in Table 3 are on student-teachers' competence in the use of application software. Results showed that over 80% of the respondents indicated competency in the use of word processing package. Moreover, they are fully competent or are regular and confident users of spreadsheet, presentation, and database packages. Only less than 20% of the respondents indicated that they occasionally used these applications/operations but needed further training. These results underscore the need for the student-teachers to develop competency in the use of spreadsheet and database packages applications.

Table 3: The Competence of Student-Teachers in the Use of Application Software

No.	Statement	FC	RCU	OU	DU	NA
				%		
1	I can open a new document in word	88	12	0	0	0
2	I can use simple editing e.g.bold, italics, centering, font	86	14	0	0	0
	size, etc					
3	I can use spreadsheet package very well.	76	20	2	0	2
4	I can use spreadsheet to make predictions.	68	18	10	2	2
5	I can sort and filter data	64	16	14	4	2
6	I can create a basic presentation package.	76	14	8	2	0
7	I can modify colors of text, lines and spaces on a slide	70	18	10	2	0
8	I can introduce animation into slides.	58	22	16	2	2
9	I can set up a database	54	26	14	4	2
10	I can enter and update data in a database	52	24	18	4	2

The Competence of Student-Teachers in the Use of Internet Resources

On the respondents' use of Internet resources, Table 4 shows that they are competent in most of the items. For instance, over 70% of them noted that they are fully competent or a regular and confident users of the resources in accessing and downloading files from internet. While over 60% indicated that they can work with email messsages. However, only 24% percent indicated that they are fully competent or are regular and confident users of deep web searching using meta-search engines, while 18% are fully competent or are regular and confident users of web authoring tools. However, 28% percent noted that they needed further training for doing deep web searching using appropriate metasearch engines.

Table 4: The Competence of Student-Teachers in the Use of Internet Resources

No.	Statement	FC	RCU	OU	DU	NA
				%		
1	I can access an Internet site via its website address	76	20	2	2	0
2	I can download files from the Internet.	78	18	2	2	0
3	I can send and receive e-mail messages.	68	14	8	8	2
4	I can attach files to outgoing e-mails.	68	14	8	8	2
5	I can sort messages and file in created folders	56	18	14	8	4
6	I can save a document in various file formats including HTML	58	16	12	10	4
7	I can save text and images from web pages.	62	14	14	6	4
8	I can communicate online with other students on homework / assignment	56	16	16	8	4
9	I can use web search engines (google, alltheweb, altavista, etc) very well.	70	16	10	4	0
10	I can do deep web searching using appropriate metasearch engines (Surf Wax, Vivissimo, HotBot, etc.) very well.	24	26	18	28	4
11	I can use web authoring tools (NetObjects Fusion, Microsoft FrontPage, and Macromedia Dreamweaver)	18	22	14	42	4
12	I can chat on the Internet using instant messaging tools (Yahoo, MSN, Skype, etc.)	54	14	12	14	6

The Competence of Student-Teachers in the Use of Peripheral ICT Equipment

The results in Table 5 are on pre-service teachers' competence in the use peripheral ICT equipment. From the results all the respondents can use digital camera to capture images, and more than 50% of the respondents had competency in the use web camera, liquid crystal display projector and scanner. In addition, between 8% and 14% percents indicated that they occasionally used these equipment but needed further training.

Table 5: The Competence of Student-Teachers in the Use of Peripheral ICT Equipment

No.	Statement	FC	RCU	OU	DU	NA
1	I can use a digital camera to capture images.	100	0	0	0	0
2	I can use the web camera to communicate on the Internet	56	24	14	6	0
3	I can set up and use Liquid Crystal Display (LCD) or	68	14	10	8	0
	Multimedia Projector					
4	I can use a scanner to copy images.	54	24	8	12	2

DISCUSSION

The importance of information and communication technology (ICT) in teacher education had been well established by several studies. This study investigated the attitude and competence of pre-service teachers towards information and communication technology. Results of this present study revealed that pre-service teachers at English Department of Sultan Ageng Tirtayasa University who joined PPLK seem to have positive attitude toward the use of ICT in teaching. This positive attitude is an important indicator of willingness and first step in effective ICT integration in curriculum. This result is in compliance with research carried out by Lau and Yeoh (2008), Melor (2007) and Samuel and Zaitun (2007). These studies show that the majority of respondents have a positive attitude towards the use of ICT in teaching.

The results further indicated that majority of the pre-service teacher lack skills in various ICT applications and equipment operations that are important to support and enhance their learning experiences and ICT integration in instruction. Majority of pre-service teachers (over 70%) are not competent in the use of metasearch engine and web authoring tools.

The department emphasis on integrating ICT should be implemented within defined educational strategy. Students should be exposed to computer assisted learning (CAL) in teacher education to promote self-directed learning, and thus bring student-teachers up to an acceptable level of competency in the use of ICT. In addition, computer-based test currently used for large classes should be expanded to cover most courses. In addition, online teaching should be explored to allow students to focus more on managing their own learning and to work at their own time and pace; and this will also allow the use of sound, videos, and animation to communicate information (Rajab & Baqain, 2005). The findings indicate that most pre-service teachers have average competences in using ICT. This stems from the fact that only one course is available in the English Department namely ICT in Language Teaching. The English department only offers 2-credit course in ICT in Language Teaching, a course that

accommodates several contents with ICT related aspect being treated within two hours in a week. This fact, however, forces the department to accommodate learning about ICT integration in teacher education so that the pre-service teacher get prepared to integrate technology into their teaching.

CONCLUSION

In this study, it was found that pre-service teachers have positive attitude towards the use of ICT. The results revealed that among the basic computer competency sub-divisions, preservice teacher indicated competency in general computer operation, word processing, downloading and using basic internet resources. However, the same students lacked required competence in the use of metasearch engine and web authoring tools. The findings underscore the need to introduce student-teachers to more courses on ICT with needed hand-on experiences so as to promote effective integration of ICT throughout the curriculum by student-teachers. In addition, provisions should be made for lecturers to be able to integrate ICT-based methodology into their lectures, and also, all classrooms should be equipped with necessary infrastructure and, lastly, all students should be provided with access to media laboratories whenever they want to.

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