

# Vocational Teacher Perceptions on the use of ICT in Learning Computer Network

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**Abstract.** ICT has been widely used in primary education to vocational schools, but has not been so clearly integrate ICT in the learning process. While the teacher is the key to the effective use of ICT processed. This paper reports a study of surveys that examine the perspective of vocational school teachers. Current research aims to examine a vocational school teacher knowledge about ICT and support for computer use for learning. The sample in this research group consists of 25 teachers of vocational schools. The findings of this research use descriptive method with engineering survey with sampling purposes. Resources in research is journals and book report research results. The results showed teachers have a positive outlook towards the use of ICT in learning. The conclusions resulting from this research is the use of ICT to help teachers be more effective in teaching in the classroom and can improve student learning.

## 1. Introduction

Teacher holding a major role and very important in achieving the learning objectives by applying the right learning model. Further integration of ICT-based learning models into is one of the new innovations in the learning in the classroom [1] [2] [3]. 21st century learning is a learning experience that helps students develop the potential of the socio cultural, cognitive, Metacognition, productive, and technology to work [4] [5]. Digital technology is often presented as the driving force of the transformation of education and ICT will contribute positively toward this transformation [6] [7] [8]. Teachers who have experience and are accustomed to utilizing ICT in learning such as accessing the internet, using a communication application, using word processing applications and educational CDs, still requires a basic knowledge of How to develop a web page and multimedia applications, how to make the application of simulation learning and how to make computer programs and web pages that require the capability of programming, graphics processing and editing sounds like the ability of an already professional [9]. Most of the teachers are not capable of using the hardware in the learning process because of lack of resources mainly teaching and learning. This shows that most teachers in college does not integrate ICT in their teaching courses [10]. Teachers are developing and testing a new strategy that is specific to mediating learning ICT-supported. In particular, some form of ICT by focusing the attention of students to the learning objectives of the underlying [11].

Gap with previous research i.e. research analyzing the relationship with coordinating demographics as independent variable, such as the location of the school, the type of school and school accreditation status at present, and to give preference a more thorough information about the attitude, and the willingness of teachers to learn more skills in ICT.



Research on factors influencing teachers' use of ICT in education one of them comparing the two theories about the factors that affect teachers in implementing ICT in learning. The results showed that the theory of self-efficacy and attitudes have been widely reported in the U.S. research symbiotically related to ICT and its use in classrooms [12].

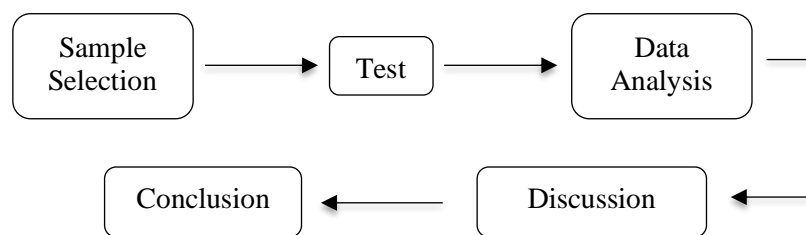
A review of research through interviews to teachers who teach the subjects the basic computer and network shows still awaited the teacher who does not make use of ICT in learning. Teachers who have yet to maximize the use of ICT in the lesson due to lack of creativity, not innovative and are still using the old traditions so that the decrease in the level of professionalism and adaptability of teachers towards new technologies. The main problem arises from some discussion of how the perception of teacher research against the use of ICT and the factors affecting the use of ICT?

Based on the problems that are found, then do some research on how the perception of teachers in the use of ICT in learning computer networking, so that the formulation of the problem can be formulated into several research questions as the following:

1. How the perception of teachers of subjects the basic computer and network against the use of ICT?
2. What are the factors affecting the use of ICT in learning basic computer and network?

## 2. Experimental Methods

This research uses descriptive techniques with engineering literature and documentation. The descriptive method was used because it is only aimed to know the perceptions of teachers on the use of ICT in learning computer networking. The design of the research can be seen in Figure 1 as follows.



**Figure 1.** Research Design

Review of the research conducted by obtaining background information of the respondents, the response and the interest of the respondent against the ICT in learning, increase proficiency level of respondents in using ICT for learning purposes, passed the level support for ICT and the problems encountered in using ICT.

The population of the research was obtained from all subjects. They are teacher computer and basic network, totaling 45 persons from 16 Vocational high school in Dumai. As for the sample of the study amounted to 25 teachers who have been teaching for more than 5 years. Sampling technique was purposive sampling. This research defines a purposive sampling as the unit of random selection from the population that is believed to produce the desired estimate of the parameters of the wanted population [13] [14]. Research conducted for one week to answer the question in the form of a detailed questionnaire.

**Table 1.** Respondents by Location and School Status.

No	School Name	Status	Accreditation	Distance from city (km)	Number of teachers
1	SMKN 1 Dumai	Public	A	5	2
2	SMKN 2 Dumai	Public	A	3	4
3	SMKN 3 Dumai	Public	B	45	1
4	SMKN 4 Dumai	Public	A	28	3
5	SMKN 5 Dumai	Public	A	9	3
6	SMKN 6 Dumai	Public	-	20	1
7	SMK Taruna Persada	Private	A	6	3
8	SMK Al Munawarah	Private	B	4	1
9	SMK Erna	Private	A	1.5	2
10	SMK Budi Dharma	Private	B	1	2
11	SMK Ikasari	Private	-	7	1
12	SMK PGRI	Private	-	4	1
13	SMK Pelayaran	Private	B	1	1

Based on table 1, the sample used is a teacher who has taught the subjects of the basic computer and network at his school. Sampling techniques in the study using a Purposive Sampling with a particular purpose after the test then the data analysis and discussion then made the conclusions of the study results. 25 questionnaires were randomly distributed to teachers of subjects to computers and computer networks from 16 vocational school located in Dumai, and 25 questionnaires filled out. It gives 100% response rate.

### 3. Results and discussion

Based on table 2, researchers looked at the level of teacher interest in ICT in computer use in various work and learning, use of e-mail / messenger, internet and ICT utilization in learning process.

**Table 2.** Level of Teacher Interests ICT

No	Level of teacher's perception in ICT	High (%)	Medium (%)	Low (%)
1	The use of computers for various jobs and learning	23 92%	2 8%	0 0%
2	Use of e-mail / messenger to communicate	22 88%	2 8%	1 4%
3	Finding interesting graphic material	17 68%	6 24%	2 8%
4	Efforts to improve ICT skills for learning in various ways	18 72%	5 20%	2 8%
5	Learn the use of ICT from other teachers	19 76%	5 20%	1 4%
6	Getting the latest information for learning via the internet	20 80%	4 16%	1 4%
7	Proficient using ICT tools in learning	21 84%	3 12%	1 4%
8	Attend government-run ICT training	25 100%	0 0%	0 0%

Based on table 2, researchers looking at the level of interest in using ICT in teacher against the computer in a variety of work and learning, the use of mail/messenger, internet and utilization of ICT in the learning process.

Through this research question, the items generally respondents have a very high level of interest towards ICT i.e. average 82.5% to 4% of the overall respondents. While 13.5% have a medium level of interest towards ICT. Use of computers in a variety of work and learning, the second highest position i.e. 92% interest teachers to training after ICT organized government that is 100%. The difficulty in finding teachers learning materials an attractive graphic shape is lowest with the results of question items that is 68%.

Through the exposure data obtained from this research indicate a very high teacher's interest in using computers and ICT in learning. The Internet application and the messenger is one of the media that are effective in improving teachers' professional knowledge and abilities.

Some of the factors affecting the use of ICT in learning basic computer and network. In research presented i.e. theory of self-efficacy [15] and the other is the behavioral relations theory [16]. The second theory is used on research learning in ICT utilization.

A second theory suggests that a positive attitude that is associated specifically with ICT in learning and feelings of self-efficacy in the use of computers in education seems to affect the use of ICT more. A positive attitude toward ICT generally advised not to contribute to the use of ICT in the classroom. The difference between the importance of specific and general attitudes towards the use of ICT and the emphasis on self-efficacy contributes to the research. Self-efficacy and attitudes associated with each other are advised to use ICT.

#### 4. Conclusion

Perceptions of teachers is an affective domain which serves to encourage teachers to incorporate the use of ICT in particular direction with regard to the task of teaching. Perception towards ICT will also increase the willingness of teachers to advance yourself and change your attitude toward more positive. Research results through the analysis that has been performed, clearly states the teachers the basic computer and network has high interest i.e. 82.5% in the use of ICT as a medium of instruction. ICT is no longer something a new phenomenon in the world of education. Master teacher will also show an increased knowledge and skills related to ICT viewing from the willingness of teachers to follow a course that is 100%. Teachers also strive themselves through fellow colleagues about how the use of ICT equipment for the purpose of teaching and learning.

#### Acknowledgement

The author wishes to thanks for Mr. Dedi Rohendi, Nurhabibah, Halida Yanti and Yusep Zaini Mi'raj for the journal reviewers and editors who helped to improve the paper.

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