ICT Literacy of Vocational High School Students

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Abstract. The development of information and communication technology (ICT) has brought about change in education in Indonesia. With ICT students can easily access a variety of information in supporting the learning process. But there was a problem where ICT infrastructure across Indonesia including in the uneven Siak Regency, this can lead to gaps in technology and also weak ICT literacy. This research aims to know the ICT literacy of the students of SMK in Siak Regency. The research method used was survey with the quantitative approach. The results of this study showed that the use of ICT (computers, Internet) has been used by students of SMK, but usability of ICT has not been fullest support the learning process.

1. Introduction
The development of information and communication technology (ICT) in a relatively short period of time has given the changes in the various joints of the life, is no exception in the world of education. World Education is believed to be the most dominant factor in developing the quality of human resources required generate human able to compete in the competition on the current globalization. Various efforts undertaken to improve the quality of education, quality and ability of students at all levels of education, including in Vocational high school (SMK). [1,2]

The presence of ICT (internet) for example in the development so far, it has brought change to the world of education. It's just that, the digital divide, especially in developing countries like Indonesia is still a problem to look for a solution. One of the factors that influence the digital divide, including ICT literacy, is a factor of economic and social geography. Both of these factors are very influential in computer usage and retain the opportunity to access the internet. The results of this research also suggest that the use of computers and the internet able to improve knowledge and skills of the informant. [3]

Changes to the curriculum of the curriculum unit level education (KTSP) into 2013 curriculum where subject’s computer skills and information management (KKPI) was replaced with service information and communication technology (ICT), [4], greatly affect students in using and leveraging technology in a positive and responsible.

Approximately 7,127 SMK students in Siak District [5]. Issues faced by students, in General is the lack of access to information, economic levels and weak old man. Such condition is the cause and effect between the two, meaning low economic level result against low levels of education, and low levels of access to information may also result in low levels of economy.

Based on the above description, then the main problem to be traced in this research is the extent of information technology literacy and communication of vocational students in Siak District. The purpose of this study is to determine the extent of information technology literacy and vocational student communication in learning in Siak District.
2. Literacy ICT
The ability to effectively and efficiently comprehend and utilize mass media content. Suggests some elements of media literacy: (1) An awareness of the impact of media; (2) An understanding of the process of mass communication; (3) Strategies for analyzing and discussing media messages; (4) An understanding of media content as a text that provides insight into our culture and our lives; (5) The ability to enjoy, understand, and appreciate media content; (6) An understanding of the ethical and moral obligations of media practitioners; (7) Development of appropriate and effective production skills [6].

One model for measuring the level of ICT literacy in the education world is usually used Personal Capability Maturity Model (P-CMM). In this case, ICT literacy is categorized into five levels, namely: Zero rate = if an individual is completely ignorant and does not care about the importance of information and technology for everyday life. Level one = if an individual has had one or two experiences, where information is an essential component of achieving desired and problem solving and has involved information technology to seek it. Level two = if an individual has repeatedly used technology to aid in daily activities and has had a pattern of repetition in its use. Level three = if an individual has a standard of mastery and understanding of the information and technology he enacts and consistently uses the standard as a reference for the organization of daily activities. Level four = if an individual has been able to significantly increase (quantitatively) the performance of his or her daily life activities through the use of information and technology. Level five = if an individual has regarded information and technology as an integral part of everyday activities and directly or indirectly colored his or her behavior and culture [7,8].

To understand the literacy of students to ICT should be known first various elements of knowledge, literacy experience, and other skills that must be owned by students. To measure the level of student literacy on information and communication technology, it can be done from the level of recognition, use, and purpose of using information and communication technology (ICT) and its various elements. This research will look at the level of ICT literacy, in this case, computer and the internet. The literacy used is the use of both media by the respondent, the location is often used when utilization and frequency using ICT media.

The level of understanding of ICT literacy is measured using the Personal Capability Maturity Model (P-CMM). From this, it can be seen that the respondent's ICT literacy is at what stage.

3. Methods
This research uses survey method with quantitative approach. [9] Data collection was conducted through a survey of the students of SMK in addition to the field of study of information and communication technology in Siak Regency. The principle of choosing the study site is based on two considerations, firstly, consideration of the representation of location and population. Second, consideration of the effectiveness of the research implementation. Related to these considerations. In order to produce a sample that can represent the population in all research sites, the sampling technique uses purposive random sampling method. While the ICT media discussed in this research is limited to two products of ICT namely computer and internet. The selection of this media is as the most familiar media and widely used in education. To obtain the validity and reliability of the instruments used, a pre-test is first performed, to ascertain whether the instrument is an accurate and reliable measuring instrument. Validity indicates the extent to which a measuring instrument measures what it wants to measure. While the reliability shows the extent to which a measurement result is relatively consistent if the measurement of the same aspect of the same measuring instrument or also called internal consistency reliability [10].

Initial research took 20 informants as a sample. The informant identity of the research result shows the sex informant, the most dominant man in this research, that is 14 informants following the women as many as 6 informants. While the age of informants between 16 to 18 years. These results indicate that students or students can master the ICT device more quickly because in accordance with technological developments and tasks provided by teachers. This is evident from the results of research where most students have access to ICT. In addition, the age of the majority of informants is still young, between
16 to 18 indicate that the penetration of ICT more quickly penetrated among students. This shows that young people are more likely to access ICT.

4. Use of Computer
This section is an analysis of the use/usage of computers by informants. Majority of the informants, 16 respondents have their own computers and can take advantage of computers, while 4 informants said they cannot use the computer. This is reflected in the age of informants and of course also related to informant education, young age, and educated tend to use and utilize the computer as a necessity and its relation to the lesson.

From 20 informants, as many as 16 informants stated using computers in the last month. While as many as 4 informants stated not to use computer during last one month. Therefore, it can be said that the computer becomes an important thing for the informant because only about 4 informants who did not declare use in the last month.

For frequency of computer usage in a week, as many as 12 informants stated using computer more than four times a week, 2 informants stated using computer 3 times a week, and 2 informants use computer twice a week.

Place informants use the most computers are in their own homes as many as 12 informants. Following at the school of 6 informants, and at the place of two informants.

The purpose of informants using the computer is to play this game is the most dominant goal of as many as 10 informants, while 7 informants is to process words, process data, and process numbers. Meanwhile, as many as 3 respondents admitted to spending less than two hours a day to have fun using the computer.

5. Use of the Internet
Section discusses internet usage by informants. All informants claimed to have used the internet. This means that informants are already using the internet in their daily lives.

As for the utilization of the internet, the results showed that, of the 20 informants who are utilizing the internet, 17 of whom the informant who claimed to use internet in one this last week. While the three informants stated not to use the internet in a week. Next is the most predominant frequencies used by informants in the use of the internet was four times in a week. Recorded 16 informants chose the answer. 4 while the informant that States use the internet twice a week.

The place of informants when accessing or using the internet based on the results of research shows that, most informants use the internet in the free internet area that is 10 informants, followed in school as many as 5 informants, 4 informants at home and using internet cafe as much as 1 informant. Free internet area becomes a favorite place for informants to access the internet.

Most informants 18 informants in a day spent two to four hours / day while using the internet, and only 2 informants who used six to eight hours a day while using the internet.

Meanwhile, internet facilities owned by informants, based on the results of research that all informants have an email address, then followed by ownership of personal accounts on social networking sites such as Facebook, twitter, and others as many as 18 informants.

The results showed that the purpose of internet use by informants dominated to access social networking (Facebook, Friendster, twitter, etc.) as many as 10 informants, then access data and information as much as 7 informants, to play (game) as much as 2 informants, as many as 1 informant.

Cannot be denied that today the internet has become part of the everyday life of students. They recognize that the internet is very beneficial both to support the school, information sharing, and others. The results showed that, as much as the 18 informants stated that the internet greatly helped them in carrying out home work (tasks). Only 2 informants stated that the internet does not help homework (tasks).
6. Results and discussion
The level of literacy of information and communication technology (ICT) in this research is a tool used by someone to communicate and or exchange data and information digitally (online) covering computer and internet. From the data obtained can be concluded that the use of computers already used by the majority of students or more than 60% of students use computers at most four times a week for two to four hours a day at home and at school. Students aim to use majority computer to play games, and process words, process data and process numbers.

Most students are already using and using the internet. On average four times a week they use the internet in the area of free internet and at school for two to four hours a day. The average informer has a personal email and social networking site account. The purpose of using the internet is to access data and information, open accounts social networking sites, download, email, chat, and gaming. The Internet also used informants to look for schoolwork for one to two hours a day. Informants also use the internet to play online games (fun) less than two hours a day.

Based on the analysis of research data above shows that in the development so far, the presence of ICT especially computers and the Internet is no longer a rare and expensive goods. The results of this research also show that students are already entered in the category of ICT literacy in which they as individuals have been able to use ICT devices and mastery of the management has not been fullest support the learning process.

Referring to the theory of Personal Capability Maturity Model (P-CMM), the results of this study indicate that the average ICT literacy of students on computer ICT media can be categorized at level four, where the majority of individual informants have considered technology as an integral part of daily activities and directly or indirectly color the behavior and culture of his life. As for other ICT media literacy, the average internet informant is still at level three, the informant has a standard of mastery and understanding of the information and technology needed, and consistently use the standard as a reference for the organization of daily activities. It is shown that the informant has been utilizing the internet in everyday life.

7. Conclusion
The literacy information and communication technology (ICT) students in Siak Regency is already adequate. The Internet is a medium that is already widely used by informant following the computer. And for the utilization of these two media, respondent majority already on stage four, where the majority of individual informants have considered information and technology as part of daily activities and directly or indirect has been coloring his life and cultural behavior or part of the information society or human cultured information.

The use of internet media, informants have had standards mastery and understanding of the information and technology needs, and consistently apply such standards as a reference for conducting daily activities. This indicates that the informant has been utilizing the internet in daily life but is not used to its full potential in supporting the learning process.

8. Suggestion
Still required the involvement of teachers in an effort to increase ICT skills of students. And students need to be redirected to sites that are positive and carried out socialization about how to take advantage of ICT is good but just simply access the social media and online gaming.

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