

# Efforts to Produce Teacher Candidates and Reflective Supervisors Using the IMPRECI Model in Pre-service PPL PPG Universitas Negeri Medan

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**Abstract.** The aim of the research is to produce prospective teachers and reflective supervisors for the Medan State University PPG Pre-Service program in 2023. This was done based on the low reflective ability of PPG Pre-Service students in improving the continuous learning process. This research is guided action research in classroom action research or commonly termed C-NAR (Collaborative Nested Action Research). In its implementation, PPG Pre-service students as prospective teachers continue to make improvements and innovations in the learning process, field supervisors continue to make continuous improvements in guidance. The research procedure goes through the D-I-O-R stages (Design, Implementation, Observation and Reflection). The research subjects were 3 students. Research data was collected through observation, questionnaires and documentation. The instruments used were observation sheets, questionnaires and documentation checklists. Data were analyzed using qualitative descriptive data analysis. Field test data by students was analyzed using a qualitative data flow model starting from data reduction, data presentation, to conclusions. The results of research through 3 learning cycles by 3 students show that students can make innovations and continuous improvements in each learning cycle. Thus, the use of the IMPRECI model with the C-NAR approach can produce reflective teachers and supervisors at Medan State University Pre-Service PPL PPG.

**Keywords:** C-NAR, IMPRECI, Pre-Service PPG, Reflective Teacher, Elementary School

## 1 Introduction

Pre-service PPG is a professional education program that aims to produce a new generation of prospective teachers in Indonesia who have a calling to be teachers, professionals, are committed to being role models, love the profession, and lifelong learning [12,18]. In order to achieve the goals stated, it is necessary to carry out various innovations in the LPTK organizers so that they are able to produce teacher candidates who are professional, role models, love the profession, and lifelong learners [19,13]. In this case, it is explained that "Only teachers who continue to learn can continue to teach". This quote is interesting to translate to produce ideal future teacher candidates. This concept is often also termed reflective ability for prospective teachers.

An understanding of reflective teachers is the teacher's ability to make continuous improvements in every learning process [11,16,17]. Fail today, fix tomorrow. Fail tomorrow, fix the next day, and so on. This is what is said to be continuous improvement in learning [10]. With continuous improvements carried out, it is hoped that the quality of learning will be able to improve over time. Therefore, LPTKs that organize Pre-Service PPG should have a strong commitment in carrying out their role so that they are able to produce prospective teachers who are reflective in learning [15].

Reflective teachers in pre-service PPG can be produced if they are preceded by the reflective abilities of their supervisor or mentor. We know that the supervisors referred to in the Pre-Service PPG are lecturers and tutors. Lecturers and tutors as central figures who are able to produce reflective teacher candidates, it is important to have reflective abilities as well. Therefore, a mentoring model design framework is needed that is not only focused on developing the reflective abilities of prospective teachers, but is also capable of developing the reflective abilities of lecturers and tutors as mentors simultaneously [8,14].

Universitas Negeri Medan as the LPTK organizing the 2022/2023 Pre-Service PPG is taking part in producing prospective teachers and reflective supervisors. Lecturers and tutors are given the mandate to be able to make continuous improvements in the mentoring process which can indirectly direct students to make continuous improvements in learning at school. In this case, it needs to be developed by implementing a reflective guidance model which leads to the formation of prospective teachers and reflective supervisors.

Seeing the explanation above, researchers are interested in implementing a reflective mentoring model that not only concentrates on producing reflective teacher candidates, but produces reflective mentors at the same time. The reflective coaching model in question is the IMPRECI model. IMPRECI is an abbreviation of the 5 stages used starting from initial introduction by lecturers (Introduction), modeling by Lecturers and Teachers (Modelling), learning practice (Practice), reflection on learning (Reflection), and subsequent learning innovation (Innovation) [4,9]. At the introduction stage, students explain in general the learning plans that have been prepared including: learning implementation plans, teaching materials, learning media, student worksheets, and assessments used. At the modeling stage, lecturers and tutors provide modeling of learning practices and are followed by students according to previous learning planning. In the practical stage, students in real teaching carry out the learning process in class authentically according to the modeling that has been done previously [3,6].

After practice, students, lecturers and tutors reflect by following the conference pattern. This activity is called reflection. In this case, students are asked to reveal their strengths, weaknesses/obstacles faced in learning, and future innovation plans for continuous improvement. The final stage of the IMPRECI model is innovation. Through the results of the reflection carried out, it is hoped that students will be able to carry out continuous improvement innovations in the subsequent learning process. Likewise, lecturers and tutors are expected to be able to carry out continuous improvement innovations in subsequent guidance. Thus, through the implemented IMPRECI model, it will be possible to produce prospective teachers and reflective supervisors who focus on continuous improvement in the learning process and mentoring process.

## 2 Research Method

This type of research is Classroom Action Research (CAR) with the C-NAR (Collaborative Nested Action Research) approach. Students, lecturers, and tutors continue to make continuous improvements, where students continue to make improvements in learning, while lecturers and tutors make improvements in guidance [5]. The stages used in the research follow the DIOR pattern, namely: Design, Implementation, Observation, and Reflection) [1].

The techniques used to collect research data are through questionnaires, observation and documentation. The instruments used in the research were questionnaires, observation sheets, and documentation completeness checklists. The research data analysis technique is quantitative and qualitative descriptive data analysis. Field test data is processed using scores and categorized qualitatively. Field test data were analyzed using a qualitative data analysis flow model starting from data reduction, data presentation, to drawing conclusions.

## 3 Result and Discussion

### 3.1 Result

Collaborative research was carried out following the DIOR stages in 3 independent learning cycles at the Pre-service PPL PPG. Students are asked to fill in a reflective journal which contains the following: (1) problem, (2) design, (3) implementation, (4) observation, (5) reflection, and (6) innovation. A snapshot of the mentoring process can be seen in Figure 1 below.

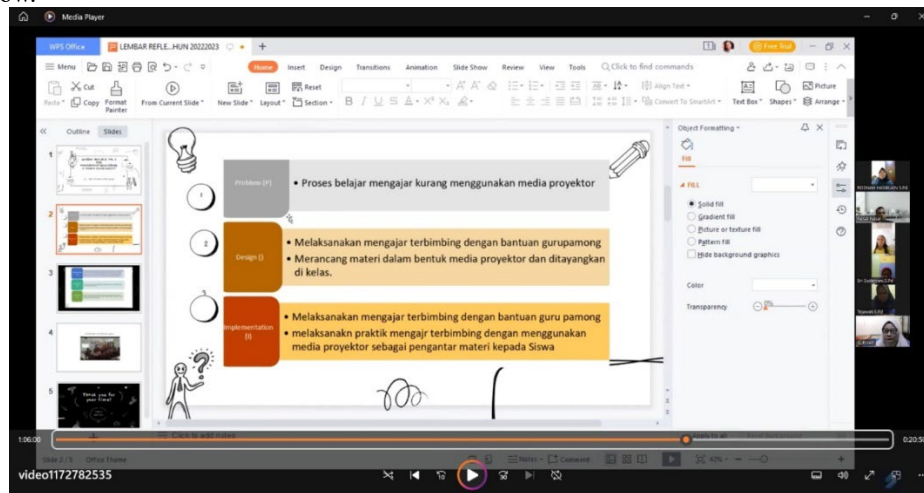


Fig. 1. Reflective Journal on IMPRECI Model Guidance

The results of reflection journals by 3 students in 3 learning cycles can be explained in the following description.

#### A. DIOR Pattern Cycle I

The research subjects were 3 students guided by PPL-2 PPG Pre-Service Universitas Negeri Medan. Description of the implementation of the DIOR pattern by 3 students in cycle I is as follows.

**Table 1.** DIOR Pattern of First Cycle I Students

<i>Problem</i>	There are Several Students who are Lagging Behind other Friends
<i>Design (D)</i>	Designing learning by paying attention to students' initial abilities and preparing various materials or assignments by adjusting students' initial abilities
<i>Implementation (I)</i>	Carrying out learning by paying attention to students' initial abilities and presenting a variety of material or assignments by adjusting students' initial abilities
<i>Observation (O)</i>	During the teaching process, I was able to master the class and the learning process was more conducive because each student was able to do their assignments
<i>Reflection (R)</i>	<i>Strengths:</i> in the learning process I am patient in dealing with students who are overactive in class. <i>Disadvantages:</i> I don't master the class and don't understand teaching strategies. <i>Improvement plan:</i> I will consult again with the GP to ask for input and suggestions regarding class mastery strategies and strategies in the teaching process.
<i>Innovation</i>	Use of effective teaching strategies and use of media that is easy for students to understand

**Table 2.** Student DIOR Pattern 2 Cycle I

<i>Problem</i>	Ineffective Time Management and Class Mastery
<i>Design (D)</i>	Design learning by preparing lesson plans carefully and mastering them well
<i>Implementation (I)</i>	Learning takes place more conducive when I carry out learning according to the steps in the lesson plan
<i>Observation (O)</i>	Even though learning is going according to plan, mastering the class is still an obstacle for me
<i>Reflection (R)</i>	<i>Strengths:</i> (1) I am able to choose the right learning media to achieve learning goals, (2) I have good communication and closeness with students, and (3) I am able to control my emotions well during learning. <i>Disadvantages:</i> (1) I feel I am still inadequate in conditioning the class. (2) I am still not able to manage my time effectively and efficiently in learning. <i>Improvement plan:</i> in the next lesson I will prepare a lesson that will attract more student interest in learning.
<i>Innovation</i>	In the future, I will try to integrate digital technology in learning, such as creating e-Student Worksheets which students can access at home using their respective gadgets.

**Table 3.** DIOR Pattern of Students in 3 Cycle I

<i>Problem</i>	Participants have diverse characteristics, lack of efficient time management, and lack of mastery of learning syntax
<i>Design (D)</i>	Designing learning using a problem based learning model using assignment, observation, question and answer and discussion methods
<i>Implementation (I)</i>	Carry out independent teaching practices using PBL and technology-based models
<i>Observation (O)</i>	During the teaching process I had not succeeded in mastering the class and my teaching techniques were still not appropriate according to the

	Learning Implementation Plan. In the learning process, I didn't quite master the distribution of time starting from the introduction, main activities, and conclusion
<i>Reflection (R)</i>	<i>Strengths:</i> I am patient in dealing with students who are overactive in class. <i>Disadvantages:</i> I don't master the class and don't understand teaching strategies. <i>Improvement plan:</i> I will consult again with lecturers and tutors to ask for input and suggestions regarding class mastery strategies in the learning process
<i>Innovation</i>	Improvements are needed in mastering teaching strategies and mastery of classes as well as learning media that is easily understood by students

#### B. DIOR Pattern Cycle II

The results of the reflection on the application of the DIOR pattern in cycle II by 3 Pre-Service PPG students are as follows.

**Table 4.** Student DIOR Pattern 1 Cycle II

<i>Problem</i>	Not Yet Able to Master the Class
<i>Design (D)</i>	Designing learning by preparing ice breakers so that students' kinesthetic needs are met
<i>Implementation (I)</i>	Utilizing media (infocus) as a medium that will display videos that students will follow
<i>Observation (O)</i>	During the teaching process, it turns out that doing ice breaking makes students enthusiastic, interested and focused on learning. However, there is a problem, where learning resources are focused on students' books, so they do not use a variety of sources in exploring information
<i>Reflection (R)</i>	<i>Advantages:</i> no favoritism, not forcing your will, and patient. <i>Disadvantages:</i> too patient so some students are spoiled. <i>Improvement plan:</i> I will consult again with lecturers and tutors regarding the use of varied learning resources.
<i>Innovation</i>	The use of learning resources is more varied so that students can express ideas from different perspectives

**Table 5.** Student DIOR Pattern 2 Cycle II

<i>Problem</i>	Class Control is Still Not Conducive
<i>Design (D)</i>	Designing learning by preparing learning media that attracts students' interest in learning
<i>Implementation (I)</i>	Learning takes place more conducively when I present learning media that attracts students' interest
<i>Observation (O)</i>	Even though learning is going according to plan, the learning objectives are still not achieved classically
<i>Reflection (R)</i>	<i>Advantages:</i> (1) I am able to choose the right learning media to attract students to learn. (2) I have a good and close relationship with students. (3) I am able to control my emotions well during learning. <i>Disadvantages:</i> (1) The learning media that I present is still not appropriate for achieving learning objectives. (2) I am still not able to manage my time effectively and efficiently in learning. <i>Improvement plan:</i> in the next lesson I will prepare a lesson that is interesting and in line with the learning objectives to be achieved.

<i>Innovation</i>	From now on, I will try to provide more meaningful learning for students
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**Table 6.** Student D-I-O-R Pattern 3 Cycle II

<i>Problem</i>	Class Mastery is Not Yet Optimal
<i>Design (D)</i>	Designing group-based learning and dividing the roles of each student
<i>Implementation (I)</i>	Carrying out learning using a group-based PBL model by facilitating students to play an active role in learning
<i>Observation (O)</i>	Class mastery has begun to be well conditioned. However, there are several groups that are still dominated by only a few people in discussions so that students are not evenly active
<i>Reflection (R)</i>	<i>Strengths:</i> (1) I am patient in dealing with students who are overactive in class. <i>Disadvantages:</i> not yet able to activate the role of students evenly so that learning is only dominated by a few students. <i>Improvement plan:</i> increasing the participation of students who are not yet active in learning so that there is an even distribution of participation in discussions
<i>Innovation</i>	Designing learning that facilitates students having the same role in learning. The alternative proposed is jigsaw type cooperative learning involving all students as an expert group

### C. DIOR Pattern Cycle III

The results of student reflection following the DIOR pattern can be described clearly in Table 3 below.

**Table 7.** Student DIOR Pattern 1 Cycle III

<i>Problem</i>	Lack of Reading Sources for Students
<i>Design (D)</i>	Designing learning by preparing reading materials from various sources and various forms to help students understand from various points of view
<i>Implementation (I)</i>	Teachers provide reading materials in various forms of videos, charts, PPTs, or short summaries to help students understand the material.
<i>Observation (O)</i>	When teaching, students are asked to write down material from various sources such as cellphones or videos shown via Infocus. In this case, learning is felt to be effective and successful in learning.
<i>Reflection (R)</i>	<i>Strengths:</i> fair, has a great sense of responsibility, and sincere. <i>Disadvantages:</i> sometimes feel lazy. <i>Improvement plan:</i> focus on improving continuous classroom mastery
<i>Innovation</i>	Developing creative and fun learning by actively involving students

**Table 8.** Student DIOR Pattern 2 Cycle III

<i>Problem</i>	Learning Objectives are Still Not Achieved
<i>Design (D)</i>	Designing learning by preparing interesting and meaningful learning for students
<i>Implementation (I)</i>	Learning takes place smoothly and meaningfully so that learning objectives can be achieved
<i>Observation (O)</i>	Even though learning is going according to plan, the classroom

<i>Reflection (R)</i>	atmosphere is not conducive <i>Advantages:</i> (1) I am able to choose the right learning media to attract students to learn. (2) I have a good and close relationship with students. (3) I am able to control my emotions well during learning. <i>Disadvantages:</i> (1) Classes that are not conducive are again an obstacle for me. (2) I am still not able to manage my time effectively and efficiently in learning. <i>Improvement plan:</i> In the next lesson I will prepare an interesting lesson and learn to understand the students' character.
<i>Innovation</i>	From now on, I will try to provide learning that suits the interests and needs of each student.

**Table 9.** Student DIOR Pattern 3 Cycle III

<i>Problem</i>	The distribution of student roles in discussion groups is not balanced. Learning is only dominated by a few people.
<i>Design (D)</i>	Designing learning with a learning design using a Jigsaw type cooperative model
<i>Implementation (I)</i>	Penguatan pembelajaran dengan menerapkan model kooperatif tipe Jigsaw di kelas. The class was divided into 5 groups by dividing each role as an expert group
<i>Observation (O)</i>	Learning is going well and students are starting to see an even distribution of participation in learning because they have the same tasks and responsibilities in learning
<i>Reflection (R)</i>	<i>Strengths:</i> (1) The learning objectives went well. (2) I began to understand the characteristics of diverse students. (3) Students begin to feel emotional about me as a teacher in teaching <i>Disadvantages:</i> (1) There are some students who are not proficient in explaining material to other students. (2) There are still some students who are shy about explaining the material to their friends. <i>Improvement Plan:</i> continue to implement learning that actively involves students individually and in groups in learning.
<i>Innovation</i>	Creating varied learning, especially in facilitating active students in group learning and discussions

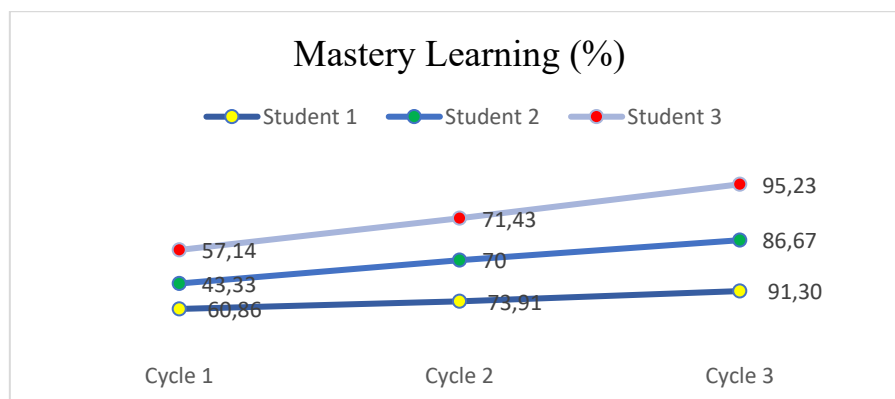
The completeness of learning outcomes in each cycle by 3 students can be described in Table 10 below.

**Table 10.** Student Learning Results in the Implementation of Pre-Service PPL PPG

No	Student	The Number of Students	Cycle I		Cycle II		Cycle III	
			Complete	Not Completed	Complete	Not Completed	Complete	Not Completed
1	Student 1	23	14 (60.86%)	9 (39.14%)	17 (73.91%)	6 (26.09%)	21 (91.30%)	2 (8.70%)
2	Student 2	30	13 (43.33%)	17 (56.67%)	21 (70.00%)	9 (30.00%)	26 (86.67%)	4 (13.33%)

3	Student 3	21	12 (57.14 %)	9 (42.86% )	15 (71.43% )	6 (28.57%)	20 (95.23 %)	1 (4.7 %)
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The acquisition and completion of learning outcomes in each cycle can be seen in Figure 2 below.



**Fig. 2.** Student Learning Completeness in Pre-Service PPL PPG

Based on the data in Figure 3 above, several things can be explained as follows: (1) Student 1 succeeded in carrying out learning with learning completeness in Cycle I of 60.86%, Cycle II of 73.91%, and Cycle III of 91.30%. (2) Student 2 successfully carried out the learning process with learning completeness in Cycle I of 43.33%, Cycle II of 70%, and Cycle III of 86.67%. (3) Student 3 succeeded in carrying out the learning process with learning completeness in Cycle I of 57.14%, Cycle II of 71.43%, and Cycle III of 95.23%. Referring to the research findings, it can be concluded that the implementation of collaborative research using the C-NAR approach in the form of reflective guidance using the IMPRECI model was successfully implemented in the implementation of Pre-Service PPL PPG at Universitas Negeri Medan.

### 3.2 Discussion

A mentoring program is said to be successful, marked by the following indicators: (a) it has succeeded in achieving the mentoring objectives, (b) it actively involves participants, (c) it provides an interesting experience, and (d) have the availability of adequate learning facilities. Furthermore, a limitation is given that the success of a program can be said to be at least in the good category [1,2,7].

The results of research conducted on 3 PPG Pre-service students achieved success in the 3rd cycle with the following data distribution: (1) learning success by student 1 obtained a completion percentage of 91.30% in the Very Good category; (2) student 2's learning success obtained a completion percentage of 86.67% in the Very Good category; and (3) student 3's learning success obtained a completion percentage of 95.23% in the Very Good category. When compared with the success indicators stated above, it can be concluded that the results



of the reflective guidance carried out exceed the minimum standards that have been set. Because of this, it can be concluded that the IMPRECI model used to produce prospective teachers and reflective supervisors in elementary schools has been successful.

## 4 Conclusion

The results of reflective guidance using the IMPRECI model as an effort to produce prospective teachers and reflective supervisors in the Medan State University Pre-Service PPL PPG program can be detailed as follows: (1) Student 1 succeeded in carrying out learning with learning completeness in Cycle I of 60.86%, Cycle II of 73.91%, and Cycle III was 91.30%. (2) Student 2 successfully carried out the learning process with learning completeness in Cycle I of 43.33%, Cycle II of 70%, and Cycle III of 86.67%. (3) Student 3 succeeded in carrying out the learning process with learning completeness in Cycle I of 57.14%, Cycle II of 71.43%, and Cycle III of 95.23%. Based on this data, it can be concluded that the implementation of continuous classroom action research using the C-NAR approach was successful as expected. Thus, the IMPRECI model deserves to be considered as an effective model in producing prospective teachers and reflective supervisors as an effort to produce prospective teachers and reflective supervisors, especially in the implementation of Pre-Service PPL PPG in Indonesia.

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