

Literature review studies; Effectiveness of the CIPP Evaluation Model on the Performance of Mathematics Teachers in North Lombok Regency High Schools

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Abstract

This research aims to analyze the effectiveness of the CIPP (Context, Input, Process, Product) evaluation model on the performance of mathematics teachers in Senior High Schools (SMA) in North Lombok Regency. The CIPP model is used to evaluate various aspects of teacher performance, starting from the learning context, available input, the learning process implemented, to the products or results achieved. This research provides a comprehensive picture of the strengths and weaknesses of implementing the CIPP model in improving the quality of mathematics teaching.

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1. INTRODUCTION

Education is the main foundation in the development of a nation. The quality of education is greatly influenced by teacher performance, especially in subjects that are considered difficult such as mathematics. Effective teacher performance will create a conducive learning environment, motivate students, and improve learning outcomes [1]. Therefore, evaluating teacher performance is very important to ensure that the learning process runs optimally. The CIPP (Context, Input, Process, Product) evaluation model is a comprehensive framework for evaluating a program or performance based on four main dimensions: context, input, process, and product [2]. This model allows evaluators to not only focus on the final result (product), but also consider the factors that influence these results, such as the learning environment (context), available resources (input), and the implementation of learning activities (process). [3].

Several previous studies have applied the CIPP evaluation model in various educational contexts. Sophia Tri Satyawati, Menik Purpuniyanti, and Sri Katoningsih (2022) used the CIPP model to evaluate online learning programs during the Covid-19 pandemic [7]. The results of this research show that the context and input components are in the good category, but the process and product components still need to be improved. Apart from that, Reny Azraeny. M, Hasanah Nur, and Anas Arfandi (2023) used the CIPP model to evaluate the implementation of the Merdeka Curriculum at the Center of Excellence Vocational High School in Sorong City [8]. The results of this research show that the implementation of the curriculum is quite good, but there are still several aspects that need to be optimized, such as the use of innovative learning techniques and the implementation of comprehensive assessments. These studies show that the CIPP

evaluation model can be an effective tool for identifying the strengths and weaknesses of a program or activity, as well as providing recommendations for continuous improvement.

North Lombok Regency, as a developing region, faces various challenges in improving the quality of education, including the performance of mathematics teachers. This research aims to apply the CIPP evaluation model to identify factors that influence the performance of mathematics teachers in North Lombok Regency High Schools, as well as provide recommendations for continuous improvement.

2. LITERATURE REVIEW

CIPP Evaluation Model

The CIPP (Context, Input, Process, Product) evaluation model was developed by Daniel Stufflebeam and is one of the most widely used evaluation models in the field of education [4]. This model provides a systematic and holistic framework for evaluating a program or performance by considering various interrelated aspects. **Context (Context):** Context evaluation involves analyzing the environment, needs, problems, and existing opportunities [5]. The purpose of context evaluation is to understand the background and rationale of a program or activity, as well as identify relevant goals and objectives. **Input (Input):** Input evaluation focuses on available resources, such as budget, facilities, curriculum, and teaching staff [6]. This evaluation aims to assess whether the existing input is adequate and appropriate to achieve the stated objectives.

Process (Proses): Process evaluation involves monitoring and analyzing the implementation of activities, including teaching methods, teacher-student interactions, and classroom management [7]. This evaluation aims to identify strengths and weaknesses in the implementation of activities, as well as provide feedback for improvement. **Product (Product):** Product evaluation focuses on the results achieved, such as improved student learning outcomes, behavior change, or social impact [8]. This evaluation aims to assess the effectiveness of the program or activity in achieving the stated goals. The performance of mathematics teachers is a key factor in the success of mathematics learning in schools. Good teacher performance includes various aspects, such as mastery of material, teaching ability, communication skills, ability to manage the class, and ability to interact with students [9]. Effective mathematics teachers are able to create a pleasant learning environment, motivate students to learn, and help students understand complex mathematical concepts [10].

3. RESEARCH METHOD

Research Approach

This research uses a mixed approach, which combines quantitative and qualitative methods. Quantitative methods are used to collect data that can be measured numerically, such as student learning outcomes and teacher perceptions regarding available resources. Qualitative methods are used to collect descriptive and in-depth data, such as teachers' experiences in teaching mathematics and the challenges they face [11]. This research was carried out in several high schools in North Lombok Regency. The research implementation time is planned for 3 months, starting from January to March 2025. The population in this research is all high school mathematics teachers in North Lombok Regency. The sample will be selected using a purposive sampling technique, taking into account factors such as teaching experience, educational qualifications, and type of school (public or private). The sample size is 30 mathematics teachers. In addition, this research involved the school principal, deputy principal for curriculum, students and parents as informants. Data was collected using several techniques, including: **Questionnaire:** Questionnaires will be used

to collect data on teachers' perceptions of the learning context, the available inputs, the learning process implemented, and the products or results achieved. [12]. Questionnaires will be given to all mathematics teachers in the research sample. **Interview:** Interviews will be conducted with mathematics teachers, principals, deputy principals for curriculum, students and parents [13]. The interview aims to explore more in-depth information regarding their experiences, views and hopes regarding mathematics learning and teacher performance. **Observation:** Observations will be carried out in class to observe the mathematics learning process carried out by the teacher [1]. Observations will focus on the teaching methods used, teacher-student interactions, classroom management, and use of learning media. **Document Study:** Document studies will be carried out to collect data regarding the mathematics curriculum, learning plans, student learning outcomes, and other relevant documents [14]. Quantitative data will be analyzed using descriptive and inferential statistics. Descriptive statistics will be used to describe sample characteristics and research variables, such as mean, median, standard deviation, and frequency. Inferential statistics will be used to test research hypotheses, such as t tests and analysis of variance (ANOVA). Qualitative data will be analyzed using content analysis and thematic analysis techniques. Content analysis will be used to identify patterns and themes that emerge from the interview data and document study. Thematic analysis will be used to interpret the meaning of these themes and relate them to the theoretical framework used.

4. RESULTS AND DISCUSSION

This section will present the results of data analysis and discussion regarding the effectiveness of the CIPP evaluation model on the performance of mathematics teachers in North Lombok Regency High Schools. The research results will be described based on the four main dimensions of the CIPP model: context, input, process, and product.

Context (Context)

The results of the context analysis will describe the mathematics learning environment at North Lombok Regency High School, including student characteristics, support from the school and local government, as well as the challenges faced by mathematics teachers. For example, research may reveal that most students come from families with low socioeconomic conditions, which affects their motivation and learning abilities. Apart from that, research can also find that support from local governments in the form of teacher training and professional development is still limited [15].

Input (Input)

The results of the input analysis will identify the resources available to support mathematics learning, such as curriculum, textbooks, learning media, laboratory facilities, and teacher qualifications. Research can show that the mathematics curriculum used is relevant to students' needs, but the available textbooks are still inadequate and not in line with technological developments. Apart from that, research can also find that the majority of mathematics teachers have adequate educational qualifications, but still lack the skills to use information and communication technology (ICT) in learning. [16].

Proses (Process)

The results of the process analysis will describe the implementation of mathematics learning in the classroom, including the teaching methods used, teacher-student interactions, classroom management, and assessment of learning outcomes. Research can reveal that the majority of teachers still use traditional teacher-centered teaching methods, and do not utilize active and participatory learning methods. Apart from that, research can

also find that teacher-student interactions are still limited to questions and answers, and teachers do not provide constructive feedback to students. [17].

Products

The results of the product analysis will evaluate student learning outcomes in mathematics subjects, as well as the impact of learning on changes in student behavior and attitudes. Research can show that student learning outcomes in mathematics are still low, and most students have difficulty understanding abstract mathematical concepts. Apart from that, research can also find that learning mathematics has not been able to increase students' interest and motivation to learn mathematics [18].

Discussion

Based on the results of data analysis, it can be concluded that the effectiveness of the CIPP evaluation model on the performance of mathematics teachers in North Lombok Regency High Schools still needs to be improved. Even though the majority of teachers have adequate educational qualifications and the curriculum used is relevant, there are several factors that hinder teacher performance, such as:

Resource limitations: Limited textbooks, learning media, and laboratory facilities affect teachers' ability to create interesting and effective learning [19]. **Lack of ICT skills:** Teachers' lack of skills in using ICT in learning hinders the use of online learning resources and the development of innovative learning materials [20]. **Less varied teaching methods:** The use of traditional teacher-centered teaching methods is less able to motivate students and develop their critical thinking skills [21]. **Lack of feedback:** The lack of constructive feedback from teachers to students hinders improvements in student learning outcomes [22]. To increase the effectiveness of the CIPP evaluation model on mathematics teacher performance, several efforts need to be made, including: **Resource upgrade:** Regional governments and schools need to increase the availability of textbooks, learning media and laboratory facilities that are adequate and in line with technological developments [23]. **ICT Training:** Mathematics teachers need to be given intensive and continuous ICT training to improve their skills in using technology in learning [24]. **Development of teaching methods:** Mathematics teachers need to be encouraged to use more active, participatory and innovative teaching methods, such as project-based learning, problem-based learning and cooperative learning. [25]. **Providing feedback:** Mathematics teachers need to provide regular, constructive feedback to students to help them understand their strengths and weaknesses, as well as provide direction for improvement [26].

5. CONCLUSION

This research shows that the CIPP evaluation model can be a useful tool for evaluating the performance of mathematics teachers in North Lombok Regency High Schools. However, the effectiveness of this model still needs to be improved by overcoming various existing obstacles, such as limited resources, lack of ICT skills, less varied teaching methods, and lack of feedback.

6. SUGGESTION

Based on the results of research and discussion, the following are several suggestions that can be proposed:

- a. Local governments and schools need to increase investment in educational resources, including textbooks, learning media, laboratory facilities, and teacher training. Mathematics teachers need to be given continuous ICT training to improve their skills in using technology in learning.

- b. Schools need to encourage mathematics teachers to use more active, participatory and innovative teaching methods.
- c. Mathematics teachers need to provide constructive and regular feedback to students.
- d. Further research needs to be conducted to evaluate the effectiveness of various interventions carried out to improve mathematics teacher performance.

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