

## **Role Playing and the Changing of Teacher Understanding to Middle School Mathematics Lesson Planning within ELPSA Framework**

Indira Puteri Kinasih<sup>1</sup>, Nur Hardiani<sup>2</sup>

<sup>1, 2</sup>Mathematics Education Department, Faculty of Education and Teacher Training, UIN Mataram, Jl. Gajahmada, Sekarbela, Mataram, Indonesia  
Email: [indiraputeri@uinmataram.ac.id](mailto:indiraputeri@uinmataram.ac.id)

### **Abstract**

The lesson plan plays an important role in the achievement of learning objectives. This paper aimed to describe the effect of lesson plan role play on changes in teacher understanding regarding the process of mathematics lesson plan writing using the ELPSA framework. The method used was descriptive qualitative. 13 West Nusa Tenggara math teachers were involved through filling out questionnaires about the lesson plan writing habits among teachers, the usefulness of role-playing, and the impact on the lesson plan improvement process they designed. Results showed that the lesson plan role play was able to change the teacher's understanding, particularly on the importance of clear and communicative lesson designs as well as the sequential and anticipatory learning scenarios included. This change in teachers' understanding also has an impact on the awareness of teachers to improve their draft lesson plan in terms of integrated learning indicators, sequentialness, and the content quality of learning activities and clarity of teaching notes that allow the lesson plan to be more explicit and applicable. Overall, it can be concluded that more than 95% of the teacher respondents stated that role play had a positive influence in the form of a willingness to re-reflect and reconstruct each lesson plan. In general, they gain knowledge and awareness about how to build a good lesson plans so that they have the potential to create activities and an atmosphere of teaching and learning that are interactive, focused, and pay attention to what students already know.

**Keywords:** Lesson Plan, Role Play, ELPSA Framework

### **Abstrak**

Makalah ini mendeskripsikan dampak peragaan (role play) rancangan pelaksanaan pembelajaran (RPP) terhadap perubahan pemahaman guru mengenai proses penulisan RPP Matematika SMP berkerangka kerja ELPSA. Metode yang digunakan adalah kualitatif deskriptif. 13 Guru matematika NTB dilibatkan melalui pengisian angket mengenai budaya penulisan RPP di kalangan guru, kemanfaatan role playing, serta dampaknya terhadap proses perbaikan RPP yang mereka rancang. Hasil penelitian menunjukkan bahwa role play RPP mampu mengubah pemahaman guru mengenai pentingnya rancangan RPP yang jelas, komunikatif, terperinci dan memuat skenario pembelajaran yang terurut dan antisipatif. Perubahan pemahaman ini juga berdampak pada kesadaran guru untuk memperbaiki rancangan RPP mereka dalam hal keterpaduan indikator, keterurutan dan bobot konten kegiatan pembelajaran serta kejelasan catatan pengajaran yang memungkinkan RPP menjadi lebih eksplisit dan aplikatif. Secara keseluruhan dapat disimpulkan bahwa lebih dari 95% responden guru menyatakan bahwa role play telah membawa pengaruh positif berupa kemauan untuk kembali merefleksi dan merekonstruksi RPP masing-masing. Secara umum, mereka memperoleh pengetahuan dan kesadaran tentang bagaimana seharusnya membangun RPP yang baik sehingga berpotensi menciptakan aktivitas dan suasana belajar-mengajar yang interaktif, fokus, dan memperhatikan apa yang sudah diketahui siswanya.

**Kata kunci:** Rancangan Pelaksanaan Pembelajaran (RPP), Role Play, Framework ELPSA

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## **INTRODUCTION**

Lesson planning is a primary skill that must be mastered well by teachers. Since whenever each teacher can design and write the learning design independently with an ordered and detailed structure,

then it is likely that they can teach better and be able to lead students to achieve the expected goals. This is in line with the results of the study of Panasuk and Todd (2005), who explained that the lesson plan is a guide that is expected to help teachers in teaching students. The importance of developing creative learning plans and supported by pedagogical skills and mathematical content was also discussed by Emre and Yazgan (2018).

The urgency of the preparation of lesson plans is formulated in the Minister of National Education Regulation number 22 in 2016 and Minister of Education and Culture Regulation number 81A in 2013. Based on these regulatory documents, the preparation of the lesson plan is a physical manifestation of the realization of the learning planning stage. The learning planning stage is the first stage in the standard process before implementing the learning process, evaluating learning outcomes, and monitoring the learning process (Bailey,2015). The lesson plan is intended to guide the teacher in helping students achieve the expected learning goals, as described in the following quotation:

*Every educator in the education unit is obliged to prepare a complete and systematic lesson plan so that learning takes place interactively, inspiratively, fun, challenging, efficient, motivating students to participate actively, as well as providing sufficient space for initiative, creativity, and independence in accordance with their talents, interests , and the physical and psychological development of students. (Permendiknas RI no.22 year 2016, page 6th)*

This means that the design of lesson plans is an absolute obligation for every teacher since lesson plans are an important part of the whole set of process standards as a form of national education minimum standard. This professional awareness should be built in every teacher and supported by the commitment of all government agencies, especially those directly related to the education sector and, of course, by teacher training institutions that are expected to be able to produce professional teachers in the future.

Research on learning design has been going on for more than three decades. John (2006) introduced a dialogical model as an alternative to planning the learning process. This model not only emphasizes the lesson plans that are generated but also pays attention to the process that teacher candidates go through in practicing designing a learning process. John revealed that the practice of planning is as important as the practice of teaching. The dialogic model is considered capable of exploring the context and, at the same time, making planning activities a means of teaching practice. This process is the key to developing a reflective culture among teachers.

A dialogic model in writing learning designs was also initiated by Zazkis (2017). The test examples of conventional lesson plan models, analyze the characteristics and opportunities to what extent lesson plans with models like this can positively influence learning. As a counterpoint, they then introduced the concept of 'Lesson Play,' where the teacher was invited to compile a learning scenario represented in the form of dialogue or conversation between the teacher and students. This

concept is offered as a means to support lesson preparation. Besides being able to be used to teach a topic, the concept of lesson play is also claimed to be able to be a learning tool for teachers. Lesson play is a teaching plan concept that contains quite a lot of productive questions aimed at guiding students to understand the mathematical topics presented. This concept seems to be in line with Reigeluth (1999) explanation of instructional design theory. He wrote that to develop cognitive skills, and instructional design must contain (1) clear information, (2) meaningful training, (3) Informative feedback, (4) and includes appreciation and motivation.

Li, Chen, and Kulm (2009) studied how teachers in China developed lesson plans for the topic of fraction division. They collected and analyzed four lesson plans designed by six teachers from 6 different elementary schools. The elementary school teachers turned out to pay great attention to several important aspects of the lesson plan, such as content, process, and student learning. They also found that there are common similarities in the general features of the lesson plan. Differences are identified in several detailed instructions and learning approaches used.

Several studies have discussed the use of role-playing techniques for several different purposes. Krebt (2017) investigated the impact of role-playing on the English speaking skills of college students in Iraq. His research concluded that the use of role-playing provided a significant increase in students' English language skills. Pouragha, Ghazivakili, Norouzinia, & Pakravan (2019) integrate lectures and role play in the field of medical education to pursue meaningful and efficient learning processes. This integration is known to increase students' understanding of the course material provided. The use of role-play has also been applied to learning English, especially in practicing fluency in gathering vocabulary (Alabsi, 2016). Based on previous research that has been described, research on role-play to dissect a learning implementation plan that has been written by mathematics teachers is known to be very limited. This study attempts to utilize role-play to help teachers reflect on the learning designs they have written. We do a role play or role play as a teacher who will utilize a learning plan. The role in question is the role when the teacher is studying and trying to understand the lesson plan for tomorrow's teaching provision.

### ***Research Context***

This research is part of an education program entitled Promoting mathematics engagement and learning opportunities for disadvantaged communities in West Nusa Tenggara (NTB), Indonesia. This program is packaged in a research collaboration project called GPF (Government Partnership for Development), which aims to develop the capabilities and understanding of mathematics teacher's content and pedagogy. One of the efforts made is to equip teachers with the knowledge and skills to design mathematics learning using the ELPSA framework.

ELPSA is an acronym of the five stages of student learning, namely Experience, Language, Pictorial, Symbol, and Application. These five components are cyclic, ordered, repeatable, but not

random. An example of the use of the ELPSA framework in the Numbers Pattern material is included by Lowrie & Patahuddin (2015) to provide an introduction and overview of ELPSA and its application in mathematics learning. Patahuddin, Puteri, Lowrie, Logan, and Rika (2018) and Febrilia & Patahuddin (2019) have also exemplified how a mathematical topic, in this case, the Linear Equation of One Variable and triangle, is presented and taught using the ELPSA framework to then be analyzed the level of student involvement during learning. The discussion on ELPSA was again reviewed in the material of the Triangle (Febrilia & Winarti, 2018) to see the extent of students' understanding of the material. All learning plans in the study are designed with detailed and explicit instruction patterns.

This four-year program is aimed at mathematics teachers who teach in remote areas of NTB. During the second year, 22 of the 38 teachers participating in the project had the opportunity to learn and explore ELPSA comprehensively at the University of Canberra (UC) for one month. This program is hereinafter referred to as UC professional development (UC PD). This project is in collaboration with IKIP Mataram as an in-country implementation partner and also involves DIKPORA, LPMP, and KEMENAG NTB as project partners.

One of the core activities at UC PD is reviewing lesson plans designed and written by teachers while in Indonesia. This activity is intended to assist teachers in revisiting their learning design in terms of clarity of explicit instructions, compatibility between basic competencies, indicators, and learning activities, consistency of terminology, and the detail and variety of learning activities contained in the lesson plan. In addition, the sequence of learning based on the ELPSA framework is also one of the focus of the review. Two mathematics education experts helped with the review activity by conducting a demonstration (role play) of learning based on one of the lesson plans that was being developed in the second year. The role play conducted by this expert is intended to seek to change the mindset of teachers towards the process of preparing lesson plans as a preparation for their teaching activities, and this is the focus of this research. So, this research can be known about stages of implementing lesson plan role play and the impact of the demonstration of learning design (role-playing) on the mindset and understanding of teachers regarding the writing of lesson plans.

## **METHODS**

This research is a descriptive qualitative research that reveals the process of implementing role play by two mathematicians to help junior high school mathematics teachers build their critical thinking patterns towards the instructional design that has been prepared. This activity utilizes one lesson plan written by the teacher. An expert acts as a teacher who is studying the lesson plan. She tried to understand the sequence of activities in the lesson plan before teaching activity. Another expert acts as a fellow teacher who becomes a partner of discussion and brainstorming.

### ***Participants***

The participants of this study were 13 mathematics teachers, consisting of 6 female teachers and seven male teachers, who came from Mataram, Central Lombok, East Lombok, North Lombok, West Sumbawa, and Sumbawa. The teachers are part of the 22 teachers selected to take part in a one-month teacher professional development program at the University of Canberra, Australia. Based on the school structure, participants come from different places of teaching. Nine teachers teach in public junior high schools while four other teachers come from public/private MTs, to be exact two teachers from private Madrasahs, one teacher from public madrasah, and one teacher from private SMPKs. A total of 8 teachers are senior teachers who have experienced teaching for more than ten years, while five other teachers are still classified as beginner teachers with teaching experience under five years.

Having been involved in the project for approximately 1.5 years, participants have been encouraged and actively involved in the process of writing the junior high school mathematics lesson plan with the ELPSA framework. Before being dispatched to UC, participants were asked to compile a 40-minute lesson plan that focused on one of the five topics being developed, namely algebraic factorization, a two-variable linear equation system, functions, statistics, and curved side space. The construction of the ELPSA learning design prioritizes several main things, namely clear and specific indicators according to the provisions of basic competencies, clarity of the learning activity flow, and carefulness in determining weighty mathematical activities. In addition, another distinctive character is the optimization of the teaching notes column as a teacher's guide to remembering crucial things such as important questions that can be asked, possible student answers, alternative teacher anticipatory actions, and notes to give particular emphasis to critical parts of mathematical content that are is being taught. The teachers proceed from time to time in learning the construction. This requires an effort that is not easy. Indirectly the teacher is slowly invited to leave the normative lesson plan pattern by trying to look back at the identified needs, strengths, and weaknesses and build innovative learning designs that are able to enliven the learning atmosphere in the classroom and enable students to be actively involved.

### ***Data Collection***

Data collection is done by observing video recordings of role play and analyzing the transcript. Role play is one of the activities in the NTB Middle School mathematics teacher professional development program held at the University of Canberra, ACT, Australia. This activity is carried out in class by arranging a 'round table' table. There are 6 round tables, which are filled by 4-5 teachers. Role play activities are recorded using two camera units, each from two different angles, namely the right and left sides of the class. The role play video is 1 hour, 58 minutes long. This video is then played back to be transcribed so that the dialogue can be observed and analyzed.

Other data collected is teacher self-evaluation data. This data was obtained through a

questionnaire filled out by 13 teachers shortly before the training program ended. The questionnaire was intended to measure how much the impact of the Professional Development (PD) program affected the development of mathematics content skills and teaching skills of teachers. Specifically, the self-evaluation questionnaire consisted of 13 items of questions regarding the usefulness of PD programs, favorite activities during PD, perceptions of teachers regarding their ability to improve classroom action research, perceptions of focus group discussion activities, perceptions of lesson plans, and their impressions of the usefulness of role play activities. This instrument was developed by the UC team in collaboration with a team of mathematics education experts from Indonesia. The items of questions involved in this paper are five items that specifically explore lesson plans and role play. The five questions are elaborated as follows:

- [Linear / Likert scale type] Before joining the GPFD program, do you always prepare lesson plans before teaching?
- [Percentage type] Before participating in the GPFD project, how did you obtain the lesson plans that you used in classroom teaching? Fill the percentage in each box so that you get 100%.
- [Linear / Likert scale type] ROLE PLAY: Ibu Sitti and Ibu Rahmah demonstrate how to understand the lesson plan "simple function graph". Dr. Sitti acts as a beginner teacher, while Dr. Rahmah plays a critical friend. To what extent are the demonstrations useful? Choose one of the following answers.
- [Essay type] What changes have occurred to you about the preparation of the lesson plan after participating in the role play? Explain.
- [Essay type] What effect will this change of understanding have on your lesson plan improvement efforts?

The teacher fills out this questionnaire through the Qualtrics system which is an online survey platform managed by the University of Canberra. The results of the questionnaire are then downloaded through the system database to be recapitulated and analyzed.

## **RESULTS AND DISCUSSION**

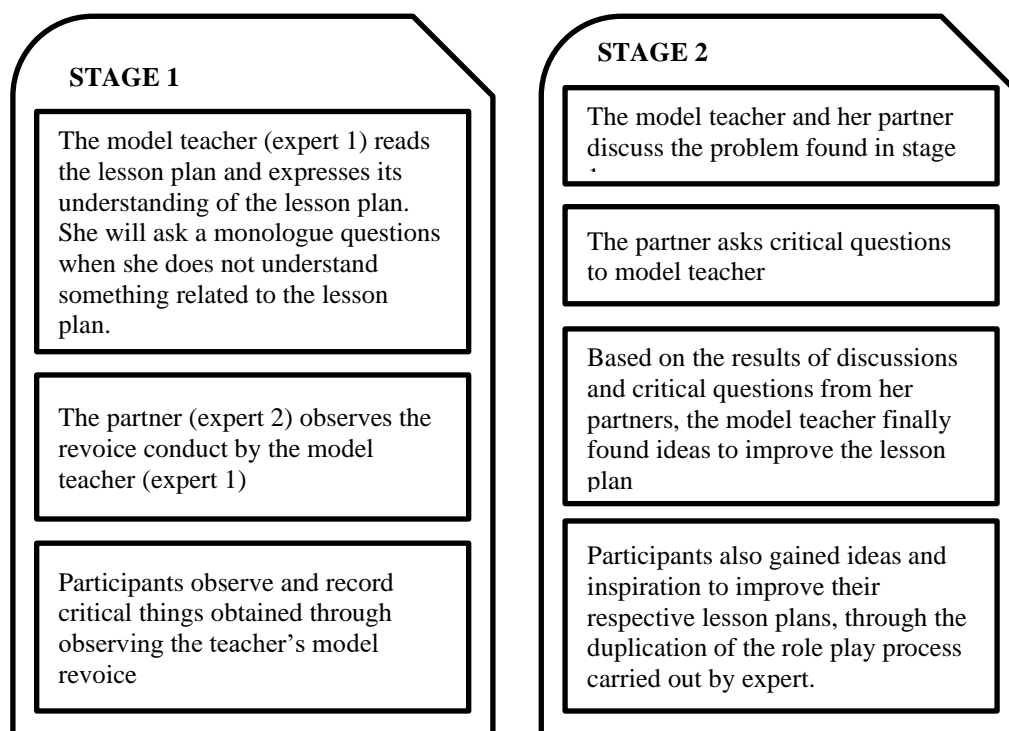
This section contains results or research data, analysis of research data, answers to research questions, and analysis of findings during research.

### ***Implementation of Role play: 'Drawing a Simple Function Graph'***

During the UC PD session, participants were invited to review the lesson plans they had compiled based on a demonstration of teaching designs conducted by experts. This demonstration is intended to dissect the lesson plan step by step so that the teacher is able to get a picture of the clarity, suitability of the contents and indicators, as well as the detail of the flow of activities. There are two

mathematics education experts involved in this demonstration. One expert acts as a model teacher who will read, interpret, and carry out teaching based on the existing lesson plans, another expert act as a friend who gives critical questions to the model teacher during the teaching interpretation and demonstration process. During the process, all participants acted as participants who followed and observed the demonstration and noted the critical things that were considered important to be an improvement in their lesson plans.

The lesson plan selected for analysis is a draft lesson plan on the topic of functions, especially on the basic competencies of drawing simple function graphs. This lesson plan has been identified as still having relatively general objectives, the structure of learning activities that are not yet neatly arranged and clear (Simon, Kara, Placa, & Avitzur, 2018). The basic competence in this model lesson plan is to sketch a graph of simple algebraic functions in a Cartesian coordinate system. Learning objectives or indicators that are expected to be achieved by students are able to draw graphs of functions at cartesian coordinates.



**Figure 1.** Illustration of lesson plan role play by 2 mathematics education experts to help teachers review the ELPSA lesson plan.

Role play is divided into two stages. In the first stage, the model teacher displays the lesson plan and reads back every part of the lesson plan, from beginning to end, including basic competencies and indicators. The model teacher reads the lesson plan as if he is digesting and understanding every sentence and sequence of learning that he will use to teach. The assumption is that the lesson plans being reviewed are lesson plans prepared by others, not the results of their own writing. The model teacher starts by reading the indicators written on the lesson plan. At this stage,

there is confusion regarding the type of function referred to by the lesson plan writer. Indicators are not enough to explain specifically about what functions are expected to be able to be drawn by the students.

### Lesson Plan – Drawing Simple Linear Function Graphics

School Level : Junior High School  
 Subject : Mathematics  
 Year/Semester : 8/1  
 Topic : Relation and Function  
 Time Allocation : 1 x 40 minute  
 Basic Competencies : Sketching Simple Algebra Function Graphs in the Cartesian Coordinate System







Learning objective/Indicator :  
 Draw graphs of functions on Cartesian coordinates

Methods/Learning Approach :  
 Discussion, Q&A and Demonstration.

Learning Media & Sources  
 1. Student Worksheet  
 2. Whiteboard cartesius  
 3. Pen and paper

**Figure 2.** Lesson plan model snapshot that explains the material identity, basic competencies, indicators, methods, and learning resources

1. Introduction (±10 minutes)

Indicator	Activities	Teaching Notes (Including explanation & Questions)
Describe learning objective 		Teacher's explanation : 
Review <ul style="list-style-type: none"> <li>o Students sit in a group</li> <li>o Hands on the learning manipulatives needed during the learning process</li> </ul>	Today, we will learn about how to sketch a graphic of a linear function in Cartesian coordinate. We will conduct a demonstration using Cartesian board to graph a function. You should have known and seen a Cartesian coordinate, since you already learn about it in the elementary school or in our previous meeting.  <b>Teacher asks questions:</b> 	Students must raise their hand before answering the question  
Ask students to work individually on answering teacher's question. It is to measure previous students' knowledge, before start to learn about how to make a function value table.	<ul style="list-style-type: none"> <li>❖ in elementary school you already know how to draw an ordered pair in the Cartesian plane. Now try to write down the ordered pairs from the following picture, then write 5 other ordered pairs according to each of you and draw on the Cartesian plane.</li> </ul> 	Question example :

**Figure 3.** Introductory part of the lesson plan model





*"My students must be able to draw graphs of functions at cartesian coordinates. Which function? Many ..., time functions ...? I learned in college. Linear function, quadratic function, cubic function? "*

In the preliminary activities section, the model teacher again had difficulty in obtaining a description of the teaching aids suggested in the lesson plan. In the learning tools and materials section, only a white board cartesius is written, with no explanation or appendix that explicitly states what the intended teaching aid looks like.

*"Oh, I have to classify my students. Then I have to share all the props. Okay, what's the display tool? Let me see. Ouch confused! I don't know which tool? I don't know the white board cartesius? Ouch, I'm confused ...!"*

In the core activities of the lesson plan model, there are instructions that ask students to draw a graph of the functions contained in the worksheet. When reading these instructions, the model teacher submitted a monologue statement: *"Wow, these students have not been taught how to draw graphs? Directly asked to draw"*. Based on the lesson plan model, we can also identify that there is no part that instructs the teacher to explain the concept of functional graphs. In this case students are directly directed to solve problems or problems on the worksheets provided.

2. Core Activities (±30 minutes)		
Indicator	Activities	Learning Notes (Including explanation & questions)
<b>Drawing graph of a function in Cartesian coordinate</b>	Teacher gives an explanation of what will be done in drawing graphs of functions at Cartesian coordinates activity	 <p>Teacher explain :</p> <p style="text-align: center;"><b>L</b></p> <p>Alright, you guys have solved the problem to determine the point of the ordered pair in the Cartesian coordinates. Next is to draw a graph of functions on the Cartesian coordinates with the help of the Cartesian board that has been provided</p>
	 <p><b>Group discussion</b></p> <p>Distribute worksheets to students to be discussed in groups</p> <p>Students complete worksheets and the teacher monitors student progress</p>	<p><b>Teacher gives an explanation</b></p> <p>Alright, please see the LKS that has been shared and please answer what was asked in the LKS. If there are difficulties please ask questions to the mother, and after completion we will discuss the results together.</p>

**Figure 4.** Snapshot of the core activities of the lesson plan model.

Students are also asked to demonstrate graphical forms based on existing functions by utilizing cartesian coordinate boards, nails, and rubber bands. The function graph will be formed by a rubber band attached to a nail embedded in the board. In this case, the spikes act as coordinate points or

sequential pairs of domains and range functions. After trying to do the simulation, the model teacher can understand the purpose of the function graph demonstration, but there is a concern that the rubber band will actually obscure the concept of a straight line because the rubber band attached to a nail will not precisely form a straight line, but will instead form an area bounded by two sides of a rubber band. The model teacher is worried that there will be a misconception in students regarding the function graph, especially for linear functions. During the first phase, the model teacher pair tried to follow the revoice process carried out by the model teacher and noted the crucial things mentioned.

The second stage of role play is a part when a friend or partner of the model teacher asks a number of questions related to the construction of the lesson plan and the understanding that the model teacher receives after reading all the instructions in the lesson plan. Both of them discussed the details of indicators and the clarity of types of functions that will be presented in the lesson plan model as stated by González, Gómez, and Pinzón (2018) that a learning plan should be specific, detailed, in accordance with the material to be conveyed. The discussion focused on things Some important agreements reached in the paired discussion are (1) The function graph to be taught the linear function graph; (2) the form of the linear function referred to is, and ; (3) lesson plan indicators are reconstructed to be more detailed and clear; (4) Because of the detail and clarity of indicators, there is the potential for teaching duration to be more than 40 minutes so that teachers and students have enough time to explore content and achieve desired learning goals. In addition to exploring the pedagogical side, the process of role play that was carried out indirectly also played a role in developing an understanding of the mathematics content of teachers, especially regarding graphs of linear functions. Because during the role-play, the teachers were invited to review the mathematical concepts discussed in the lesson plan. This fact is consistent with Mena, Hennissen, and Loughran's (2017) exposures about supporting professional knowledge of prospective teachers that can influence the development of mastery of their content.

### ***The Impact of Role Playing on the Mindset and Knowledge of Teachers Regarding the Writing of Lesson Plans***

During this time, based on the statements of several teachers and researchers' observations, lesson plans are more often formulated to meet the administrative requirements of teaching and supplement the formality component to support the career path of teachers. The lesson plan has not been sufficiently seen and understood as a work of learning design that reflects the understanding and enthusiasm of the teacher for the material to be delivered, as well as the willingness of teachers to design learning scenarios that enable the active involvement of learners as well as the readiness of teachers to deliver students towards learning goals and outlined competencies on national education standards.

This fact is supported by the results of a questionnaire that was completed by 13 teachers. More

than 60% of teachers stated that before joining the GPFD program they did not always (sometimes) prepare lesson plans before teaching in class, three teachers claimed to often prepare them, one teacher stated that they always prepared lesson plans, and even one person stated that he had never compiled and prepared lesson plans before teaching. An interesting result is also seen in response to questions about the authority and source of the lesson plan. Six teachers stated that more than 40% of their lesson plans were downloaded from various sources on the internet, eight teachers stated that more than 10% of their lesson plans were obtained from peers and only two teachers dared to state that more than 70% of their lesson plans were prepared independently. The questionnaire data also provides information that almost all teachers stated that the lesson plans generated from the discussion process with colleagues in the MGMP were below 25%. Some teachers also stated that mathematics textbooks are one of the sources of reference used to prepare lesson plans.

The usefulness of role-playing can be reflected through the answers of teachers as more than 95% of respondents stated that role play is very useful for increasing their understanding of the preparation of lesson plans. The teacher describes changes in understanding that occur after role play with a variety of written expressions. They began to realize that learning designs should be able to be more explicit, detailed, include clear and consistent guidelines, in line with indicators and learning objectives, and allow other teachers to be able to use them easily. In addition, teachers gain knowledge that learning activities that are designed should pay attention to students' initial knowledge, containing teacher questions that can help students build an understanding of the concepts to be taught.

One of the teachers had the opportunity to express their opinions directly after the role play was completed, the following is a direct quote of his statement:

*"Based on what Dr. Sitti said earlier, it turns out that compiling the lesson plan looks simple but actually requires deep thought. Why? It turns out that every step we take must have a clear goal. I list what the goal is, then how I am going to achieve that goal and then whatever activities we write there must have meaning"*

The statement can be seen as a turning point that brings knowledge and views on the preparation of the lesson plan at a more critical and essential level. The design of lesson plans began to be realized as the activity of preparing learning scenarios whose components are related to each other. The need for lesson plans that should be able to accommodate the process of teaching teachers in the classroom and provide features that make it easier for teachers to guide students in achieving learning goals are also beginning to be understood.

The results of interviews with two teachers also highlighted several important things. According to one teacher, role play really helped him understand the importance of language consistency or mathematical terminology used so that the confusion and distraction of students in

understanding teacher explanations can be minimized. In addition, he realizes how important it is to design effective and realistic activity strategies so that the expected goals can be achieved.

*“So in preparing the lesson plan everyone should understand the lesson plan that I made. I have paid more attention to mathematical terms that I have been paying less attention to, and the demonstration must be effective with limited time so that what is intended can be achieved”*

One other teacher also believes that role play can provide new knowledge for him, especially in terms of clarity and detail of the teaching steps that must be done, both by the teacher and students. This clarity will later enable other teachers to use and implement the lesson plans they have designed.

*“From this activity I gained new knowledge about how we can prepare lesson plans that will later be used by others to teach. The lesson plan that we make turns out to be really detailed. All activities that we will do in learning must be fully spelled out so that people who use our lesson plans will not be confused. He will know what steps will be taken in the learning process. I was greatly helped by the demonstration, so that I could improve my lesson plans in the ways that were explained in the demonstration activity”*

A very interesting response also emerged when researchers explored further the impact of role playing on the lesson plan he wrote. One of the teachers felt that they understood more about how they should view, study, and revise the lesson plans that were previously designed. He stated explicitly that role play helped to realize that there were parts of the lesson plan that needed to be repaired and reconstructed.

*“I got to know which parts I can improve. Because before the demonstration, I was confused about revising it. I assume that the lesson plans that I have compiled are already good, apparently not at all. There are still many shortcomings. ”*

Teachers' impressions and internalization of role play are also expressed through statements in their social media accounts. The researcher found one statement that reflected the fact that had been normal and reasonable among teachers, namely the copy-paste of lesson plans. The teacher recognizes that the preparation of lesson plans is not something that is easy to do.

*“Reviewing the lesson plan must be careful and clever in choosing words so that they are easily understood by others. A difficult and new job for teachers who always copy and paste lesson plans. After a while enjoy also reviewing the lesson plan. Hopefully there are teachers who want to review the old lesson plan, rather than copy paste it again”*

The implementation of role play has had a major influence on the mindset and point of view of the teacher regarding the writing of lesson plans. This is evidenced from more than 95% of teacher respondents who stated that role play had a positive influence in the form of a willingness to re-reflect and reconstruct each lesson plan. In general, they gain knowledge and awareness of how they should build good lesson plans so that they have the potential to create interactive teaching and learning activities and environments that focus on what their students already know. This is consistent with the presentation of Chizhik and Chizhik (2018), Sullivan, Askew, Cheeseman, Clarke, Momane, Roche, & Walker (2015), and Gravemeijer (2004), that instructional learning should be adjusted to the students' knowledge and thinking so that their mathematical reasoning can develop properly and accurately.

Specifically, the implementation of role play was identified as being able to direct teachers to pay more attention to the clarity of learning indicators and instructions, the sequencing of activities and questions, and the appropriateness of learning objectives with planned activities. The last point is a significant aspect. Based on our observations of some teacher lesson plans that were designed at the beginning of their involvement in the GPFD program, the tendency for discrepancies between learning objectives and learning activities to be carried out was found in almost all lesson plans. This results in a loss of focus on the lesson plan and may result in not achieving the expected learning goals. In this case, role play revives the teachers to always depart from 'what they want to achieve' before designing activities for their students. In relation to the ELPSA learning framework, role play activities have succeeded in bringing teachers to understand how ELPSA should be integrated into the learning design and why this framework is needed to build a creative, innovative learning plan, while still paying attention to the sequence of activities and valuing knowledge student beginning.

In addition, expectations regarding the quality and also independence of the preparation of the lesson plan must be proportional to the availability of basic needs for writing materials such as learning resources, text books, alternative learning activities, and other writing sources that can support the sustainability and quality of learning designs. In this case, the government is expected to be able to attend as a facilitator who is able to meet all of these basic needs.

Teachers need to be encouraged to dare to interact actively in the local, national, and international mathematics teacher community. Teacher involvement in communities such as Mathematics Teacher Deliberations Forum, Center for Development and Empowerment of Mathematics Educators and Education Personnel, mathematics teacher community on social media like Facebook, and NCTM is expected to be able to enrich insights and sharpen teacher intuition in terms of planning, implementing, and learning assessment skills. Teacher participation in the community is certainly not intended to simply exchange lesson plans or take advantage unilaterally by duplicating lesson plans without deep, critical and contextual analysis. However, teachers are expected to find discussion partners, constructive and critical friends and learning resources that support the development of teacher knowledge.

Replication of role play with variations in the characteristics of actors can be a potential focus of future research. Researchers may consider involving role play actors from among the teachers and their peers. Researchers can also do two types of role play by contrasting two types of lesson plans that are of different quality, one lesson plan of good quality and one lesson plan that still has limitations in terms of the suitability of indicators, content, sequence, and detailed learning instructions. The idea of implementing the role play of the learning design and the direct impact felt and experienced by the teacher is expected to be an alternative model for building the ability of teachers or prospective teachers to construct a learning design that is more weighty and of quality in terms of mathematical content as well as pedagogical rules and clarity of instructional instruction structures.

## **CONCLUSION**

Based on the results, we can see that for this case, the demonstration of a learning plan (role play) can cause changes in the way of thinking and knowledge of the teacher towards lesson plans and the essence of their preparation. *Role play* is able to help the growth of teachers' awareness to internalize concepts and the true meaning of their obligations in planning learning. This change certainly raises high expectations for improving the quality of lesson plans designed by teachers. Another finding in the research is that the implementation of role play is realized by teachers as a future need that should be carried out routinely as a means of evaluating the lesson plans they develop.

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