ABDIMAS
Jurnal Pengabdian kepada Masyarakat
https://journal.unnes.ac.id/nju/index.php/abdimas/

Improving the Computer Literacy of Teachers and Students of Semarang City Elementary School

Ghanis Putra Widhanarto, Titi Prihatin, Haryono Haryono, Seftia Kusumawardani

Universitas Negeri Semarang, Indonesia

Abstract
Public spaces have been prepared for technology-literate human resources. Technology is synonymous with computerized operations, even all applications can be developed through computer devices. This ability is needed to keep pace with the development of technological innovation around the world. Central Java has great potential in contributing to the increase in computerization understanding scores for school students. The target elementary school is considered appropriate, because from the study of developmental psychology has proven that elementary school students are most appropriately taught early talents and interests. This service aims to improve the ability of teachers and elementary school students in digital literacy to master computers. The service was carried out through a zoom meeting with participants of elementary school teachers and students in the Semarang City area. Workshop activities began with analyzing training needs, determining the type of training, delivering materials, and evaluating through practice by participants. As a result, the participants' skills in using computers have improved from the previous one. The participants' understanding of computer operation, especially the use of automation in Microsoft Word, also increased.

Keywords: technology; computer mastery; students; elementary school

INTRODUCTION

The development of technology in 2022 requires various parties to be literate in operations and in technology development. However, digital literacy skills for elementary school students and teachers are still low. In the health world, school interventions are even being developed through high-tech modifications (Hyman et al., 2020). Digital comic is one example in online learning, as evidence that digital literacy support is needed (Riwanto & Budiarti, 2020). Digital technology is one of the main objectives of learning in schools and universities.

Public spaces have been prepared for human resources who are literate in technology, so it is necessary to improve the quality of human resources from an early age. However, the ability to use computers for elementary school students is still low and needs to be improved. An analysis of digitalization states that digital literacy is a person's ability to access, analyze, evaluate, and communicate information in mass media and create information for various purposes (Fahrurrozi, Hasanah, Dewi, & Ratnaningsih, 2020). Technology is synonymous with computerized operations, even all applications can be developed through computer devices. Various positive perceptions were conveyed by those who used digital learning environments, even learning outcomes also improved when compared to other classes that did not use digital technology (Ríos Félix, Zatarain Cabada, & Barrón Estrada, 2020). This ability is needed to keep pace with the development of technological innovations around the world.

Developmental psychology states that 6-12 years old is a productive age for learning basic numeracy and computation. Reading skills for elementary school-age children begin with the digitization process (Cho, Hwang, & Jang, 2021). Computational thinking patterns also underlie the space for young people, so computers as a means of converting information data must be mastered at a young age (Yuliana et al., 2021). The minister of education has echoed numeracy and computing since 2020, with the aim of equalizing the competencies of all school students in Indonesia. With numeracy and computing activities in schools, all elementary school students in Indonesia are expected to have technically equivalent abilities.

Central Java has great potential in contributing to the improvement of computing comprehension scores for school students. The expansion of the 21st century is highly competitive in terms of employee performance and workspace related to the use of ICT (Gonza, 2010). The educational policy to accelerate computer literacy aims to make the current generation become participants in the computerized society (Rantala, 2008). Targeting elementary school is appropriate, because developmental psychology studies have proven that elementary school students are best taught early talents and interests. Learning in elementary schools is very complex because they determine their own learning outcomes with very detailed steps, such as students' interest and level of reading (Shannon, Styers, Wilkerson, & Peery, 2015). With an augmented reality quiz technology, this can be made a complete process from understanding the material in a book, doing quizzes, to quiz feedback, knowing the final score results, and progress reporting for teachers.

In this article, we're going to take a look at some of the most common problems that occur in the city of Semarang, such as the high number of complaints from parents regarding the online learning process at school. there are even some who claim to reject online learning, but there are also other things that occur due to the lack of computer mastery skills for school students, which creates an unbalanced condition. This condition has the potential to reduce the quality of learning of school students. the problems that occur should have prepared solutions from various parties, but because the Semarang city area is very large, it is not possible to be overcome independently by the Semarang city education office.

The use of automation always involves a smartphone to find out how an energy supply works, for example related to the internet of things at home with an automatic system to turn on the house lights (Baek et al., 2022). As for elementary school students, naturally the habit of using automation in technology can interpret the image and mode of a high socialization and culture (Talib, 2018). This trend is very much found in society, the most obvious example is the computer-based written exam (utbk). If school students are never introduced to the ability to use computers, they will experience difficulties from the start.

Based on the analysis and problems in the management of training in the Semarang City Education Office area, it is necessary to improve the digital literacy skills of computer mastery for elementary school students in the Semarang City Education Office area. Computer mastery skills for elementary school students are operational skills, basic programming creators, and conceptual computing and numeracy for sustainable science management. The purpose of this service is to improve the digital literacy skills of teachers and elementary school students in the Semarang City area in terms of computer mastery.

METHOD

This service was carried out on July 13, 2022. The training conducted is computer-based training, where the person being trained uses a computer-based system to interactively improve their knowledge or skills.

The Computer Based Training (CBT) stage consists of the following steps:

1. Capability profiling. This involves identifying competency needs, prioritizing competency needs, evaluating competency standards, and identifying strengths and problem "areas" that require attention for improvement.
2. Select training program. This stage involves selecting the right form of training to support the achievement of objectives.
3. Produce a personal training plan for each employee. This is where CBT comes in, where the needs of the individual are prioritized. In this stage, a basic framework is developed that is oriented towards individual rankings.
4. Assess the competency. In this stage, every performance development is monitored, continued immediately after the training ends, followed by its application by the participants.

RESULT AND DISCUSSION

This section presents the results with clear descriptions. Results may be supplemented with tables, graphs (images), and/or charts. The discussion section describes the results of data processing, interprets the findings logically, relates to relevant reference sources, and the implications of the findings.

This service begins with the Capability profiling process. In this stage, the competency needs needed to solve the problems in the service area are identified. The needs analysis was carried out through distributing surveys to teachers in the Semarang City area. The process of distributing surveys to several teachers in Semarang City shows that the need for digital literacy competencies is very high, in the following data:

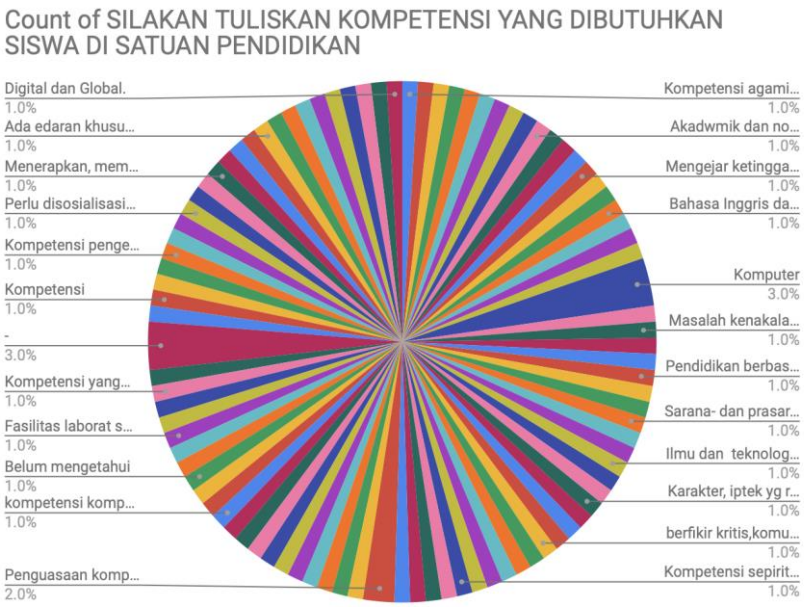

Figure 1 Needs Analysis Survey Results

The results of the needs analysis survey in Figure 1 show that the need for mastery of computers and the need for computers occupy the highest choice of heaven. from this it can be seen that the areas that need to be improved are areas related to digital literacy. Digital literacy during globalization requires various technological facilities and infrastructure, one of which is mastery of computerization for various parties.

After knowing the competencies that must be developed, then determine the appropriate program to support the achievement of goals (Select training program). After knowing that the digital literacy competency of computer mastery is needed by students and teachers in elementary schools, a workshop was designed by involving teachers and students in the Semarang City Education Office area. Other needs include Microsoft Office software. This software will be used for the workshop to improve digital literacy skills for students and teachers, and utilize the various features and advantages of Microsoft Office so that it can be managed optimally to create a digital literacy-themed workshop output.

Workshop activities are carried out online through the zoom application. Participants from various levels of education are put into groups following the room, then each group will get material from the workshop instructor. The material provided is about Microsoft Office and improving skills related to word management and number management. Participants were very enthusiastic about the workshop because individually they were given the opportunity to discuss and ask questions and get exclusive assistance.

The material on automation in Microsoft Word was delivered to the trainees. Microsoft Word management focused on creating a table of contents, table list and also creating a list of images. Making a table of contents is useful for teachers and students who are working on making an observation report or a file that requires identification of contents through a list (Han & Xu, 2020). Materials on making table lists and image lists are also given to improve the competence of managing Microsoft Word applications for teachers and students in the context of making digital writing. This is very interesting for each participant because many participants have not been able to easily create a table list or a list of images.

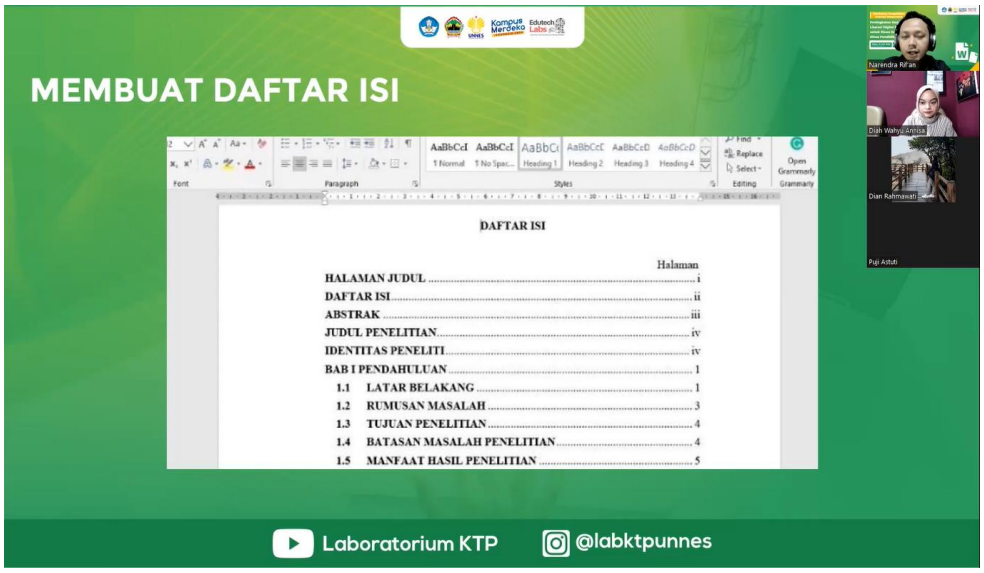

Figure 2 Material Delivery by Resource Persons

Figure 2 shows the process of delivering material by resource persons regarding Microsoft Word management. In the management of Microsoft Word, material is also given about making indexes, material that is very useful for teachers in compiling a learning book or compiling learning module modules. Participants' creativity is allowed to start by making various examples of files that have been made before. The last material is to make automatic translation in a Word-based document. This translate can be used to make the writing that has been typed in Microsoft Word will change into the language that we translate automatically. Materials like this are very useful for managing correspondence and providing knowledge for students and teachers to manage information in various languages.

After providing material to the participants, then continued with monitoring every performance development, followed by its application by the participants.

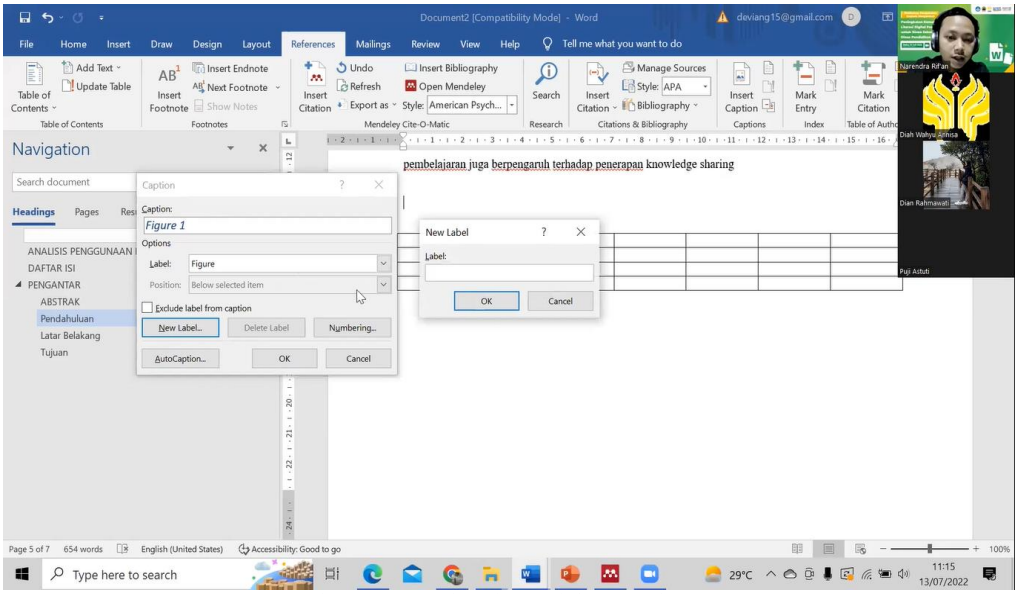

Figure 3 Evaluation with Practicum

The evaluation process through practice by participants is shown in Figure 3. Each material taught by the resource person will be practiced and then presented by each participant who follows. So that assistance in this workshop process takes place systematically from the introduction of content material delivery and practicum evaluation (Lim et al., 2020). Evaluation in this practicum is very important, because it can see the improvement of the abilities of the participants involved (Satria et al., 2023). All participants are called one by one to show the results of the practicum that has been made

so that if there are participants who cannot do it, the instructors will provide solutions directly. This method is very effective for workshops with online patterns, because many participants want independent assistance.

Other practices related to automation with Microsoft Word that include table lists, image lists, indexing, and transcripts are taken in turns, because the purpose of this workshop is to provide individual and complete understanding to achieve the objectives of the workshop. The results of the evaluation through practicum showed that the participants' skills in using computers were quite good. This can be seen from all participants who initially did not have skills in the use of automation, finally managed to apply the material taught in making automation in Microsoft Word.

After the practical process by the participants related to the material presented, then continued with the discussion process guided by the workshop committee. The discussion process was carried out through a direct discussion strategy by submitting questions to the instructor and then being answered directly. All participants submitted discussions with different questions, so that problem solving for what was not understood by each participant could be possible to be resolved by the instructor appropriately.

Evaluation was also conducted on the participants' knowledge of automation in Microsoft Word. The evaluation was carried out by giving quizzes at the beginning and end of the training session, the results of the evaluation are presented in the following graph:

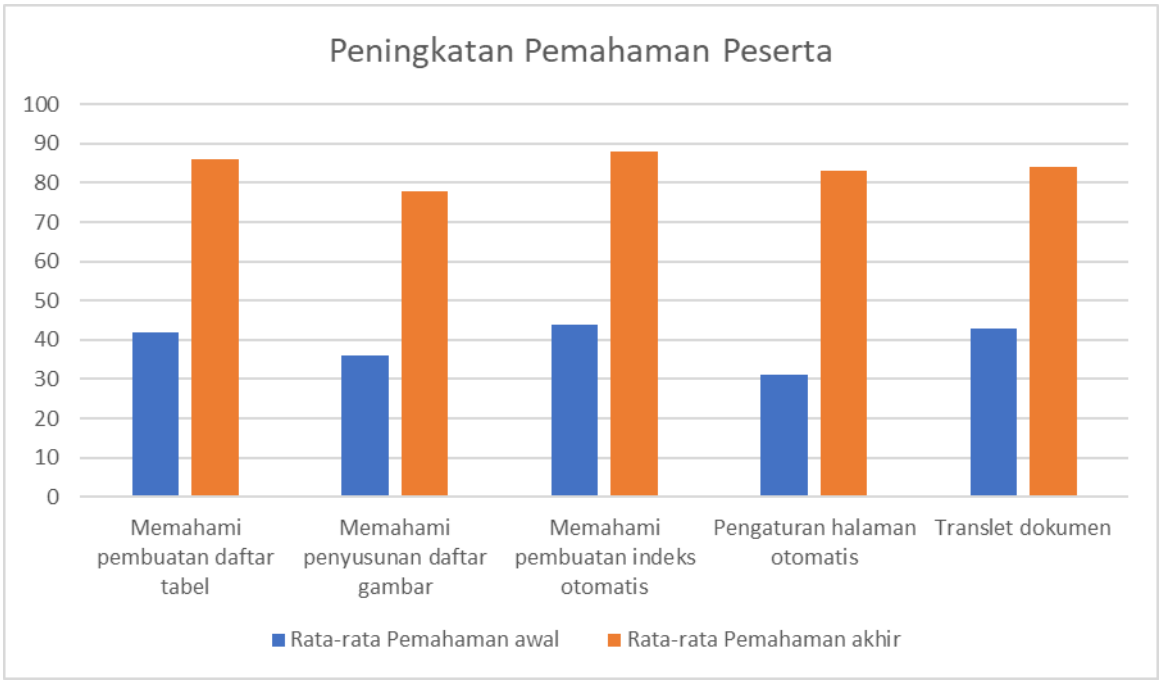

Figure 4. Increased understanding of participants

Figure 4 shows the success of the computer mastery training program for primary school teachers and students. From the figure, it is known that the participants' understanding of automation in Microsoft Word application is measured based on several aspects. The aspect of understanding has increased from the initial score of 42 to 86. Likewise, the aspect of understanding the preparation of the list of images automatically also increased from the initial average score of 36 to 78. Not much different, the participants' understanding of automatic index creation also experienced a significant increase from the average score of 44 to 88. The understanding of automatic page setting and document transel also increased from the initial average score of 31 to 83, and the understanding of document transel increased from an average score of 43 to 84. Overall, the participants' understanding of computer mastery in making automation in Microsoft Word has increased significantly.

CONCLUSION

The workshop on improving digital literacy skills for elementary school students in Semarang City Education Office has been carried out with a workshop structure designed in accordance with the needs. The workshop participants consisted of teachers and students in the Semarang City Education

Office area. All participants used their own computers and practiced what was delivered in the knowledge transfer by the workshop instructors. All participants participated in an open evaluation and asked questions to get direct guidance from the instructors. Assistance for workshop participants who have not mastered the overall competency of improving digital literacy skills, a group was created to manage questions and problems that occur when using the applications taught at the workshop. The evaluation results showed that participants who initially did not understand the automation in Microsoft Word became skilled in applying the automation. On the other hand, participants' understanding of automation in Microsoft Word also increased significantly.

REFERENCE

Baek, J. Y., Na, S. H., Lee, H., Jung, H. W., Lee, E., Jo, M. W., … Jang, I. Y. (2022). Implementation of an integrated home internet of things system for vulnerable older adults using a frailty-centered approach. *Scientific Reports*, 12(1), 1–10. https://doi.org/10.1038/s41598-022-05963-9

Cho, B. Y., Hwang, H. J., & Jang, B. G. (2021). Predicting fourth grade digital reading comprehension: A secondary data analysis of (e)PIRLS 2016. *International Journal of Educational Research*, 105(November 2020), 101696. https://doi.org/10.1016/j.ijer.2020.101696

Fahrurrozi, Hasanah, U., Dewi, R. S., & Ratnaningsih, S. (2020). Effectiveness of Digital Teaching Materials Based on Google Classroom to Improve Digital Literacy Competencies during the COVID-19 Pandemic Period. *Proceedings - 2020 6th International Conference on Education and Technology*, ICET 2020, 59–63. https://doi.org/10.1109/ICET51153.2020.9276590

Gonza, N. (2010). Helping students become literate in a digital , networking-based society : A literature review and discussion. 124–136. https://doi.org/10.1016/j.iilr.2010.04.012

Han, Y., & Xu, Y. (2020). The development of student feedback literacy: the influences of teacher feedback on peer feedback. *Assessment and Evaluation in Higher Education*, 45(5), 680–696. https://doi.org/10.1080/02602938.2019.1689545

Hyman, A., Stewart, K., Jamin, A. M., Novak Lauscher, H., Stacy, E., Kasten, G., & Ho, K. (2020). Testing a school-based program to promote digital health literacy and healthy lifestyle behaviours in intermediate elementary students: The Learning for Life program. *Preventive Medicine Reports*, 19, 101149. https://doi.org/10.1016/j.pmedr.2020.101149

Lim, C. P., Ra, S., Chin, B., & Wang, T. (2020). Information and communication technologies (ICT) for access to quality education in the global south: A case study of Sri Lanka. *Education and Information Technologies*, 25(4), 2447–2462. https://doi.org/10.1007/s10639-019-10069-3

Rantala, L. (2008). CHAPTER 6 Digital literacies as school practices. In Practising Information Literacy: Bringing Theories of Learning, Practice and Information Literacy Together. https://doi.org/10.1016/B978-1-876938-79-6.50006-6

Ríos Félix, J. M., Zatarain Cabada, R., & Barrón Estrada, M. L. (2020). Teaching computational thinking in Mexico: A case study in a public elementary school. *Education and Information Technologies*, 25(6), 5087–5101. https://doi.org/10.1007/s10639-020-10213-4

Riwanto, M. A., & Budiarti, W. N. (2020). Development of digital science comics for elementary school as a support for digital literacy in online learning. *ACM International Conference Proceeding Series*, 6–9. https://doi.org/10.1145/3452144.3452221

Satria, A., Widjanarko, D., & Anis, S. (2023). Developing Adobe Flash Media with Android-Based to Improve Students ' Learning Outcome in Anti -Lock Brake System. *Journal of Vocational Career Education*, 8(1), 1–8.

Shannon, L. C., Styers, M. K., Wilkerson, S. B., & Peery, E. (2015). Computer-Assisted Learning in Elementary Reading: A Randomized Control Trial. *Computers in the Schools*, 32(1), 20–34. https://doi.org/10.1080/07380569.2014.969159

Talib, S. (2018). Social media pedagogy: Applying an interdisciplinary approach to teach multimodal critical digital literacy. *E-Learning and Digital Media*, 15(2), 55–66. https://doi.org/10.1177/2042753018756904

Yuliana, I., Hermawan, H. D., Prayitno, H. J., Ratih, K., Adhantoro, M. S., Hidayati, H., & Ibrahim, M. H. (2021). Computational Thinking Lesson in Improving Digital Literacy for Rural Area Children via CS Unplugged. *Journal of Physics: Conference Series*, 1720(1). https://doi.org/10.1088/1742-6596/1720/1/012009