



Youth Teachers Program in Information Technology Management

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ABSTRAK

Manajemen mutu adalah alat yang memungkinkan guru untuk beradaptasi dengan kekuatan perubahan yang menghantam sistem pendidikan, pengetahuan yang dibutuhkan untuk meningkatkan sistem pendidikan kita sudah ada dalam komunitas pendidikan itu sendiri. Kesulitan utama yang dihadapi guru saat ini adalah ketidakmampuannya menghadapi sistem baru sehingga menjadi masalah bagi guru untuk mengembangkan atau melaksanakan proses pendidikan baru yang akan meningkatkan mutu pendidikan. Penelitian ini bertujuan untuk menganalisis hasil evaluasi secara terpisah dan simultan ditinjau dari konteks, input, proses, produk, dan kendala dalam program Diklat Guru Muda dalam pengelolaan teknologi informasi dan komunikasi. Penelitian ini merupakan penelitian evaluasi program dengan model CIPP. Populasi penelitian ini adalah 69 tenaga pendidik dan tenaga administrasi. Sampel penelitian dipilih dengan menggunakan teknik random sampling. Data mengenai konteks, input, proses, dan produk dalam penelitian ini dikumpulkan dengan menggunakan kuesioner dengan skala Likert 1-5. Metode analisis data yang digunakan dalam penelitian ini adalah metode analisis deskriptif kuantitatif. Analisis menemukan bahwa Program Guru Muda dalam mengelola teknologi informasi terbukti efektif dari segi konteks, masukan, proses, dan produk, baik secara mandiri maupun simultan. Namun, beberapa kendala teknis dan non-teknis masih dialami selama pelaksanaan program.

ABSTRACT

Quality management is a tool that allows teachers to adapt to the forces of change hitting the education system, the knowledge needed to improve our education system already exists within the education community itself. The main difficulty faced by teachers today is their inability to deal with the new system so that it becomes a problem for teachers to develop or implement new educational processes that will improve the quality of education. This study aims to analyze the results of independent and simultaneous evaluations in terms of context, input, process, product, and the constraints in the Young Teacher Training program in the management of information and communication technology. This research was a program evaluation research with the CIPP model. The population of this study was 69 educators and administrative staff. The samples of the study were selected using a random sampling technique. Data regarding context, input, process, and product in this study were collected using a questionnaire using a Likert scale of 1-5. The data analysis method used in this research is the quantitative descriptive analysis method. The analysis found that the Young Teachers' Program in managing information technology has proven to be effective in terms of context, input, process, and product, both independently and simultaneously. However, some technical and non-technical obstacles are still experienced during program implementation.

1. INTRODUCTION

Quality management is a tool that allows teachers to adapt to the forces of change hitting the education system, the knowledge needed to improve our education system already exists within the education community itself (Duffuaa & Raouf, 2015; Rosinawati et al., 2021). The main difficulty faced by teachers today is their inability to deal with the new system so that it becomes a problem for teachers to develop or implement new educational processes that will improve the quality of education (Ambussaidi & Yang, 2019; Sulaiman & Ismail, 2020). Educational problems need to get better attention and handling regarding the importance of learning management. The Covid-19 pandemic has had a major impact on various sectors, including the education sector. All schools and colleges in almost all countries affected by Covid-19 enforce a policy of learning from home or distance learning (Hill, 2021; Lau & Lee, 2021). In practice, distance learning provides different challenges for teachers, students, institutions, and even the wider community such as parents (Anthony C. Inciso, 2021; Armstrong-Mensah et al., 2020). In practice,

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teachers must find and prepare various ways so that learning materials can be conveyed and received well by students. Likewise, students need greater effort, both materially, energy, and psychological readiness.

Distance learning is a learning system that does not take place in one room and there is no direct face-to-face interaction between teachers and students (Martin et al., 2019; Rahim, 2022). In the era of increasingly rapid development of technology, communication and information, distance learning during this pandemic can be carried out using various platforms, either in the form of a learning management system or in the form of video conferencing (Prestiadi et al., 2020; Rigo & Mikuš, 2021). Learning management systems that are widely used include Google Classroom and E-learning portals owned by schools or universities. Meanwhile, video conferencing applications that are widely used during distance learning include zoom applications, google meet, and visco webex. In addition to these applications, Whatsapp Group is also an alternative in implementing distance learning. However, not a few teachers and students have difficulty using these applications due to the limitations of distance learning support facilities, especially technology support and internet networks (de la Peña et al., 2021; Veletsianos & Houlden, 2019).

In implementing distance learning during the Covid-19 pandemic, the challenges and obstacles are not only limited to technology support facilities and internet networks. Other obstacles to the implementation of distance learning during the Covid-19 pandemic include the readiness of human resources, unclear government directives, and the absence of an appropriate distance learning curriculum (Andarwulan et al., 2021; Arifa, 2020). The readiness of human resources is an important part in the successful implementation of distance learning, this readiness is related to the ability of teachers and students to use and manage all technological systems used in the distance learning process. The ability to use and manage technology, information and communication systems is often called technology, information and communication literacy (Khalid, 2011; Maphosa & Bhebhe, 2019). Technology, information and communication (ICT) is an important factor in distance learning during the Covid-19 pandemic. Competence and in using computers and surfing in cyberspace are basic skills needed in the implementation of distance learning (Lubis & Dasopang, 2021; Zam, 2021). Furthermore, previous study states that the competence and level of ICT affect the effectiveness and efficiency of the teaching and learning process (Shopova, 2014). Meanwhile, ICT which is more specific on the use of digital media, previous study states that ICT is influenced by the level of generation and age of technology users, the younger generation is easier to manage technology than the older generation (Clark, 2009). In the context of the ongoing implementation of distance learning, the difference in generation and age between teachers and learners can be an obstacle to the smooth implementation of distance learning. Therefore, improvement and standardization of teachers and students in mastering information and communication technology need to be pursued by all parties involved in distance learning.

Young Teachers (GARUDA) is a program initiated by Nyoman Sukrada as the Head of SMA Negeri 1 Tejakula. The beginning of the formation of the GARUDA Team started from the beginning of the Covid-19 Pandemic. During the Covid-19 pandemic, the teachers, especially the old teachers at SMA Negeri 1 Tejakula, were confused because they had to change the learning pattern from face-to-face to distance learning. Educators are confused about the technology used in learning. After that, the school management issued a policy for the formation of the GARUDA Team, which was originally projected to address distance learning problems. GARUDA is a school program for SMA Negeri 1 Tejakula which consists of young teachers at SMA Negeri 1 Tejakula. Teachers who are members of GARUDA are teachers who are experts in information and communication technology, especially the learning technology used in distance learning. GARUDA's main task is to assist and assist teachers who are not yet able to use learning technology, especially older teachers. The GARUDA team is responsible for ensuring that all teachers at SMA 1 Negeri Tejakula understand and can apply learning technology in distance learning in the form of e-learning, classroom, zoom, google meet, as well as learning media used in distance learning for example ppt, mentimeter, google forms, and also the creation of learning videos. The existence of GARUDA is expected to create collaboration between senior teachers and young teachers, especially in the management of information technology during the teaching and learning process.

At first the GARUDA team showed good progress. The GARUDA team is very helpful for schools in managing distance learning. Teachers who initially did not understand online learning became able to manage distance learning, even teachers were also able to make learning videos with their own creativity. This is an achievement that is highly expected by the school with the existence of GARUDA. However, over time, the GARUDA team not only helps and assists teachers regarding distance learning technology, but also manages the technology management system in schools to the school website. The GARUDA program has been running for approximately 2 years during the Covid-19 pandemic. Every activity program, both educational and non-educational programs, should be followed by evaluation activities. Evaluation is carried out with the aim of assessing whether a program has been implemented according to plan and has achieved the expected results or not. Based on the results of the evaluation, it will be known what things

have been achieved, whether a program can meet the predetermined criteria. After that, a decision is then taken whether the program is continued, revised, terminated or reformulated so that new goals, targets and alternatives can be found that are completely different from the previous format. In order to develop a better program, the results of the previous program evaluation can be used as the main reference.

In this study, the authors evaluate the GARUDA program in the management of information technology at SMA Negeri 1 Tejakula using the CIPP model. According to previous research the CIPP evaluation model is a decision-oriented evaluation approach structured to provide assistance to administrators or decision-making leaders (Clark, 2009). By using this evaluation model, it is easier for policy makers to decide the policy of a program. The CIPP evaluation model is a model that can be directly identified in which areas the program must be improved/developed (Arikunto & Safruddin, 2009; Mustapha et al., 2020). Research on the management of information technology has recently been carried out, including learning management as a technology in learning (Erwinsyah, 2016), information technology management in creating learning innovation models (Hadisi & Muna, 2015), the role of information and communication technology literacy in distance learning. away during the Covid-19 pandemic (Zam, 2021). Based on the uniqueness found in the field and supported by related previous research. Therefore, researchers are interested in conducting this research, the purpose of this research is to analyze the results of independent and simultaneous evaluations in terms of context, input, process, product, and constraints in the education and training program in the management of information and communication technology.

2. METHOD

This research was a program evaluation research with the CIPP model. This research was conducted at SMA Negeri 1 Tejakula, Buleleng, Bali, Indonesia. The saturated sampling technique was used to determine the research sample, which means that the population was directly used as the research sample. The sample of this study was all teachers at SMA Negeri 1 Tejakula, totalling 49 teachers. The data in this study were collected using a questionnaire. Interviews and documentation.

The questionnaire to evaluate the effectiveness of the Young Teacher Training program in the management of information and communication technology. This questionnaire was a five Likert scale questionnaire. The questionnaire consisted of 12 items for the context variable, 10 items for the input variable, 12 items for the process variable, and 6 items for the product variable. The questionnaire results were analyzed using SPSS in order to get the mean score of each of the variable. To categorize the result of the questionnaire using a criteria that was determined by using the theoretical ideal reference assessment theory (Nurkencana & Sunartana, 1992). The ideal theoretical reference of measurement formula can be seen in Table 1.

Table 1. The Theoretical Ideal Reference Assessment Criteria

No	Interval	Category
1	$(MI + 1.5 SDI) < X$	Very Effective (VE)
2	$(MI + 0.5 SDI) \leq X < (MI + 1.5 SDI)$	Effective (E)
3	$(MI - 0.5 SDI) \leq X < (MI + 0.5 SDI)$	Somewhat Effective (SE)
4	$(MI - 1.5 SDI) \leq X < (MI - 0.5 SDI)$	Ineffective (I)
5	$X < (MI - 1.5 SDI)$	Very Ineffective (VI)

Note:

MI = $\frac{1}{2}$ (ideal maximum score + ideal minimum score)

SDI = $\frac{1}{6}$ (ideal maximum score - ideal minimum score)

Based on Table 1, show the ideal theoretical reference of measurement formula, the criteria to categorize the effectiveness of the Young Teacher Training program in the management of information and communication technology can be seen in Table 2.

Table 2. The Categories for The Results of the Questionnaire

Category	Each aspect of CIPP				All Aspects
	Context	Input	Process	Product	
Very Effective	$48 < X$	$40 < X$	$48 < X$	$24 < X$	$160 < X$
Effective	$40 < X \leq 48$	$33.3 < X \leq 40$	$40 < X \leq 48$	$20 < X \leq 24$	$133.3 < X \leq 160$
Somewhat Effective	$32 < X \leq 40$	$26.7 < X \leq 33.3$	$32 < X \leq 40$	$16 < X \leq 20$	$106.7 < X \leq 133.3$
Ineffective	$24 < X \leq 32$	$20 < X \leq 26.7$	$24 < X \leq 32$	$12 < X \leq 16$	$80 < X \leq 106.7$
Very Ineffective	$X < 24$	$X < 20$	$X < 24$	$X < 12$	$X < 80$

3. RESULT AND DISCUSSION

Result

The results of the questionnaire to measure the effectiveness of the young teacher training program in the management of Information and communication technology can be seen in [Table 3](#).

Table 3. Descriptive Statistics Result

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Content	49	24.00	36.00	60.00	46.1224	6.28700
Input	49	20.00	30.00	50.00	38.3673	5.37624
Process	49	24.00	36.00	60.00	46.8571	6.49679
Product	49	12.00	18.00	30.00	22.3265	2.87509
All_aspect	49	80.00	120.00	200.00	153.67	20.40873

Based on [Table 3](#), the result shows that the mean score of all aspect was 153.67. Therefore it was categorized as Effective. Specifically, from the input and process aspects, since the mean scores were > 40, it means that they were categorized as effective. The same thing also applies to input and product aspects. The input mean score was 38.37 > 33.3 and the product mean score was 22.33 > 20 that indicate that they were categorized as effective. There were following results of the questionnaire that show the frequency of the questionnaire result from each aspect. The result of the questionnaire from Context aspect can be seen in [Table 4](#).

Table 4. Frequency of Context Aspect

Mean Score	Number	Percentage	Category
48 < X	14	28.57	Very Effective
40 < X ≤ 48	27	55.10	Effective
32 < X ≤ 40	8	16.33	Somewhat Effective
24 < X ≤ 32	0	0.00	Ineffective
X < 24	0	0.00	Very Ineffective
TOTAL	49	100	-

Based on [Table 4](#), from the context aspect, it can be seen that most respondents (55.10%) felt that the GARUDA program in the management of information technology was effective. In addition, 28.57% of them even felt that the program was very effective. Only 16.33% of the respondents said that the program was somewhat effective. None of the respondents said that the program was ineffective. The result of the questionnaire for the input aspect can be seen in [Table 5](#).

Table 5. Frequency of Input Aspect

Mean Score	Number	Percentage	Category
40 < X	11	22.45	Very Effective
33.3 < X ≤ 40	29	59.18	Effective
26.7 < X ≤ 33.3	9	18.37	Somewhat Effective
20 < X ≤ 26.7	0	0.00	Ineffective
X < 20	0	0.00	Very Ineffective
TOTAL	49	100.00	-

Based on [Table 5](#), considering the Input aspect, the result of the questionnaire confirmed that 59.18% or most respondents said that the program was effective. Besides , 22.45% confirmed that the program was very effective. From the result of the questionnaire only 18.37% respondents felt that it was somewhat effective and none of them felt it was ineffective. Thus, it can be said that from the input aspect the respondents confirmed that the program was effective.

The result of the questionnaire for process aspect can be seen in [Table 6](#). Based on [Table 6](#), if it is seen from the process aspect, the respondents who believed that the program was very effective and effective almost in the same number. There were 40.82% respondents stated that the program was very

effective and 42.86% stated that it was effective. Only 16.33% respondents stated that the program was somehow effective.

Table 6. Frequency of Process Aspect

Mean Score	Number	Percentage	Category
48 < X	20	40.82	Very Effective
40 < X ≤ 48	21	42.86	Effective
32 < X ≤ 40	8	16.33	Somewhat Effective
24 < X ≤ 32	0	0.00	Ineffective
X < 24	0	0.00	Very Ineffective
TOTAL	49	100.00	-

The result of the questionnaire for product aspect can be seen in Table 7. Based on Table 7, in terms of product point of view, the result of the questionnaire also confirms that most of the respondents (46.94%) stated that the program was effective. There were 22.45% respondents stated that the program was very effective and the other 30.61% felt that the program was somewhat effective.

Table 7. Frequency of Product Aspect

Mean Score	Number	Percentage	Category
24 < X	11	22.45	Very Effective
20 < X ≤ 24	23	46.94	Effective
16 < X ≤ 20	15	30.61	Somewhat Effective
12 < X ≤ 16	0	0.00	Ineffective
X < 12	0	0.00	Very Ineffective
TOTAL	49	100.00	-

If we see from all CIPP aspects, we will have the result as what is shown in Table 8. Based on Table 8 show the result of the questionnaire for all aspects shows that 28.57% respondents stated that the program was very effective. Most respondents (55.10%) stated that it was effective and the rest 16.33% felt that it was somehow effective. None of the respondents stated that the program was ineffective or very ineffective. Thus it can be concluded that, in general, the program was effective.

Table 8. Frequency of All CIPP Aspect

Mean Score	Number	Percentage	Category
160 < X	14	28.57	Very Effective
133.3 < X ≤ 160	27	55.10	Effective
106.7 < X ≤ 133.3	8	16.33	Somewhat Effective
80 < X ≤ 106.7	0	0	Ineffective
X < 80	0	0	Very Ineffective
TOTAL	49	100	-

Discussion

Based on the result of the questionnaire, we can conclude that the Young Teacher Training Program in the Management of Information and Communication Technology was effective. If we see the result of the questionnaire and compare the result of each aspect, we will find that most of the respondents agreed that the program was most effective from process aspect. This result has something to do with the fact that the respondents are mostly the X and Y generation who are good in technology application (Issa & Isaias, 2016; Kocak & Yuksek, 2019; Kurz et al., 2019; Kuss et al., 2018). Thus, most of them have a good perception on the use of technology for teaching and learning process (Febriansyah et al., 2020; Persada et al., 2019). That was also the reason why the results of the study confirmed that from the product, input, and context most of the respondents stated that the program was effective. Based on the result of the observation and interview, there were some problems were identified during the implementation of Young Teacher Training Program in the Management of Information and Communication Technology. In general, the problems can be divided into two, the technical and non-technical problems. The followings are the explanation of those two problems.

Based on the result of the observation, some respondents had some problems to get reliable internet connection. Since internet connection is very important in implementing technology at school, when the teachers cannot access it, it becomes a crucial problem. Teachers may get learning materials, use online learning application, download learning media and assessment from the internet (Saha et al., 2022; Viitaharju et al., 2021). During the program, the problem in internet connection can be seen from their reaction during the training program. Some of them are trying to connect their laptop to their smartphone because the internet connection through wifi that was provided by the school cannot support them. Unstable internet connection or slow internet connection is a common problem in Indonesia (Cahyadi et al., 2021; Laksana & Fadhilah, 2021).

In addition, some respondents also have problems with their laptop. Some respondents reported that their laptops were slow or do not support some applications. Some of them also had problems on the battery of the laptops. Thus, they needed to plug the laptops every time they need to use it. Those problems lead to another problem that was time management. Since the respondents need time to solve their problems, they need extra time to complete the training. Hardware problems are common problems in integrating technology at schools (Gómez-García et al., 2020; Zhao & Cziko, 2001). Thus, schools should provide quality infrastructure to support the implementation of the technology for teaching and learning process (Bhuana & Apriliyanti, 2021; Karakose et al., 2021).

The non-technical problem that the respondents faced during the program were the respondents' perception on the use of technology in the teaching and learning process. Some of the respondents believed that face to face instruction is better than the online learning. Based on the result of the interview, they confirmed that face to face instruction is more effective than the online learning for some reasons. For them, the reasons include teacher and students' interaction, students' participation, and technical problems. Since they had negative perception on online learning, it influences their performance during the training program. It is because the perception on technology influences the users' motivation to use technology (Baber, 2021; Jiang et al., 2021). It means that when the users have a negative perception on technology, they will have a low motivation to use technology and vice versa.

Besides, some female respondents also found difficulties in following the program. That problem was identified during the implementation of the program. The female teachers found it difficult to follow the program. This finding is supported by the results of some previous studies, which found that gender influences users' interest of using technology, where male users are normally more interested in technology compared to the female users (Jiang et al., 2021; Kim et al., 2014).

4. CONCLUSION

From the results of the study, this study concludes that Young Teacher Training Program in the Management of Information and Communication Technology was effective. It can be seen from the result of the questionnaire that the program was considered effective by most of the respondents from context, input, process, and product aspects. However, even though the program was categorized effective, there were some problems faced by the respondents during the training. Those problems include the technical and non-technical problem. Since the analysis of the study was limited on descriptive statistics analysis, a further study to prove the effectiveness of the program using inferential statistics is needed.

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