Secondary School Teachers' Development In TPACK, ICT Literacy, And High-Level Thinking: Community Service In SMK N 3 Purwokerto, Central Java

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Abstract.

Students can gain a better grasp of subjects through the use of ICT literacy. Students can learn a wide range of facts and concepts in a balanced and effective way if they are literate in the use of information and communication technologies. Research has shown that there is a strong correlation between PLT and ICT Literacy. The correlation between TPACK and ICT literacy is strong as well. All of this points to the importance of TPACK, PLT, and ICT literacy as cornerstones of effective classroom instruction. The goals of this community service project are threefold: first, to increase teachers' TPACK competency, ICT literacy, and PLT understanding and knowledge; second, to develop TPACK competency programs; and third, to develop TPACK competency, ICT literacy, and PLT teaching materials. The author argues that the training implementation method is the most justified of the three prerequisites that any school must meet. These prerequisites include: 1) Setting up a system for online instruction. Naturally, their e-learning platform can cleanly display TPACK competencies, ICT literacy, and PLT; 2) Creating activities for innovation workshops; 3) Engaging students in learning TPACK competences, ICT literacy, and PLT through student-led activities.

Keywords: *Community service, high level thinking, ICT literacy and TPACK..*

I. INTRODUCTION

Information and communication technology (ICT) literacy is an essential ability in modern classrooms. Literacy in information and communication technologies encompasses a wide range of skills, including those about computers, media, communication, visuals, and technology [1]. Young people who are literate in information and communication technologies are better able to take advantage of digital information sources and are more equipped to deal with the many problems that modern technology presents [2]. Improving one's critical thinking abilities while utilizing technology is one of the many benefits of acquiring ICT literacy [3]. One sign of educational success is the ability to acquire and effectively use information and communication technology [4].Having the ability to effectively use ICT in the classroom is crucial. Students who are literate in the use of information and communication technologies in the classroom are better able to collaborate, communicate, solve problems, and access a variety of engaging reading materials [5]. Being literate in ICT can aid pupils in comprehending complex ideas [6]. Students can learn a wide range of facts and concepts in a balanced and effective way if they are literate in the use of information and communication technologies. Also, being literate in ICT helps students develop habits of thought that will serve them well when they seek information that is both accurate and useful.Students also need to have their current ICT literacy abilities enhanced and augmented with other knowledge, specifically TPACK.

In light of this, ICT literacy and TPACK are the two most important components of technology-assisted learning [7]. A component of learning in the 4.0 Industrial Revolution period is TPACK, which involves establishing ICT literacy in conceptual knowledge in the classroom. Students' TPACK is developed by modern technology-based learning, which is itself the product of a process of continuous learning. At its core, TPACK is comprised of three areas of expertise: conceptual understanding, technical know-how, and

pedagogical acumen [8]. Researchers in the field of education, particularly those concerned with student learning in the classroom, should pay more attention to the fact that pupils still possess low levels of TPACK even though technology-enhanced learning is already underway.Furthermore, students in the age of technology and the fourth industrial revolution (RI4.0) need to be able to think critically and creatively to succeed academically [9]. Improving knowledge and meeting the necessities of modern living requires mastery of this way of thinking. Learning at a high level requires pupils to be able to think critically and creatively. Students demonstrate high-level learning when they can creatively build upon what they have learned or when they can analyze and evaluate information to the point where they can evaluate the information they have learned.

This lines up with what is said in [10] about how high-level thinking (PLT) is a process where students are asked to think critically and manipulate information and ideas in specific ways to gain new insights and consequences.According to the author's study, the four cornerstones of effective classroom instruction are academic achievement, technology proficiency, content knowledge, and digital literacy [11], [12]. Using ICT literacy, TPACK, and PLT skills consistently is one approach to enhancing students' abilities in the classroom. This fits in with the overall goal of improving the educational system through the implementation of innovative strategies that yield outstanding results.In other words, in this technological age, students' academic achievement may be measured by three things: their proficiency with information and communication technology (ICT), their knowledge of technology (TPACK), and their ability to learn at a high level. Student behaviors and the ability to learn with technology are both influenced by their level of ICT literacy. Because of its function as a tool to speed and facilitate the process of understanding concepts during learning and to give skills in using technology, TPACK also helps generate conducive learning environments [13]. Also, when students learn at a high level, it means they can apply what they've learned in class to real-world challenges and make judgments by drawing connections, manipulating, and transforming their existing knowledge and experience [14].

Hence, the author of this IPTEKS program for the community hopes to introduce and revitalize the school, particularly in regard to the effectiveness of classroom instruction in the technological age, with a focus on the three primary tenets of PLT, TPACK, and ICT literacy. Teachers should be chosen for training because they play a crucial role in creating and delivering educational experiences. The hope that instructors' pedagogical shifts will improve student achievement is another factor that guides their selection as collaboration partners. So that educators can zero in on helping students develop these three skills for academic achievement. In addition, when instructors work to increase their learning and their students' ICT literacy, TPACK, and PLT, they can better focus on their students' academic performance.

II. METHODS

The following are the steps involved in training and practicing the implementation of TPACK competencies, ICT literacy, and PLT. The first, *presenting*, in which the presenter lays out the framework, procedures, and strategies for enhancing competency in TPACK, ICT literacy, and PLT. Additionally, the presentation will proceed with specific instances of different initiatives executed in other educational institutions. In the second stage, known as "peer teaching," TPACK, ICT literacy, and PLT competency enhancement program participants work together to address current and future needs. Keeping an eye on the Merdeka Belajar Curriculum Implementation sessions or actual classes. The purpose of this is to measure the extent to which the deployment of Community service learning has improved teachers' competence in areas such as TPACK, ICT literacy, and PLT. The fourth is *the assessment* of the instructor's work throughout the community service learning process. The last step is to *evaluate* to conclude the training's effectiveness. Several factors should be taken into account in this training concerning the aforementioned implementation stages in Fig. 1 below.

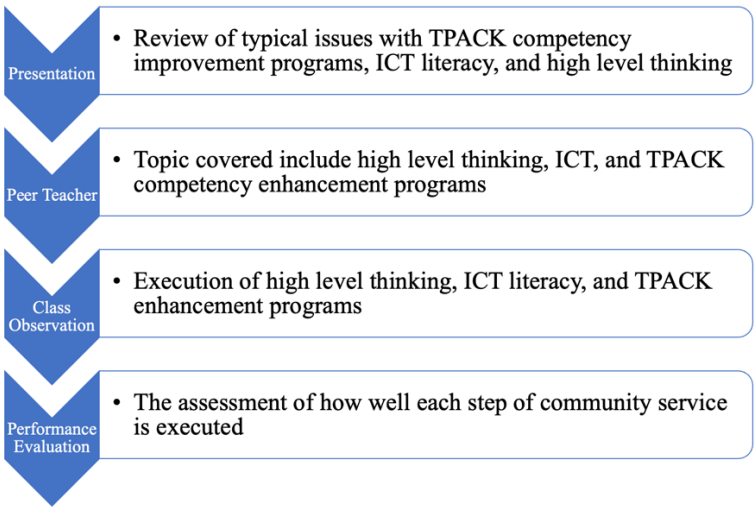

Fig 1. The Step of Community Service Learning

III. RESULT AND DISCUSSION

Online learning environment

Establishing an online learning platform is the initial order of business when it comes to utilizing technology for education. Students' TPACK and proficiency with ICT are enhanced by this process. Teachers will find it much easier to assess and discuss the efficacy of TPACK and ICT literacy using e-learning-based learning strategies.

Workshop on Innovation

Accurate innovation workshops for faculty members should be developed by educational institutions. This is the seed from which the brilliant minds of tomorrow will sow their ideas. The influence on teachers will be beneficial, and the effect on students will be spectacular when they master TPACK, ICT literacy, and PLT competencies. The workshop on innovation instance is impressed on Fig 2.

Fig 2. The Workshop of Implementation Study

How Involved Are Students?

Opportunities for students to enhance their quality, particularly in the areas of TPACK, ICT literacy, and PLT, should be provided by educational institutions. Schools should prioritize student participation since today's students need to see firsthand the tools they'll need to succeed in the modern technological environment, as well as the processes by which they acquire, use, and use these tools. Participating in this exercise will help educators and students think more broadly about the skills they'll need to succeed in the modern technological world. They include PLT, ICT literacy, and TPACK competencies, among others.

Getting Teachers Ready

Educators are still not adequately prepared to use technology in the classroom. Furthermore, the suggested course of action is to set up an online education system. Online learning platforms are one kind of technology-based learning that teachers are prepared to implement. That both students and educators recognize the value of ICT literacy in online education is encouraging. Some of the activities that get teachers ready are shown on Fig. 3.

Fig 3. Teachers Ready Activity

Work Together With Other Parties

Working together with business associates on project tasks is still lacking in efficiency. Developing a partnership to conduct innovation workshops. Having innovation workshops at both colleges and universities makes collaboration much easier and more efficient. A comprehensive understanding of TPACK competencies, ICT literacy, and PLT is the goal of this activity. The innovation workshops that are conducted can take the shape of interactive seminars or more traditional forms of counseling. The goal is for students to have TPACK competencies, ICT literacy, and PLT, and for classroom learning to go off without a hitch. Furthermore, the outcomes provided represent the fruition of collaboration within the domain of innovation seminars. Teachers are becoming more proficient in PLT, TPACK, and ICT literacy.

Satisfactorily Students engagement

Introducing exercises that draw in pupils. Getting ready to work together and raise the bar for student-teacher relationships, with a focus on TPACK competencies, ICT literacy, and PLT. Consequently, PLT, ICT literacy, and TPACK competencies—among others—are developed to meet students' needs. For students to consistently exhibit the traits of an excellent student, the implementation has a direct and beneficial effect on them.In light of the current trend towards promoting the digital age, this community service project aims to enhance teachers' abilities to impart knowledge in a way that is both effective and up-to-date. As a teacher, need to have empathy and understanding for the challenges that your pupils face on a daily basis. Academic issues and problems about each student's psyche make up the two main categories into which these challenges fall [15]. Here, the goal of the training is to help students with academic issues, such as how to recognize and understand online learning and how to apply learning methodologies to enhance student's ability to think critically [16]. Consequently, the current challenge proposes a solution that focuses on how a teacher might develop a learning approach to enhance students' capacity for higher-level thinking. Implementation of the problem-solving strategy, which involved reaching out to instructors from SMK N 3 Purwokerto, went off without a hitch. Eighty percent of the invited 81 people showed up for this community service, so it went off without a hitch.

This is since practically all participants in this community service were present at the Wednesday teacher meeting since it was held in the teacher's room and was accessible to the instructors. The adoption of

this community activity was met with great enthusiasm by the teachers. This is because meeting the requirements of the students involves developing learning strategies that can enhance their critical thinking skills, which can then be tackled collaboratively.First, there's the presentation, which entails outlining the TPACK, ICT literacy, and PLT competency enhancement program's premise, methodology, tactics, and preparatory activities. Additionally, the presentation will proceed with specific instances of different initiatives executed in other educational institutions. Second, at this level, participants engage in peer instruction or discussion to address both current and future needs to advance the TPACK, ICT literacy, and PLT competency improvement program. Third, watching a class or any part of the Merdeka Belajar Curriculum Implementation program's preparations. The purpose of this is to measure the extent to which the deployment of Community service learning has improved teachers' competence in areas such as TPACK, ICT literacy, and PLT. Last, Assessment of the instructor's work throughout the Community service learning process. Finally, to conclude this training's implementation, an evaluation is carried out.

IV. CONCLUSION

It is feasible to achieve this goal by providing teachers at SMK N 3 Purwokerto with PLT, ICT literacy, and TPACK competencies and then implementing this training at the school as a means to improve and innovate technology-based learning. In this classroom, you will find an instructor. The results showed that 1) teachers' desire to learn how to apply PLT, ICT literacy, and TPACK competencies in the classroom, 2) teachers' familiarity with PLT, ICT literacy, and TPACK competencies in Indonesia and its practical applications, and 3) teachers' ability to improve their strategy implementation for PLT, ICT literacy, and TPACK competencies programs at SMK N 3 Purwokerto were all noteworthy.

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