



## Self-confidence attitude of novice primary teachers reflection on teaching mathematics

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### Abstract

The teacher's attitude towards mathematics teaching is seen as an essential factor in forming students' attitudes towards mathematics. However, no one has extensively described the reflection of teachers' self-confidence in teaching mathematics, especially for novice primary teachers. Therefore, the purpose of this study sought to describe a reflection of the self-confidence attitude of novice primary teachers in teaching mathematics. A questionnaire based on novice primary teachers' teaching experience was administered to a total of 28 novice primary teachers (N = 22 males, N = 6 females) conveniently selected to participate in the study reported in this article. The semi-structured interviews data explored novice primary teachers' reflections on the given questionnaire scale items. The qualitative data obtained from semi-structured interviews informed the quantitative information extracted from the questionnaires. The results showed that the reflection of the self-confidence attitude of novice primary teachers in low, moderate, and high participants on the scale of confidence in teaching mathematics raises three essential findings, specifically (1) ability on content knowledge, (2) ability to explain, and (3) ability in classroom management. The resulting reflection in low, moderate, and high participants on the scale was an attitude toward success in teaching mathematics, namely, the appraisal of others, and on the scale, the usefulness of mathematics teaching, namely the ability to understand the usefulness of mathematics.

**Keywords:** attitude; novice teacher; reflection; self-confidence

Received: 20 September 2021 | Revised: 4 October 2021

Accepted: 9 October 2021 | Published: 6 January 2022



## Introduction

Mathematics plays an important role in influencing how students deal with private, social, and public life (Anthony & Walshaw, 2009). This justifies the need for primary and secondary education students in most countries (Mensah et al., 2013), and in line with mathematics, which many views as the main subject at the education level in Indonesia. In addition, by studying mathematics, a person is accustomed to thinking systematically, scientifically, using logic, critically, and can increase his creativity. However, some math problems occur from elementary school to university levels that cause students to struggle in learning mathematics (Russo et al., 2021). Therefore, in this study, we want to look at mathematics from the teacher's point of view.

Moreover, attitude towards mathematics plays a significant role in teaching and learning processes in mathematics classrooms. The teachers' attitude towards teaching mathematics plays an influential role in ensuring the success of applying the mathematics curriculum. Besides, teachers' attitudes towards beliefs and practices, including teacher confidence in teaching mathematics (Stipek et al., 2001) and willingness to take more significant risks (Trigwell, 2012), are considered as key factors that influence the quality of teaching mathematics (Stipek et al., 2001). Teachers' attitudes towards teaching mathematics are essential in shaping students' attitudes towards mathematics (Mensah et al., 2013).

Both student and teacher attitudes must be first identified to understand an individual's attitudes. One of the effective ways to identify this is to use an attitude measurement instrument. An individual's attitude may not be observed directly, but the nature of attitude may be known through the individual's response. The most common measure to obtain information about an individual's attitudes is through a questionnaire (Fennema and Sherman, 1976; Nisbet, 1991). Fennema and Sherman (1976) proposed nine scales to measure students' mathematics attitudes in learning, specifically (1) confidence in learning mathematics; (2) mathematics anxiety; (3) attitude toward success in mathematics; (4) mathematics as a male domain; (5) effectance motivation in mathematics; (6) usefulness of mathematics; (7) perception of mother's attitude toward one as a learner of mathematics; (8) perception of father's attitude toward one as a learner of mathematics; (9) perception of teacher's attitude toward one as a learner of mathematics. Furthermore, Nisbet (1991) developed the Fennema and Sherman (1976) instrument to measure pre-service teachers' attitudes in teaching mathematics. The attitudes referred to in this study are influenced by experiences and achievements in school mathematics, teachers, parents, employers, and peers.

Several educational researchers attempted to reveal students' attitudes in mathematics using existing instruments (Demirel et al., 2015; Larkin & Jorgensen, 2016; Mazana, 2019). Students' negative attitudes can change quickly to become positive attitudes towards mathematics (Hannula, 2002). Besides, Mensah et al. (2013) showed that teachers' attitudes influence students' attitudes towards mathematics in teaching mathematics. Apart from looking at student attitudes, some researchers revealed a significant positive correlation between student attitudes towards learning and academic achievement (Bakar et al., 2010; Mata et al., 2012; Yaratan & Kasapoglu, 2012). Some researchers also reveal the relationship between student attitudes and achievement, seen from gender. The results of their research show no relationship

between student gender and attitudes and achievement (Hemmings et al., 2011; Khun-Inkeeree & Omar-Fauzee, 2016; Mahanta & Islam, 2012). Then, Anyagh et al. (2018) investigated students' perceptions of their teachers' attitudes in mathematics learning. Their research shows that students are strongly influenced by the teacher's actions and inaction so that a wrong tendency can be developed towards mathematics subjects.

In addition to students' attitudes towards mathematics and teachers, several researchers also revealed pre-service teachers' attitudes in teaching mathematics (Hourigan et al., 2016; Jacobs & Durant, 2017; Tabuk, 2018), which shows that pre-service teachers have a positive attitude towards teaching mathematics. Several researchers also discussed the teacher's attitude toward learning. Thiel (2010) revealed that kindergarten teachers are open to mathematics. They emphasize the benefits of mathematics for everyday life. However, numerous kindergarten teachers perceive mathematics assignments as merely numbers and shapes.

Furthermore, it was revealed that the positive attitude of primary teachers towards classroom teaching could encourage students to develop positive attitudes towards learning (Festus et al., 2013; Korur et al., 2016). Therefore, this study will follow up by analyzing and describing primary teachers' attitudes, especially novice teachers, in teaching mathematics in schools. The follow-up is carried out because the actions and inaction of the teachers in the learning process can negatively impact students. Besides, novice primary teachers were chosen because they had never participated in a professional program to provide a complete picture of the novice primary teachers' attitude in teaching mathematics.

The teacher's attitude towards teaching in the classroom is also inseparable from the teacher's desire to deliver lesson content and involve students in mathematical thinking and discussion. However, to focus on facilitating the delivery of the lesson content, conditions must reflect on themselves; in this case, teachers can reflect on their teaching (Russo, 2019). Reflection is as critical as action because when it can reflect on the actions taken, it is self-control; therefore, it can be responsible for one's behavior (Abramovich et al., 2019). Reflection can be used as the primary measure by which teachers understand, develop, and refine practices in teaching mathematics (Keazer, 2014). Reflection is both individual and collaborative process, which involves experience and uncertainty (Jay & Johnson, 2002). It is in line with the opinion that reflection is a process (Russo, 2019). Hence, it becomes interesting to find out the results of teacher reflection on their confidence in teaching mathematics because, according to Ramos-rod ríguez et al. (2017), reflection is a process that can improve a teacher's teaching practice.

The description of a teacher's attitude in teaching mathematics, especially related to self-confidence, has not been widely discussed. The teacher's attitude regarding self-confidence is an essential component because self-confidence as a mathematics teacher is significantly associated with student confidence as mathematics learners (Stipek et al., 2001; Tuimavana & Datt, 2017). To find out the teacher's attitude, the researcher adopted three scales developed by Nisbet (1991), which are related to self-confidence, specifically (1) confidence in teaching mathematics; (2) attitude toward success in teaching mathematics; and (3) usefulness of mathematics teaching. In addition to self-confidence being an essential component in teaching mathematics, the determination of teachers to reflect on themselves in teaching mathematics

(Russo, 2019) and the teacher's views themselves are also vital to build or measure the effectiveness of teaching in the classroom (Tuimavana & Datt, 2017). Besides, repeated reflections on teacher knowledge are strongly influenced by experiences in teaching (Mcalpine et al., 2004; Mcalpine & Weston, 2002).

The description of the teacher's attitude in reflecting on mathematics learning, especially the attitude of beginner elementary school teachers about self-confidence, has not been extensively discussed. The teacher's attitude regarding self-confidence is an essential component because self-confidence as a mathematics teacher is significantly associated with student confidence as mathematics learners (Stipek et al., 2001; Tuimavana & Datt, 2017). Furthermore, Orgovanyi-Gajdos (2015) stated that teachers with less teaching experience or novice teachers need support to handle classroom teaching problems while expert teachers do not. So, it is necessary to explore the self-confidence attitude of novice teachers in teaching mathematics. The novice teachers are teachers with a maximum of one year of teaching experience (Fantilli & McDougall, 2009). Therefore, this study describes the reflection of novice primary teachers' self-confidence in teaching mathematics.

## Methods

The study reported in this article followed a descriptive quantitative study to describe novice primary teachers' attitudes in teaching mathematics. The research participants were novice primary teacher alumni of Primary Teacher Education University in Tarakan. They were selected based on their teaching experience, specifically having a maximum of one year of teaching experience in primary schools. Participants were determined using the purposive sampling technique. Participants were selected based on the teaching timespan criteria.

Furthermore, participants followed through interviews were selected based on high, medium, and low categories. Twenty-eight participants met the criteria in the study, namely that they had been teaching for a maximum of 1 year. Table 1 shows the demographics of the participant.

**Table 1.** Demographics of participants

<b>Demographics</b>	<b>Total</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Male	22	79
Female	6	21
<b>Teaching Timespan</b>		
0 – 6 month	20	71
7 – 12 month	8	29

The instrument used in this study was a questionnaire to determine the participants' attitudes, especially regarding self-confidence in teaching mathematics in primary schools, and interview guidelines. Data collection was carried out through a questionnaire in a google form sent to participants through the chat messenger application *WhatsApp*. This condition was done because the research was carried out during the COVID-19 pandemic, so it was impossible to give questionnaires directly to participants.



The questionnaire used was a scale developed by Nisbet (1991). In this study, the questionnaire scale used only focused on self-confidence; hence three scales were selected related to self-confidence, presented in Table 2.

Table 2. Indicator of self-confidences

No	Self-Confidences	Indicator	Questionnaire Item	Item Number
1	Confidence in teaching mathematics scale	Teachers feel safe about the idea of teaching mathematics in the upper classes as well as the lower classes and can be a good mathematics teacher.	Favourable Unfavourable	1, 2, 3, 4, 5 6, 7, 8, 9, 10
2	Attitude toward success in teaching mathematics scale	Teachers are glad to be acknowledged by other teachers as a good mathematics teacher.	Favourable Unfavourable	11, 12, 13 14, 15, 16
3	Usefulness of mathematics teaching scale	Students need to solve mathematics problems in their daily adult life and for their future job.	Favourable Unfavourable	17, 18, 19, 20 21, 22, 23, 24

Then the participant items were assessed on a 5-point Likert scale, namely (1) strongly agree; (2) agree; (3) hesitated; (4) disagree; (5) strongly disagree. Before using the questionnaire, researchers conducted trials on 24 primary school teachers in Tarakan City to see their validity and reliability. Based on the item validity test using Pearson correlation, it was found that 24 items were declared valid. Meanwhile, the reliability test results using Cronbach's Alpha obtained a value of .841. The instrument is valid if the value of Cronbach alpha is  $0.7 < x < 0.9$  (Nunnally & Bernstein, 1994; Streiner, 2003).

The data analysis in this study used descriptive statistics through the following stages:

1. Identification of the novice teachers' responses to the completed questionnaires
2. Calculate the average for each aspect of self-confidences
3. Categorize self-confidence, namely, low, medium, and high, based on the average result and standard deviation
4. Choose three novice teachers (participant low (PL), participant moderate (PM), and participant high (PH)), who represent each category to be followed up through interviews.
5. Analyzing the results of the interview
6. Concluding

## Results

Table 3 shows the reflection analysis of 28 novice primary teachers' self-confidence attitudes, accompanied through further analysis to show the scores into each self-confidence attitude scale based on the predetermined indicators. The frequency and percentage of the self-confidence attitude scale are then calculated, as shown in Table 4. As shown in Table 4, the self-confidence on confidence in teaching mathematics scale is seen to be the highest (85.71%) in the moderate

category. On the attitude toward success in teaching mathematics scale, the highest level of self-confidence is also in the moderate category (42.86%). However, in the usefulness of the mathematics teaching scale, self-confidence in the moderate and high categories has the same value (50%).

**Table 3.** Descriptive statistics of the self-confidences

No	Self-Confidences	N	Mean	Standard Deviation
1	Confidence in teaching mathematics scale	28	3.086	.127
2	Attitude toward succes in teaching mathematics scale	28	3.036	.532
3	Usefulness of mathematics teaching scale	28	3.451	.244
	<b>Mean</b>	<b>28</b>	<b>3.191</b>	<b>.301</b>

**Table 4.** Categorization of the self-confidences of novice teachers

No	Category	Score Interval	Self-Confidences of Novice Teachers					
			a		b		c	
			F	%	F	%	F	%
1	Low	$x < 2.890$	2	7.14	10	35.71	0	0
2	Moderate	$2.890 \leq x < 3.492$	24	85.71	12	42.86	14	50
3	High	$x \geq 3.492$	2	7.14	6	21.43	14	50
	<b>Total</b>		<b>28</b>	<b>100</b>	<b>28</b>	<b>100</b>	<b>28</b>	<b>100</b>

Note:

a: Confidence in Teaching Mathematics Scale

b: Attitude Toward Success in Teaching Mathematics Scale

c: Usefulness of Mathematics Teaching Scale

## Confidence in teaching mathematics

Do novice primary teachers have confidence in teaching mathematics? This question is presented and discussed further. Based on Table 4, the participants' responses show the highest percentage in the moderate category (85.71%). Then, based on the collected data, three participants representing each category were followed up through interviews. The results of the interview showed that the findings on participants' reflection on the confidence in mathematics teaching scale showed three findings, namely (1) ability on content knowledge, (2) ability to explain, and (3) ability in classroom management.

Following are the interview results on the item "I believe I can teach mathematics in the upper and lower classes," which supports the emergence of the **ability on content knowledge**.

"Agree, **but it depends on the lesson content**. If I master the lesson content, I will feel confident in teaching. However, if I have not mastered the lesson content, then I am not sure to teach my student". (PL)

"Agree. I am **still learning to become a teacher who can teach Mathematics well** to high and low-grade students". (PM)

"Agree. Because in my opinion, as a primary school teacher or class teacher, you must be able to teach mathematics well in the lower and upper classes. I think **the mathematics lesson in primary schools is still very simple**". (PH)

The following is the result of the interview on the item “I am confident about the method of teaching mathematics,” which supports the **ability to explain**.

“Agree. I always have concerns when delivering lesson content, **whether my method is proper or not, that my students will understand**. But I know that I have tried to use the appropriate teaching method”. (PL)

“Agree. As a low-grade teacher, I teach numbers and their operations using objects that are easy for students to find in their daily lives. **It is easy and fun for students**”. (PM)

“Agree. **I am confident in the mathematics teaching method that is being carried out** because so far, I have used a method that is adapted to the content to be presented”. (PH)

The following are the interview results on the item “I am not the type of person who can teach mathematics well,” which supports the emergence of **classroom management abilities**.

“Unsure. Because I have concerns about my attitude, particularly when I **face students who find it difficult to understand the material, I convey whether I can handle these students in class learning**”. (PL)

“Disagree. **I am a friendly math teacher and present the material attractively in the classroom so that students always pay attention to every explanation I give**”. (PM)

“Strongly disagree. I can teach mathematics well; so far, **my students always relied on me as a source of information in classroom learning**”. (PH)

## Attitude toward success in teaching mathematics

Do novice primary teachers have a willingness to achieve success in mathematics teaching? Based on Table 4, the participants’ responses show the highest percentage in the moderate category (42.86%). Then, three participants representing each category were followed up through interviews. The interview results showed that the findings on participant’s reflection on the attitude toward success in teaching mathematics scale are **others’ appraise**. Table 5 is the interview result on several items showing the support of the appraisal of others' findings.

**Table 5.** The interview results that unveil the appraisal of others

Items	Participant	Interview Results
I am glad to be acknowledged by other teachers as an excellent Mathematics teacher.	PL	Disagree. <b>I don't want to get a bigger responsibility once I got the acknowledgment</b> , such as helping students for the Olympiad preparation. I feel more comfortable when I work with colleagues because they are more capable than me.
	PM	Agree. <b>I like to share and learn together with older teachers, including mathematics</b> .
	PH	Agree. I am glad, <b>and I hope the acknowledgment can influence students' perspectives</b> , such as believing me in delivering the material.
I will be glad to be an excellent	PL	Disagree. <b>I do not want others to rely on me because it burdens me</b> .

Items	Participant	Interview Results
Mathematics teacher among my colleagues.	PM	Unsure. <b>I have a lot to learn more because I am still a new teacher, and many are more experienced.</b>
	PH	Agree. <b>I believe students will be more motivated to learn when I perform as an excellent teacher.</b>
	PL	Unsure. <b>I don't know how others think about me since I feel I am just an ordinary teacher.</b>
Being an excellent Mathematics teacher makes me feel to get the spotlight.	PM	Unsure. I am not sure with the word "spotlight." I don't want students to think that I am good at Mathematics only. <b>I want to be acknowledged as an excellent teacher for all subjects as a homeroom.</b>
	PH	Strongly agree. Yes, <b>being an excellent teacher makes me stand out among the other teachers.</b>
	PL	Agree. <b>I do not want to get the burden to be relied on when my colleagues know that I am excellent in teaching Mathematics.</b>
I do not want to tell my colleagues that I am great at teaching Mathematics.	PM	Agree. Because <b>I enjoy studying with the older teachers, so they know that I am an ordinary math teacher.</b>
	PH	Strongly agree. Because <b>I do not want to show off my ability, I let others judge my ability from their perspective.</b>

## The usefulness of mathematics teaching

Do novice primary teachers understand the usefulness of mathematics? Based on Table 4, the participants' responses show the same percentage in the moderate and high categories. Then, three participants representing each category were followed up through interviews. The interview results showed that the participant's reflection on the usefulness of the mathematics teaching scale is **the ability to understand mathematics' usefulness**. Table 6 is the result of the interview on several items that support understanding the usefulness of mathematics.

**Table 6.** The interview results show the ability to understand the usefulness of mathematics

Items	Participant	Interview Results
Mathematics is taught at school because of its usefulness.	PL	Agree. <b>Yes, it is very useful. I focus on emphasizing the multiplication problem</b> since I think it is quite necessary for students' life.
	PM	Strongly agree. <b>Mathematics is an important material for students because they will find it in everyday life</b> , for example numbers and their operations.
	PH	Agree. <b>Mathematics has a strong correlation with real daily life.</b>
Mathematics will not be that significant for	PL	Disagree. <b>Every career requires mathematical knowledge.</b>
	PM	Strongly disagree. <b>Mathematics will help someone in every job they are engaged in.</b>



Items	Participant	Interview Results
students' future careers.	PH	Disagree. It is important because <b>I can be sure that there is at least one of the mathematics material that is needed in their career.</b>
Mathematics is a useful lesson for students' adult daily life.	PL	Agree. <b>Surely, the knowledge will be useful.</b>
	PM	Strongly agree. <b>We need math in carrying out our daily activities</b> , for example, comparing the prices of goods.
	PH	Agree. <b>We cannot deny that mathematics is strongly related to daily life.</b>

## Discussion

In the first questionnaire scale of confidence in teaching mathematics, there were three findings; (1) ability on content knowledge; (2) ability to explain; dan (3) ability in classroom management. The emergence of ability on content knowledge shows that participants are only comfortable with the material being mastered. If they have not mastered the material, they have a tendency not to be a good teacher. The reason arises because the participants only master the material being taught. In contrast, they still have to learn from other materials and must master the material for a long time. The conditions experienced by participants are in line with Bates et al. (2013), who said that teachers still have fear in their math content. It was further explained that teachers have various kinds of fear of mathematics, including a lack of self-confidence. It dramatically affects the fear of content knowledge they have for teaching mathematics. In addition, other participants experienced a tendency to be confident in their mastery of the material. So there is no doubt when you have to change materials or teach at low or high classes. In line with the opinion of Strauss and Ziv (2012), which states that teaching is a natural cognitive ability so that one can master the material before teaching in class. Furthermore, Chapman (2015) said that teachers' knowledge of subject matter must be broader than the general abilities known to students.

Regarding confidence in teaching mathematics scale, it demonstrated that participants could self-reflect toward their teaching (Russo, 2019). The raising reflection when the participants can respond to the uncertainty process experience precisely what they feel so far (Jay & Johnson, 2002). Besides, participants knew and understood the next steps they needed to take after noticing bad experiences. For instance, when they did not understand the material, they needed to prepare themselves even though it needed a long time. This condition showed that participants were reflecting on their teaching experiences. Reflection is a mechanism to improve the teaching quality and translate the experiences into teaching knowledge (Mcalpine et al., 2004). It is in line with Gelfuso and Dennis (2014) belief about the importance of considering teachers' knowledge to facilitate skillful teaching practices.

The second finding in confidence in teaching mathematics scale showed that in raising the ability to explain, the participants have concerns about how students receive the material that has been delivered. There was a solicitude when students failed to understand the materials or the ineffective method used. However, Boyd et al. (2014) say that these solicitudes are

essential in shaping teachers' skills and competencies. Afterward, another perspective from Gelfuso and Dennis (2014) states that knowing the materials do not necessarily translate to having decent pedagogical content knowledge for the teaching practice in facilitating the reflection (the process of implementing the 'guaranteed statement' about learning and teaching). Besides, other participants already establish that the teaching methods are suitable and appropriate for the materials. It shows that the participants had already considered students' needs to decide the teaching methods to deliver the materials. It is in line with Schukajlow et al. (2012) statement that student-centered learning substantially affects students' attitudes and beliefs. Thus, participants' reflection, including the ability to determine effective teaching ensure or strategies, results from their adaptability to several challenges they have been through in the class (Digregorio et al., 2020). It is in line with Lee's (2005) statement that teachers who succeed in reflecting their teaching ability to think logically about the reasons to use specific teaching strategies and improve their teaching practices. It can be concluded that through a reflection, the participants could produce certain teaching practices such as planning the lesson, practicing the plans, and doing assessments (Kalantari & Kolahi, 2017).

The third finding in confidence in teaching mathematics scale showed the rise of classroom management ability. Participants have concerns about themselves when facing students who cannot understand the material presented. This condition is because the participants still have little experience in teaching mathematics. Besides, the condition in line with Cavanagh and McMaster's (2015) opinion that reflection is only focused on teachers' classroom management. Others believe that teachers with insufficient classroom management training will continuously get various challenges in their teaching careers (Simonsen et al., 2014). Hence, teacher training for classroom management that is continuously supervised is quite essential to adjust the existed supports. It is aligned with Ramos-rodríguez et al. (2017) opinion saying that teacher training can reflect the challenging teaching processes.

Meanwhile, other participants have shown that they can teach mathematics well. Reasons related to this item are when students pay full attention and rely on participants' role as the primary source of information. The condition where the participants had an excellent preparation is in line with Ingersoll et al. (2012) state that teachers' preparation has a significant role in improving their teaching.

Discussing the second scale, attitude toward success in teaching mathematics, it can be seen that participants responded based on their experience of uncertainty that they had felt like a reflection. Participants bring up the appraisal, which shows the importance of others' judgments as a teacher given by other teachers or students. The assessment was reflected by participants' pessimistic tendencies, such as they did not want to be relied on and felt it a burden. It shows that participants were careful with their beliefs or knowledge based on their actions (Conway, 2001).

In contrast to the reflections in other participants, they tend to think that they take colleagues' and students' judgments as an appreciation for their effort and everything they have done in mathematics teaching. However, participants did not want to be spotlighted and disclosed to others were excellent mathematics teachers to others. Their eagerness is encouraged to be acknowledged based on their work or contribution seen by other teachers or

students. The continuous reflection done by participants allows them to access prior knowledge and build new knowledge from their experience (Mcalpine & Weston, 2002). So, participants can focus on widening their knowledge through reflections by improving their skills to use reflection and effectively develop themselves to be capable teachers. Additionally, the results of participants' reflections show the existence of moral and ethical criteria and measure whether those professional activities do not take sides, fair, and respectful (Kalantari & Kolahi, 2017).

On the third scale, the usefulness of mathematics teaching reveals that participants think mathematics is an essential and valuable subject for students in raising the ability to understand the usefulness of mathematics. Nevertheless, those participants believe that only certain mathematics materials are helpful for students' daily lives. This condition shows that every event has ideas, beliefs, and knowledge related to real-life problems teachers bring in the teaching (Romano, 2006). That opinion comes from their understanding of the situation that finally encourages them to reveal their belief and assumption based on their teaching (Mcgar & McCormack, 2015).

The findings from questionnaires to novice primary teachers showed differences from previous studies. This study focuses more on teacher attitudes in teaching Mathematics, especially regarding self-confidence. Several previous studies have shown that teacher candidates generally have a positive attitude towards teaching mathematics (Hourigan et al., 2016; Jacobs & Durant, 2017; Tabuk, 2018). Then Thiel (2010) said that although teachers are open to mathematics, they perceive math tasks only as using numbers and shapes. In addition, (Festus et al., 2013; Korur et al., 2016) revealed that a positive attitude is required before seeing students' positive attitude. Due to the difference in focus and results from previous research, this study provides additional new information on the condition of novice primary teachers related to their confidence in teaching mathematics.

## Conclusion

The reflection of novice primary teachers' confidence in teaching mathematics resulted in several findings. On the scale of confidence in mathematics teaching, there are three results of reflection, namely (1) ability on the material, (2) ability to explain, and (3) ability in classroom management. On this scale, novice primary teachers only master certain materials (not all mathematics material in primary schools). It dramatically affects the ability to use methods and class mastery when given teaching assignments in class or material that is not mastered. Furthermore, the reflection on the attitude toward success in teaching mathematics scale found one finding: the appraisal of others. On this scale, novice primary teachers negatively assess other teachers and students, namely as an additional burden on themselves. Then the resulting reflection is on the usefulness of mathematics teaching scale, namely, the ability to understand the usefulness of mathematics. On this scale, novice primary teachers think that mathematics is essential to be taught in primary schools, but that will be used in everyday life only on specific materials (not all material in mathematics).

This study only focused on novice primary teachers. It seems clear that novice primary teachers need a long time to shift their thinking from focusing on themselves to considering

how their actions can affect student learning outcomes. Then, this study only looked at how the reflection of the self-confidence attitude of novice primary teachers in teaching mathematics and had not seen whether the reflection made on this self-confidence could affect the attitude of self-confidence and student learning outcomes? This condition provides an opportunity for further studies to be carried out on how the reflection of self-confidence by novice primary teachers can affect the attitude of self-confidence and student learning outcomes.

## Conflicts of Interest

The authors declare that no conflict of interest regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely by the authors.

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