Effectiveness of in-service professional teacher education online system (PPG) on non-productive teachers towards productive teachers of kemenristekdikti in cosmetology education on State University of Jakarta

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Abstract. Educational evaluation is one of the supporting factors for quality in education itself. The digital age places education to continue to make updates, especially on online programs. In addition to educational equipment, the education system also increases the competence and qualifications of educator resources, one of which is through PPG Ristekdikti. The successful implementation of online system programs in education can include participants' understanding of online learning media, ease of access, and observation during implementation. This research is a qualitative research that describes the facts and phenomena of online programs from Teacher Professional Education (PPG). This study involved 29 teachers who participated in the PPG Cosmetology program. Based on the results of observations, interviews, and the value data obtained by participants, the online system of the PPG program is quite good because it is considered flexible. Other factors that inhibit the PPG program online system include; (a) management scheduling each assignment, (b) the age of participants who are no longer young, it is quite difficult for participants to understand learning technology online, and (c) in connection with the transfer of programs, not all teachers are able to master cosmetology material.

1. Introduction

1.1. Teacher professionalism
Professionalism of the profession is one of the urgencies of each field and one's expertise, in carrying out its role in certain professions. Along with the high interest in the teaching profession and the high need for educators, especially teachers, the Teacher Professional Education Program (PPG) was implemented as an improvement from the Akta IV to review and improve the quality of teachers with its current quantity based on the Center for Education and Kemendikbud Data and Statistics, the number of teachers in Indonesia in 2017/2018 was 3,027,422 people, with the number of Kindergarten teachers as many as 289,471 people, PAUD teachers 24,334 people, Elementary School teachers 1,485,602, Junior High School teachers 628,052 people, Senior High School teachers 307,751 people, Vocational High School teachers 292,212 people [1].

Professional development for educators has always been the main supporting factor for transforming education itself. As one way to develop educator competence in teaching and learning in the 21st century, aspects that need to be built include; knowledge, trust, and design of educator capacity [2]. In the era of industrial revolution 4.0, education began to align with technological development. The existence of this technology-based system has a positive impact. Learning strategies in online learning
are usually through contextual instruction and role-playing. While the technology used in online learning is to facilitate content, communication and collaboration [3]. Online learning includes learning that is all done electronically, and a mix that involves traditional and online learning methods [4]. Electronic learning systems include the application of various information technologies and information systems as face-to-face and non-face-to-face services. The choice of teaching and learning through online systems can help students to improve themselves and instructors in education, knowledge, and skills with flexible and interesting learning tools without affecting the daily activities of individuals involved in the program [5, 6].

Minister of Education and Kemendikbud Regulation on the Pre-service Teacher Professional Education Program in Article 1 paragraph 2, defines the Pre-service Teacher Pofession Education Program (PPG) is an educational program held to prepare S1 Education and S1 / DIV Non-education graduates who have the talent and interest in becoming teachers in order to be able to thoroughly master teacher competencies in accordance with national education standards so that they can obtain professional educator certificates in early childhood education, basic education, and secondary education. Referring to the explanation above, this study aims to see the effectiveness of online learning for non-productive teachers towards productive teachers through the online Ristekdikti PPG program.

1.2 Online Based Learning
The main factor in conducting online learning and training, according to Bates (1997) [7] is to improve access to education and training, improve the quality of learning, reduce the cost of education, and increase the effectiveness of education costs. Participants in online learning and training, need to have intrapersonal skills such as self-regulation, good communication skills, time management skills, teamwork, and participant behavioral goals directed at the level and needs of online learning itself. In addition to advantages, there were weaknesses in online learning and training, namely; (a) Instructors need to prepare themselves technically and personally to be able to fulfill the participants' curiosity and answer what is needed by the participants, (b) The time needed is more than traditional learning as much as 20-40%, (c) Distance learning impersonal so that it can trigger a lack of direct face-to-face contact, (d) The main obstacle in learning online historically is a technical problem in the technology used [8, 9].

An online-based education system has changed the learning environment. Thus, a study is needed to discuss the quality and control of online learning systems. Previous research mentions the key to online learning systems is quality [10]. The quality and effectiveness of online learning need to be investigated because it is based on two perspectives on the devices used in the learning process, and the quality of education conducted online [11]. The most important problem in the implementation of the online learning system is the existence of a comprehensive and clear aspect as an evaluation of the quality of the system, because many educational institutions have adopted online learning systems without using general guidelines or special frameworks to achieve a complete quality of online education [12, 13].

2. Methods
This research is a qualitative descriptive study, with the implementation time during the PPG Ristekdikti process taking place, and interviews were conducted at the end of the PPG program before the announcement of the participants' graduation. The study population was PPG participants. Examples of research are non-productive teachers who participate in PPG Ristekdikti and attend online classes for transferring programs on productive subjects in Makeup. This study involved 29 teachers who were studied through the results of assignments and final examinations, interviews, and observations.

Data analysis techniques were carried out in descriptive analysis which was processed using the help of the Microsoft Excel program and IBM SPSS Version 20. Data is then presented in a tabulation that contains information (a) number n or data, (b) average or mean which becomes the central size, (c) standard deviation or as a benchmark for the distribution of variable values, and (d) factor analysis. The
analysis was used to look at an overview of PPG non-productive participants' evaluations towards productive teachers on the effectiveness of PPG Ristekdikti's online-based implementation.

3. Results and Discussion

The results showed that the average age of non-productive teachers participating in the PPG Ristekdikti online system was 43.27 years with an average teaching period of 14.24 years, with a percentage of 65% of non-productive teachers coming from teachers in the field of Education Nature or Science, 30% of the fields of study in Social or Social Humanities Education, and 5% are from other fields of study. Participants came from 7% West Java, 17% Central Java, 21% East Java, 17% Lampung, 7% Bengkulu, 14% Sumatra, and 17% Sulawesi (See Figure 1). Based on the research data, PPG Ristekdikti online system participants mentioned that nearly four-fifths (79.3%) had already studied with the online system, wholly (100%) accustomed to using technology tools in search of teaching materials. The average factors that support the effectiveness of the PPG Ristekdikti program are face-to-face between 2.76 (flexibility in working on assignments online) up to 3.14 (ease of accessing the PPG Ristekdikti page). The highest average assessment of the effectiveness factor is the ease of accessing the PPG Ristekdikti page (See table 1). The results of instrument reliability based on factor analysis have been declared reliable with a value of $> 0.6$ on the value of KMO $> 0.5$ which is equal to 0.63. All factors that influence the effectiveness of the PPG Ristekdikti program online in the implementation encourage participants to better understand online learning techniques and the material provided, so based on professional assignment value data, the participants' minimum score range is 74 and the maximum score is 91.

![Figure 1. Participants in the PPG Ristekdikti program are in accordance with the domicile and school where they teach.](image)

Regarding the individual's assessment of the readiness to master online learning, the lowest average is 2.68 (ease of accessing the internet as needed), this is consistent with the results of qualitative data that there are 21% of participants who have difficulty getting internet network in their home areas. While the highest average self-readiness is 3.03 (convenience of electronic communication and activeness of online interaction with colleagues and instructors) (See table 2), the readiness is in accordance with the results of qualitative research which states if communication between participants and instructors, and the sharing of information carried out online is something that is considered interesting during the process of non-face-to-face learning sessions at PPG Ristekdikti. The instrument reliability results from the factor analysis value of 0.86 with a value of $> 0.6$ in the value of KMO $> 0.5$. In other words, the measuring instruments used can be said to be reliable. The preparedness of participants in the implementation of PPG Ristekdikti non-face-to-face influences the enthusiasm of the participants in doing the assignments. This can be seen from the average value of assignments obtained by participants with quite satisfying categories. In addition, the readiness also relates to the accuracy of the collection
of tasks carried out by the participants. Generally, during the implementation of online learning, participants can complete the task in one module, with about half a day or twelve hours.

The research data also shows that in the PPG program Ristekdikti non-face to face has weaknesses that are considered to have an impact on the process and results obtained by the participants. The obstacles are in the form of; (a) More than three-fifths of the participants (76%) stated that the PPG Ristekdikti non-face to face program requires sufficient time management, this is related to the main tasks and functions of the teacher that must be carried out by the participants during the activity, and related the role of participants as a mother and wife who need to take care of household needs, (b) One-fifth of the participants (21%) revealed more mature debriefing before the activity began, and (c) Nearly two-fifths of participants (38%) said that special books were needed in physical form, as a guide to the use of the application and the page that will be used during the PPG process Ristekdikti non-face to face.

Table 1. Descriptive Statistics And Loading Factor Values Against Factors Affecting Online PPG Ristekdikti Program Effectiveness

| Numb. | Influencing Factors | Descriptive Statistics | Loading Factor Value |
|-------|---------------------|------------------------|---------------------|
| 1.    | Ease of accessing the PPG Ristekdikti page | 3.14 | 0.195 | 0.441 | 0.60 |
| 2.    | Flexibility time to do assignments online | 2.76 | 0.333 | 0.577 | 0.72 |
| 3.    | Relevance of material | 2.93 | 0.067 | 0.258 | 0.65 |
| 4.    | Explanation provided by the instructor is quite easy to understand | 2.86 | 0.123 | 0.351 | 0.85 |
| 5.    | Feedback from the instructor | 2.86 | 0.195 | 0.441 | 0.84 |
| 6.    | Discussion given is interesting | 2.90 | 0.096 | 0.310 | 0.56 |
| 7.    | Ease of navigation menu page PPG Ristekdikti to be used | 2.97 | 0.106 | 0.325 | 0.58 |
| 8.    | Suitability of assignments with material given | 2.93 | 0.067 | 0.258 | 0.77 |
| 9.    | Instruktur objectivity | 2.97 | 0.034 | 0.186 | 0.59 |

Regarding debriefing, these results reinforce previous research which states that in the digital era and technology-based learning, a participant will experience a complex situation, in the form of understanding of social networks, how to use information search engines, and reflecting on acquired knowledge correctly [14]. Participants’ readiness to use technology is a component that builds online learning [15]. Another study conducted by Hao [16] concluded that the level of readiness of online learning participants could differ depending on personal characteristics and individual circumstances. In addition, it can be seen that the level of willingness of participants can result in differences in language use, participant perceptions, teacher characteristics, availability of support and resources, learning performance, study time, and time availability of the participants themselves.

Table 2. Descriptive Statistics and Loading Factor Values Against Participant Readiness in Mastery of Media Learning

| Numb. | Factors of Participant Readiness | Descriptive Statistics | Loading Factor Value |
|-------|---------------------------------|------------------------|---------------------|
| 1.    | Ease of accessing the internet as needed | 2.68 | 0.409 | 0.639 | 0.69 |
Convenience of electronic communication 3.03 0.249 0.499 0.89
Active online interaction with colleagues and instructors 3.03 0.177 0.421 0.70
Time discipline 2.97 0.177 0.421 0.57
Time management ability 2.83 0.291 0.539 0.69
Accustomed to working and studying with smart phones, and PCs / Laptops 3.00 0.143 0.378 0.84
Speed of response from instructors and the ability to ask questions efficiently in online systems 2.69 0.293 0.541 0.64
Motivated with material on the internet, and can learn through activities outside the classroom 2.72 0.207 0.455 0.82
Easy to collaborate with others while learning online systems 2.90 0.096 0.310 0.65
Optimists can learn many things with use online media 2.72 0.350 0.591 0.75

In addition to weaknesses, the PPG Ristekdikti program has advantages according to participants, namely (a) One-fifth of the participants (28%) considered this program to have high flexibility so that the forms of learning activities obtained through the instructor up to the final evaluation stage could see transparently and in a fairly short period of time, and (b) Nearly two-fifths of participants (38%) said they could get to know technology in learning and teaching, so that it could be applied as a method of teaching their students.

4. Conclusion

Based on the research findings, what needs to be evaluated from the PPG Ristekdikti program to transfer the profession of non-productive teachers to become productive teachers is; (a) More than two-fifths of respondents (45%) revealed that this program would be conducted for the following year, requiring additional time in the duration of online assignment, (b) One-fifth of respondents (24%) stated that before the program was implemented it would require training skills regarding application and how to access the program, this is due to the age of participants in the program not including adolescents who are easy to operate and implement technology-based learning. However, there is a lot of help from the help desk, and (c) One-fifth of the respondents (21%) feel that there is a need for a trial before implementation, to see the obstacles that will occur during the process of the activity.

Overall, this program is one of the positive online-based learning programs. Respondents revealed that the benefits obtained after participating in PPG Ristekdikti were non-face-to-face, including; (a) Add insight and ability to find accurate literacy sources with internet access, (b) Train independent learning and set priorities, and (c) Save and cut costs during activities. The program utility obtained in the study, in accordance with previous research, revealed that electronic-based learning and training can save operational costs including accommodation, travel and physical classroom bookings that require participants to attend face-to-face.
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