ICT Capability Teachers at the Junior and Senior High School in Ternate City

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Abstract: The phenomenon of the industrial revolution has penetrated in various sectors, including in the field of education. Teachers are required to adapt and have good IT skills in managing classroom learning. Future teaching skills include the ability to develop innovative ways to use technology to improve the learning environment and encourage technological literacy, deepening knowledge, and generating knowledge. This study aims to obtain preliminary information about the perceptions and knowledge of IT Literacy for junior / senior high school teachers throughout the city of Ternate, as well as obtain a profile of the basic knowledge of junior / senior high school teachers regarding IT literacy. This study uses survey research methods with a quantitative approach. The data collection technique used is by distributing questionnaires and conducting interviews on a sample that has been determined in 10 schools with a sample of teachers in each school determined randomly. Data analysis was calculated based on the number of checklists filled out by the respondents, then it was devised to determine the level of perception of each teacher. Interviews were conducted on respondents randomly to find out information that supports questionnaire contents. The results showed that teachers in secondary schools in Ternate had 73% ICT skills. Not all teachers have participated in ICT training and not all teachers have good IT literacy. In the Central Middle School, almost 90% of teachers have attended ICT training and know the term IT well, and have implemented online applications well. Unlike the teachers in other sub-districts as sampling, approximately 80% of teachers have not participated in ICT training. The lack of teacher participation in training has led to low IT skills that teachers have.

1 INTRODUCTION

The framework for ICT Competencies for teachers is part of various initiatives by the United Nations and specialized agencies including UNESCO, to promote education reform and sustainable economic development. The UNESCO International Commission on Education emphasizes that in the 21st century is a way of life-long learning and participation in learning societies is key to meeting the challenges posed by a rapidly changing world, emphasizing the four pillars of learning, namely: 'Learn to live together' , 'Learn to know', 'Learn to do', and 'Learn to be' (Fallis, 2013; Sanders, 2004).

According to Law No. 14 of 2005 concerning Teachers and Lecturers, teachers as professional jobs must have professional principles as stated in article 7 paragraph 1, namely: Professional teachers and lecturers are specialized fields of work that require professional principles as follows: (a) have talent, interest, soul calling and idealism; (b) have educational qualifications and educational backgrounds in accordance with their fields of duty; (c) have the competencies needed in accordance with their field of duty; (d) comply with the professional code of ethics; (e) have rights and obligations in carrying out their duties; (f) obtain income determined according to his performance; (g) have the opportunity to develop their profession in a sustainable manner; (h) obtain legal protection in carrying out their professional duties; and (i) have professional organizations with legal entities (Munir, 2014).

The growth of internet users from the 1900s to 2017 is increasing. The results of the 2017 survey show a significant number, with 143.26 million Indonesians using the internet. This figure shows that the Indonesian people are familiar and indirectly involved in future technological developments.

The identification of Literacy IT skills in junior and senior high school teachers in Ternate City is important in facing the industry revolution 4.0 which cannot be avoided. With a variety of applications and technologies in learning that are varied, it can facilitate the work of the teacher and learning in the classroom becomes more enjoyable if the teacher is able to master the technology well. IT literacy is an important part in producing superior human resources and the golden generation of the Indonesian people, as stated in the Ministry of Education and Culture and Ministry of Education and Higher Education's Strategic Plan, as well as the vision of Indonesian education 2025.

There is not much data and research that reveals about the IT Literacy skills of teachers in primary and secondary education (SMP and SMA) in Ternate City. This research can be a database for policy makers to encourage acceleration and improvement of IT Literacy skills for teachers in order to improve the quality of education in Ternate City. Keeping in mind that at present, literacy is not just reading, writing and counting, but more than that, IT Literacy is a very important ability for every teacher.

2 METHOD

This study uses a combination of quantitative and qualitative methods (Punch, 2009). Simple quantitative methods are used when calculating the number of answer choices by respondents to the questions on the questionnaire by tabulating and calculating the percentage. While the qualitative method for analyzing written answers provided by respondents, where some questions in the questionnaire are open and also given space to express their opinions and responses regarding teaching with multimedia and internet computers (Creswell, 1998).

Data collection is carried out through surveys in all SMP / SMA in Ternate City. Samples that can represent the population are taken using a multistage random sampling technique. Determination of the sample size of the population, determined by using the formula from Slovin (Fatimah Saleh & Lim, 2010) as follows:

$$N= N/1+Ne^2$$

In order to obtain the validity and reliability of the instruments used, first try out the instrument to ensure that the instrument is an accurate and reliable measuring instrument.

The data collection technique used is by distributing questionnaires and conducting interviews on a predetermined sample in 20 schools with a sample of teachers in each school determined randomly. The instrument used was a questionnaire about the use of IT and IT knowledge related to the industrial revolution 4.0 the questionnaire used was in the form of a closed questionnaire.

Data analysis was calculated based on the number of checklists filled out by the respondents, then it was challenged to determine the level of perception of each teacher. Interviews were conducted at respondents randomly to find out information that supports questionnaire contents.

The category of each indicator is transferred to an absolute number as follows:

Table 1: Indicator Category.

No.	Category	Score
1	Proficient	3
2	Able	2
3	Underprivilaged	1
4	Disable	0

Furthermore, each respondent scores summed with other respondents and averages so that the overall score of respondents' perceptions is obtained as follows:

Average Score= Score of all Respondents/ Total Respondents

For frequency data and school facilities support, the same thing is also done, namely:

Table 2: Frequency of Facility Support

No.	Category	Score
1	Often (more than twice)	3
2	Rarely (more than once)	2
3	Ever (once time)	1
4	Never	0

Data processing and analysis is carried out through several steps, namely data editing, coding, tabulation, and data validation. Furthermore, the analysis is carried out using descriptive statistical techniques and associations for correlational data.

3 RESULT AND DISCUSS

The target school that became the sampling in this activity was representative of 4 sub-districts of Ternate City, namely Ternate Island sub-district, South Ternate sub-district, Central Ternate sub-district, and North Ternate sub-district. The number of schools that were sampled were 20 secondary schools in Ternate City. Of the 20 schools taken data

using questionnaire and interview instruments, it was presented in the form of a teacher's ability profile with 4 indicators, namely (1) whether or not there had been training activities, (2) the ability to operate Microsoft office, (3) IT support capabilities, and (4) basic IT literacy skills.
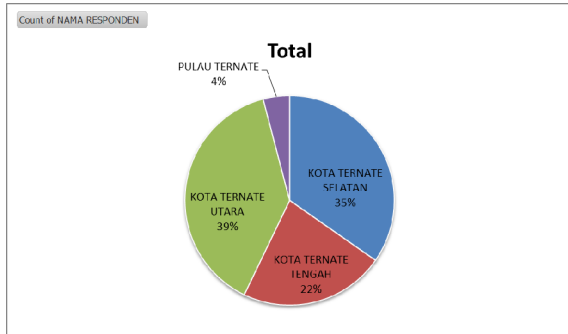

Figure 1: Number of Sample Schools.

The data needed to measure indicators of the ability to operate Microsoft Office for teachers is with a number of questions to measure teacher knowledge related to their ability in office operations and general problems that exist in office software.

The data needed to measure the indicators of IT supporters' abilities are a number of questions in the questionnaire to gather information related to the teacher's knowledge of other IT supporting software such as photoshop, corel draw, spss, and windows movie maker. Some of the software is a support for teachers in making learning media or supporting media so that the presentation looks interesting.

IT's basic literacy ability is one of the teacher's soft skills related to its relationship with the internet, and its problems and ability to operate learning online. Some indicators of elementary school teachers' IT skills are obtained through questionnaires with closed or open answers. The data that has been analyzed is shown in the following figure.
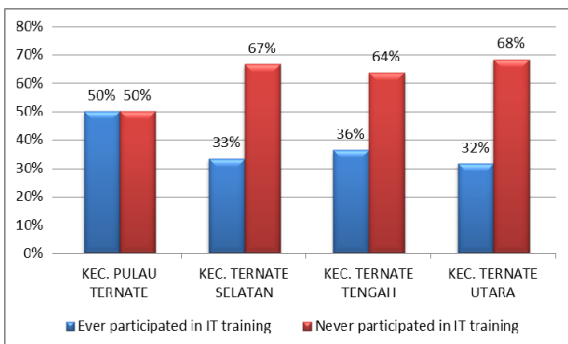

Figure 2: The condition of junior / senior high school teachers related to whether or not they took part in IT training.

Based on the graph, we can see that the distribution of teachers participating in IT training is still relatively small in 3 sub-districts within Ternate City, namely schools in the Central Ternate sub-district, Kec. Ternate Island, Kec. South Ternate, and Kec. North Ternate (> 80% of teachers who have never participated in IT training activities). Teachers residing in schools in the Ternate sub-district area, there were many who attended training activities, namely> 50%. In understanding and obtaining basic and advanced IT skills, continuous training is needed and intensive mentoring is needed. Not limited to fulfilling program implementation and purely project fulfilment.
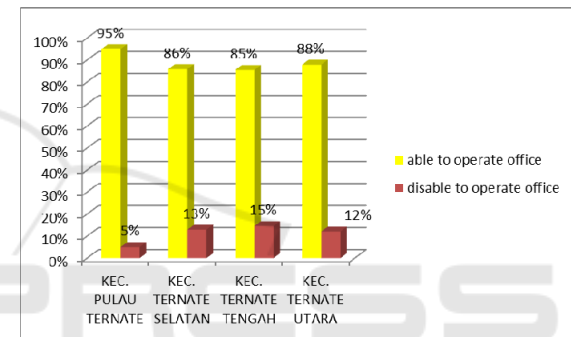

Figure 3: The Condition of Junior / Senior High School Teachers Related to the Ability to Operate Office.

Based on the graph, we can see that the teacher's ability to operate office more than 80% is good. Teachers who are in several sampling schools in the Central Ternate sub-district, South Ternate and North, are considered to have been able to operate offices, namely> 80%, and only a small number are not proficient.
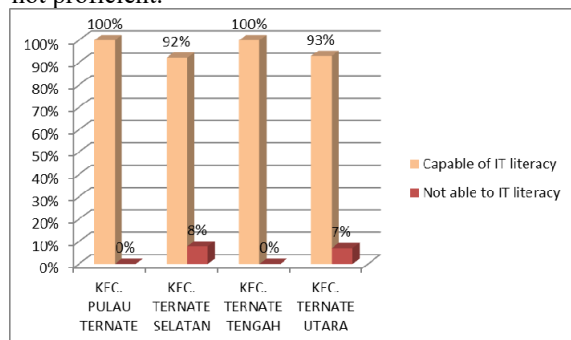

Figure 4: The State of Junior / Senior High School Teachers Related to Basic IT Literacy Skills.

Based on the graph, we can see that the teacher's ability to cultivate IT literacy is in the form of searching and browsing the internet, and making online learning very high. More than 80% of teachers have cultivated IT literacy and carry out online learning. This shows that the learning process carried out by the teacher has been digital based. More than 80% of teachers concluded that they had good IT (internet) literacy skills.

The ability to design good learning media, becomes an important thing that needs to be owned by teachers (teachers), both elementary, secondary and higher education. One supporter of the ability to make learning media is the ability of information and technology or information and communication technology (ICT). The need for teaching soft skills for IT is needed in the era of industrial revolution 4.0 today.

4 CONCLUSIONS

IT capability is one of the supporting skills in the 'Age of Now' which is really needed to achieve satisfying learning outcomes, but not a key factor for student learning outcomes. Coaching to teachers can be done in various ways, including involving teachers in training, bringing in resource persons to carry out training in schools, activating teacher learning forums (KKG and MGMP), collaborating with external parties (Universities, Teacher professional organizations, and field NGOs education) to carry out training activities in schools, and provide IT support facilities for teachers in schools.

With the role of technology in learning, the use of media plays an important role in the learning process. Teachers are required to be able to integrate ICT in learning by using more attractive media so that learning can take place more interactively, inspirational, fun, challenging, efficient and motivate students to actively participate and provide sufficient space for students to be creative and independent according to their interests , talents and psychological development of students.

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