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## ESTABLISHMENT OF PROFESSIONAL TEACHERS: STUDENTS' PERCEPTIONS ON THE IMPLEMENTATION OF TPACK ON TEACHER PROFESSIONAL PROGRAM DURING COVID-19 PANDEMIC

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### ABSTRAC

Teachers play an important role in determining the success of education. Therefore, improving the quality of education needs to be continuously improved. One of the efforts to improve the quality of teachers is through the Teacher Profession Program (Program Profesi guru/PPG). The implementation of PPG 2020 is carried out using a technology, pedagogy, and content knowledge (TPACK) approach. This approach was chosen not solely because of the pandemic conditions and the consideration that good learning not only requires a good understanding of the content of the material, but also has to consider the pedagogical and technological aspects and characteristics of current learners which are the digital natives. This research was conducted with a qualitative approach with the type of analytical descriptive research. The research data was obtained from the results of filling out questionnaires given to PPG students in 2020. Questionnaires were used to explore information about student responses, perceptions, and expectations regarding the implementation of PPG. The participants of this research were 171 PPG students who spread across several fields of study. The results showed that the TPACK approach had been implemented very well with an average student perception score of 70.8%. In the questionnaire given, none of the students stated that the PPG implementation was not good or very, very bad. Nevertheless, students gave suggestions that the implementation of PPG with the TPACK approach in the future can be carried out in a more adequate time so that students can more freely explore the material.

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## INTRODUCTION

Teacher professional development has become closely linked to many school improvement efforts around the world (Borko, et al., 2010) because the most important and most decisive thing to the success of education is the teacher (Fauzan & Bahrissalim, 2017). In fact, Guskey (2000) mentions that there has never been before in the history of education a greater interest than the professional development of educators. Feiman-Nemser (2001) mentions that if we want schools to offer stronger learning opportunities for students, we must offer stronger learning opportunities for teachers.

Most higher education institutions are committed to supporting the continuing education of their graduates once they start their careers, whether through postgraduate study, non-credit courses, workshops, or other informal learning experiences (Owston, et al., 2008). Educational campuses have long seen the continued professional development of teachers as part of their mandate. In fact, some of these institutions in recent years have offered online learning systems and special projects to partially fulfill this mandate (Dede, 2006).

Given the importance of the teacher's role in the success of education, efforts to improve teacher professionalism are continuously carried out, both through certification programs and other training programs. Moreover, the existence of professional teachers is one of the requirements that must be met to improve the quality of education to compete with other developed countries (Desilawati & Amrizal, 2014). In the Indonesian context, the development of teacher professionalism is manifested in the implementation of the Teacher Professional Program (*Program Profesi Guru/PPG*).

In the Law of the Republic of Indonesia number 14 of 2005 concerning Teachers and Lecturers, it is stated that professional teachers must have four competencies, which include pedagogic competence, personality competence, social competence, and professional competence. The four competencies are interrelated and obtained through professional education (Prihono, 2014). In addition to these four competencies, professional teachers must also have six characteristics, namely (1) enjoy their profession, (2) master their profession according to their field of science, (3) can communicate well, (4) adhere to a code of ethics, (5) has an entrepreneurial spirit, (6) has self-motivation, (7) wants to

continue to grow, (8) has capabilities, (9) has authority, and (10) is innovative (Rijal, 2018). In relation to PPG, PPG is one way that teachers can have these competencies.

At the beginning of its implementation, PPG was carried out using offline mode. However, in 2009—2010, Sari (2012) piloted an online learning community (OLC) as a form of learning innovation as well as to increase collaboration between PPG participants. Sari's research results show that OLC is still a new concept for teachers in Indonesia, but OLC offers new opportunities to be applied in learning which can also be used to minimize human and financial resource constraints and limitations due to Indonesia's diverse geographical area. As a form of improvement in the implementation of PPG, in 2017, PPG has begun to be implemented using a blended learning system using SPADA (Kurniawan, et al., 2020). Research results of Kurniawan, et al. shows that SPADA—as a platform for blended learning—is an effective platform in improving the pedagogical abilities of PPG participants. The findings of Kurniawan et al. This is in line with the findings of Owston, et al. (2008) which states that the use of a blended learning system to develop teacher professionalism has a positive impact because learning activities can be carried out anytime and anywhere.

The developments in this learning mode show that the implementation of PPG continues to be improved from time to time to achieve learning objectives in an effective way. To be sure, these developments were carried out based on the results of the evaluation of real conditions in the field because several previous studies on teacher professional development stated that professional development must be based on real conditions, needs, and expectations in the field (Rahman, et al., 2015; Boud & Hager, 2012). With continuous evaluation from time to time, it is hoped that the implementation of PPG from year to year is getting better so that professional teachers can be produced.

In 2020, the Covid-19 pandemic swept across the world. This incident had an impact on various lines of life, including the world of education. Universities are also institutions that are directly affected by the Covid-19 pandemic. Due to the Covid-19 pandemic, the government through the circular letter of the Ministry of Education and Culture number: 36962/MPK.A/HK/2020 concerning Online Learning and Working from Home in the Context of Preventing the Spread of Covid-19 has decided to study from home. This government decision is carried out by all levels of education, including universities so that

lecture activities are no longer carried out on campus face-to-face, but are carried out at the homes of each student and lecturer. The learning is carried out online,

The government's "sudden" decision to move the learning process from campus to home was also implemented in PPG learning. The implementation of PPG learning with the online mode is suspected to have received various perceptions from the participants. Research on perceptions of the implementation of PPG is important to study because the perspectives and expectations of teachers—as PPG students—is an important component that cannot be ignored when we consider how to provide effective and high-quality professional development (Kong & Wong, 2017). The teacher's perspective serves as a resource for discovering what are the challenges in the classroom today and as an effort to determine the strategies that are expected to be implemented successfully in teaching the subject throughout the school (Sentance & Csizmadia, 2017).

Due to the government's policy to study from home, the implementation of PPG in 2020 is also fully implemented online. More specifically, the implementation of PPG in 2020 is carried out using a technology, pedagogy, and content knowledge (TPACK) approach. This approach was chosen not only because of the pandemic conditions that require online learning to be carried out, but also the consideration that good learning does not only require a good understanding of the material content. Good learning must also consider the pedagogical aspects and characteristics of students, especially current students who are digital natives (Prensky, 2001). Therefore, the implementation of PPG is carried out by building student knowledge in integrating technology in learning, known as TPACK (Koehler & Mishra, 2009).

TPACK is a framework that is carried out by integrating technology into learning (Chai, et al., 2013). In line with Chai et al., Suyamto, et al. (2020) states that TPACK is the integration of knowledge and skills into technology in a learning context. Thus, it can be concluded that TPACK is the integration of knowledge content and pedagogical skills into technology so that it can be used as a support for the learning process.

Based on the considerations as stated above, this research is important to carry out as well as to evaluate the application of the TPACK approach in PPG learning which is carried out in online mode in 2020 considering that in previous times, the implementation of PPG was never done completely online. The results of this study can be utilized by policy makers

to adopt professional development standards to guide the design, evaluation, and funding of professional learning provided to educators. These standards may reflect effective professional learning features that can be used as standards to implement (Darling-Hammond, et al., 2017).

Based on the background that has been stated, the purpose of this study is to describe students' perceptions of the application of the TPACK approach in the implementation of PPG in 2020.

## **RESEARCH SIGNIFICANT**

The government's policy that requires all learning activities to be carried out online during the Covid-19 pandemic has made all education managers innovate in carrying out learning activities, including the PPG implementing campus in 2020. PPG lectures were previously carried out offline (and blended), in 2020 "forced" must be carried out completely online, both during lectures and during field experience practices.

The change in learning modes from offline learning to online learning certainly brings various perceptions. Moreover, 2020 is the first year of fully implementing online learning. For this reason, it is interesting to study more deeply about student perceptions of the implementation of online PPG in 2020.

Theoretically, the results of this study can be used to add to the treasures of insight about the implementation of online learning to improve teacher professionalism. Practically speaking, the results of this study can provide information about the perceptions of students and implementers of online-based PPG learning in 2020. Thus, the results of this study can be used as a reference for stakeholders to evaluate and improve the implementation of PPG in the future.

## **METHOD**

This research approach is qualitative research. This approach was chosen because of its suitability with the characteristics of the research which includes four considerations. First, this research data was taken from a natural setting, namely student perceptions of the implementation of online PPG. Second, in data collection, the researcher acted as an

instrument. Third, the data of this research is in the form of verbal data, not numbers. Fourth, this research is descriptive, and the data were analyzed inductively.

Based on the research approach that has been proposed, this type of research is descriptive analytical research. The researcher describes the results of the research conducted in detail based on the data obtained about the responses, perceptions, and expectations of students and implementers for the implementation of online PPG learning.

The participants of this research consisted of PPG students in 2020. To obtain in-depth data, the participants of this study were limited in terms of the number and fields of study participated in PPG activities. Restrictions on the number of participants and the number of fields of study are based on their representation in photographing the implementation of PPG in.

The participants of this research were 171 PPG participants in 2020. The hundred and seventy-one participants came from 10 different fields of study who took part in PPG from 34 provinces in Indonesia and participated in PPG at Universitas Negeri Malang, Universitas Pendidikan Indonesia, and Universitas Muhammadiyah Malang. All participants have taken the undergraduate program. In terms of demographics, the participants of this study came from urban, suburban, and rural areas.

This research data is in the form of the results of filling out questionnaires from students containing students' perceptions of the implementation of online PPG. The implementation of PPG is PPG which is carried out "out of the ordinary" because the activities are carried out completely online. This data was obtained from a questionnaire distributed to 171 PPG students.

Based on the form of data and data sources that have been stated, the research instrument is several questions set forth in the questionnaire. The questions compiled in the questionnaire are questions to explore student responses, perceptions, and expectations about the implementation of PPG 2020 which is carried out online. The questionnaire items consist of questions about learning materials, use of LMS for learning, quality of instructors/lecturers, quality of technical managers/helpdesk and technical aspects. The data collection procedure was carried out by distributing questionnaires to PPG students in 2020. To facilitate the performance of researchers, questionnaires were distributed through *google.form*.

The data of this study were analyzed qualitatively. Data analysis was carried out in four stages, namely (1) data collection, (2) data reduction, (3) data presentation, and (4) inference or verification. The first step is data collection. In qualitative research, data collection is part of data analysis. This means that data analysis activities can be carried out simultaneously with data collection. Data collection was carried out through distributing questionnaires to PPG students in 2020. Data reduction is done after the data is collected. This stage consists of two sub-stages, namely (a) data identification, and (b) data classification. Data identification is in the form of selecting and sorting data from the results of filling out questionnaires from students, lecturers, and managers based on the field of study. Furthermore, the data that has been identified is classified based on the research focus. The presentation of the data consists of two activities, namely (a) coding, and (b) making a matrix. Coding is the activity of giving a special mark to the data presented. In relation to this research, data codification refers to coding based on the type of data and research focus. The codified data is presented in the form of a selected matrix or chart.

## RESULT

PPG is implemented entirely online through a learning management system (LMS) developed by the Directorate of Learning and Student Affairs, Ministry of Education and Culture. To find out students' perceptions of the implementation of PPG in 2020, we have distributed questionnaires to 171 participants from three PPG universities. The questionnaire consists of 10 questions regarding the application of the TPACK approach in the implementation of PPG which is carried out using LMS. Filling out the questionnaire in the form of five variations of answers with a score of 1 (SD=strongly disagree), 2 (DA=disagree), 3 (A=agree), 4 (SA=strongly agree), and 5 (VSA=very strongly agree). The results of filling out the questionnaire are illustrated in Table 1 below.

**TABLE 1 Student Responses to the Implementation of Online PPG Based on TPACK**

No	Question	Response Results				
		SD	DA	A	SA	VSA
1	The subject matter presented in the LMS is in accordance with the need to become a professional teacher.	0%	0%	1.8%	22.1%	76.1%

2	The subject matter presented in the LMS fulfills the need to become a professional teacher.	0%	0%	1.2%	28.2%	70.6%
3	The pedagogical material presented in the LMS is in accordance with the need to become a professional teacher.	0%	0%	1.2%	18.4%	80.4%
4	The pedagogical material presented in the LMS fulfills the need to become a professional teacher.	0%	0%	2.5%	20.2%	77.3%
5	The technology knowledge material presented in the LMS is in accordance with the need to become a professional teacher.	0%	0%	1.2%	29.4%	69.3%
6	The technology knowledge material presented in the LMS is sufficient to become a professional teacher.	0%	0%	1.8%	31.3%	66.9%
7	The subject matter is presented accurately and precisely.	0%	0%	4.9%	30.7%	64.4%
8	Pedagogical materials are presented accurately and precisely.	0%	0%	4.3%	24.5%	71.2%
9	Technology knowledge material is presented accurately and precisely.	0%	0%	4.3%	32.3%	63.4%
10	The evaluation given can measure the ability of students to become professional teachers.	0%	0%	4.3%	27.8%	67.9%
<b>Average</b>		<b>0%</b>	<b>0%</b>	<b>2.7%</b>	<b>26.5%</b>	<b>70.8%</b>

Based on Table 1, of the 171 students who filled out the questionnaire, 70.8% of them stated that the TPACK approach in PPG learning in 2020 was very, very appropriate, 26.5% said it was very appropriate, and 2.7% said it was correct. Of the 171 students who filled out the questionnaire, none stated that the TPACK approach was inappropriate or very inappropriate. This proves that the TPACK approach has been implemented well so that it gets a positive response from students.

In addition to providing closed questions with five variations of answers, we also provide open questions to explore students' perceptions more deeply. We give these open questions so that we can find out the impressions and expectations of students on the application of the TPACK approach in PPG learning in 2020. The open questions we give to students consist of three questions to gather information about (a) students' opinions about the subject matter, pedagogy, and technological knowledge presented in the LMS, (b) what kind of technological knowledge students need to become professional teachers, and (c) the

need to use technology in learning. The results of filling out the questionnaire on the three questions are presented as follows.

***Give your opinion on the subject matter, pedagogy and technology knowledge presented in LMS!***

- a. *Overall, the material in the field of study, pedagogy, and technological knowledge presented in the LMS is good and can open and add insight to prepare teachers to become professional teachers.*
- b. *The material is very good and very clear. The steps for presenting the material are very good so that even though they are independent learning, students can understand through the instructions from the videos or assignments given.*
- c. *In our opinion, the material in the field of study, pedagogy, and knowledge of technology presented in the LMS is good, but more emphasis is needed on material that is in accordance with the syllabus and school curriculum so that teachers are truly more professional in teaching, delivering, and providing direction to students to achieve maximum mastery in the subject.*
- d. *The material in the field of study, pedagogy, and technological knowledge presented in the LMS is appropriate, but due to the short implementation time, it becomes an obstacle for me to explore the material.*
- e. *In online PPG material, the presentation of the material is very coherent and orderly. The material is very supportive of becoming a professional teacher so that PPG participants can complete assignments well even though the time provided is very limited.*

***Do you feel the need to use technology in the learning that you are going to do? Give your explanation!***

- a. *It is very necessary because technology provides convenience and assists teachers in delivering lessons to students especially during the current pandemic, technology plays an important role in the process starting from delivering lessons and collecting assignments and the results of their evaluations.*
- b. *In my opinion, it is very necessary to use technology in the learning process because it will make it easier and motivate students in learning and will find new knowledge.*
- c. *Yes, it is very necessary to support learning and adapt to learning objectives towards 4C technology and competencies.*
- d. *Yes. In today's life technology is increasingly sophisticated and is a necessity so it needs to be used according to our needs such as in learning to make it easier for us to deliver learning materials while teaching students to use the technology for their future.*
- e. *It is necessary. Because the TPACK approach to learning is one way to prepare students for the era of the industrial revolution 4.0.*

***What kind of technological knowledge do you need to become a professional teacher?***

- a. *Understanding of the use of applications that support learning, being able to apply various technologies such as interactive powerpoint, making learning videos which will support the learning process.*

- b. *Knowledge of technology to support the teaching and learning process, technology to present material that is more fun and help to develop students' thinking patterns to be more advanced and have extensive knowledge with the help of existing technology.*
- c. *Making learning media through powerpoint, making practice questions through Google forms, games in the form of practice questions in the Quizzizz application.*
- d. *Understand the procedures for using technology that can support learning activities, such as using applications on smartphones or Android to compose questions online, then making technology-based teaching media that can attract students' interest, for example making animations and visualizing learning materials, and so on.*
- e. *Technology that is easy, friendly, safe from negative content and according to the needs of teachers and students.*

Based on the results of filling out the open answers above, three research findings were obtained. *First*, students feel that the material presented to students is complete, coherent, and complete so that they can add insight to students about the content of the material in their respective fields of study along with pedagogical aspects or how to teach them. The presentation of material that contains steps is also equipped with videos to make it easier for students to understand the instructions given. Thus, the material provided can support the realization of professional teachers as the purpose of implementing PPG. However, the time allocation given to students to study the content of the material is quite short so that not all students can explore the material well. Besides that,

*Second*, students feel the need to use technology in learning. Among the reasons for the importance of using technology in learning according to students are (a) helping to facilitate the implementation of learning during a pandemic, (b) increasing students' motivation in gaining new knowledge, (c) increasing students' 4Cs competence (creative thinking, communication, collaboration, and creativity), (d) prepare students for the era of the industrial revolution 4.0. Thus, the use of technology in learning is not only beneficial for PPG participants who will/is becoming teachers, but also for the future of the students being taught.

*Third*, there are several forms of application of technology that are considered important for students to master to become professional teachers. The technology in question is the operation of gadgets or laptops, the manufacture of learning media based on communication and information technology (eg simple powerpoints, interactive powerpoints, animations, or simple learning videos) to visualize learning materials, and making learning evaluation tools using information and communication technology (eg.

Google Forms and Quizzizz). In addition, students also hope that they can master technology for the benefit of learning in the form of technology that is child-friendly and safe from negative content. The use of technology in learning is expected to attract students' interest so that their learning motivation will increase.

## **DISCUSSION**

Improving the quality of education is an urgent need and cannot be postponed any longer. One of the ways to improve the quality of education is to improve the quality of teachers because teachers have a central role in the learning process in schools. That is why educational institutions abroad also feel that improving the quality of education through teacher professional development needs to be done immediately (Owston, et al., 2008).

Teachers are motivators and facilitators for students so that students can learn effectively and efficiently. In carrying out their role as motivators and facilitators, teachers are required to be professional individuals who have the ability to describe material content, methods, media, and classroom-based assessments (Fauzan & Bahrissalim, 2017), and have a comprehensive insight into the field of study being taught (Rijal, 2018).

To improve the quality of teachers through PPG, the government has announced the use of the TPACK approach in PPG learning in 2020. This is based on the findings The World Bank which has confirmed the weakness of Indonesian teacher competence, especially in the aspect of content knowledge (Chang et al., 2014). On the other hand, good content mastery is also not enough if it is not supported by adequate pedagogical knowledge and technological knowledge. Adequate knowledge content will be well received if the teacher master's pedagogical knowledge well too. In addition, the era of the COVID-19 pandemic also requires teachers to be able to master technology to convey knowledge content because learning is done entirely online.

Based on the research findings as stated in the previous section, the knowledge content and pedagogical content presented in the LMS are very, very good. Pedagogical-content knowledge is an important aspect that must be mastered by teachers because pedagogical-content knowledge will not only require teachers to master various teaching methods and adequate content knowledge, but also require teachers to integrate them meaningfully into daily teaching practices (Shulman, 1987).

The PPG curriculum structure consists of three groups of subjects, namely (1) deepening of pedagogic material and fields of study, (2) development of learning tools and new models of peer teaching, and (3) field experience practice. In the implementation of PPG 2020, the three groups of subjects are presented with a block system, namely the completion of one group of courses at a certain time and when it is finished, the second and third group of courses will be continued at the specified time. The learning implementation of the three subject groups fully utilizes information and communication technology as a form of technology integration in the delivery of content-pedagogical knowledge.

Based on the results of data analysis, the content of knowledge presented in PPG learning in 2020 is in accordance with the needs of students who will become professional teachers in the future. The suitability of the content of knowledge presented in learning will certainly increase learning motivation and can increase student learning potential. This is in line with the views of Anurrahman (2009) which explains that "so that the activities carried out by teachers in the learning process are directed at efforts to increase student potential comprehensively, learning must be developed in accordance with correct principles, which depart from students' internal needs to learn."

The results of data analysis show that the technology needed by PPG participants in learning is simple technology that can increase their students' interest in learning when the PPG participants become teachers. Mastery of technology in learning is important considering that it can be said that the world of education today lives in the world of media, where learning activities have moved towards reducing the conventional delivery system of learning materials towards the use of information and communication technology. Moreover, in learning activities that emphasize competencies related to process skills, the role of learning media becomes increasingly important. Well-designed and creative learning by utilizing information and communication technology (Andriani, 2015).

Based on the results of filling out the open questionnaire, it can also be seen that the integration of technology during the PPG implementation process has provided real illustrations and examples to students on how to use technology in their future learning. Thus, PPG not only provides students with TPACK theories, but also real examples of their application in the classroom. This finding is in line with the findings of Sutanti (2015) which states that giving examples is a very effective technique in learning because students will

have a concrete picture of the application of a concept. Moreover, if the sample giver has certain similarities with the students, giving an example will be easier to accept. This is in line with the results of a study conducted by Bandura (Corey, 2005) which indicates that a model who is like the observer in age, gender, ethnic group, and attitude is more likely to be imitated than a model who is not similar to the observer.

The results also show that students have hopes for the implementation of PPG in the future, including increasing the suitability of pedagogical-content knowledge with the curriculum at school so that the pedagogical-content knowledge presented in PPG will be very useful for students to be applied in institutions. they. In addition, students also hope that the online PPG implementation time can be carried out longer so that they have sufficient time to explore technological-pedagogical-content knowledge. Understanding of student expectations is important to know because teachers' experiences and understanding of their students is very important in materials development, so that the students are motivated in learning the target language (Patel, 2015).

## **CONCLUSION**

The results of the study indicate that the implementation of TPACK in PPG learning in 2020 has been carried out well. This can be seen from the score of the results of filling out the questionnaire which shows that 70.8% of PPG students stated that the implementation of TPACK in the implementation of PPG was very, very good. PPG 2020 has equipped students with good content, pedagogical, and technological knowledge competencies that suit their needs. In addition, the use of technology in the implementation of PPG is also a real example of integrating technology in learning. This concrete example makes PPG learning more meaningful and they have an overview of the application of technology when they carry out learning in class. However, although the implementation of TPACK in PPG has been well implemented, students still hope that the content of the material presented can be more adapted to the curriculum at the school where students will work so that they can more easily follow the learning at PPG. In addition, students also hope that the time allocated for participating in PPG is also longer so that they have sufficient time to better understand PPG materials.

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