

## Research Article

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## Teacher Self-Efficacy and Efforts for Enhancing Student Engagement at Tertiary Education

Muamaroh Muamaroh , Muhammad Thoyibi

**Abstract**

**Background/purpose.** The main objective of this research is to examine teacher efficacy in student engagement, instructional strategies, and classroom management and its relationship to gender, age, and length of teaching experience in a tertiary education context.

**Materials/methods.** A qualitative approach was utilized to uncover the efforts made by teachers to enhance student engagement. A quantitative approach was employed to ascertain whether significant differences in efficacy exist based on gender, age, and length of teaching.

**Results.** The findings of this study indicate that there are no significant differences in teacher efficacy related to student engagement across gender, age, and teaching experience. Similarly, the teacher efficacy in employing instructional strategies shows no significant variations based on these demographic factors.

**Conclusion.** The study highlights the proactive and adaptive nature of teachers' approaches to fostering student engagement. The study also reveals that teacher efficacy in classroom management is significantly associated with the length of teaching experience.

## 1. Introduction

Teacher self-efficacy, referring to the confidence to accomplish a specific teaching project under a particular circumstance (Bandura, 1997; Tschannen-Moran et al., 1998), has been an issue in education both in developed and developing countries (Cansoy et al., 2018; Huang & Yin, 2018; Ling et al., 2015; Rezaeian & Abdollahzadeh, 2020; Wosnitza et al., 2014). Teacher self-efficacy is considered as a serious indicator of successful teaching and contributes to educational improvement (Liaw, 2017). Teachers with confidence can teach students successfully (Wheatley, 2005). To teach effectively, teachers need to develop the four sources of efficacy: direct experience, vicarious learning, social persuasion, and emotional states (Gonzales Miñán, 2013). The strong efficacy gives teachers positive energy for teaching, and those with higher efficacy are more prepared to implement instructional innovations (Ghaith & Yaghi, 1997).

There have been abundant studies related to teacher self-efficacy. Some studies are research reviews. Klassen et al. (2011) examined 218 research articles during the period 1998-2009. They concluded that most of the research focused on the validity of teacher efficacy measurements, some emphasized the relationship between teacher efficacy and other factors such as work stress, job satisfaction, and school conditions, and a small number of others linked teacher efficacy and student learning outcomes. Dibapile (2012) studied articles on efficacy that were specifically related to classroom management. Seneviratne et al. (2019) examined 43 articles on professional development programs for pre-service and in-service teacher efficacy in implementing inquiry-based learning in the classroom. They concluded that there was a significant relationship between various professional development programs and teacher self-efficacy in implementing inquiry-based teaching.

Some studies have focused on the factors that influence teacher self-efficacy. Salgado et al. (2018) found that teachers who are well-prepared in content, pedagogy, and teaching strategies tend to have high self-efficacy, which is correlated with student engagement, classroom management, and teaching strategies. Molero Jurado et al. (2019) concluded that high levels of burnout are associated with low self-efficacy, job satisfaction, and teacher professional commitment. Kelley et al. (2020) demonstrated that professional development positively impacts teacher efficacy. Akman (2021) confirmed that self-efficacy is influenced by teacher leadership. Marschall (2022) showed that school environment influences teacher efficacy.

Some other studies focus on the factors influenced by efficacy. Hampton et al. (2020) demonstrated that teacher efficacy in online teaching correlates with lecturer satisfaction. Saracaloglu et al. (2020) exhibited negative relationship between prospective teacher efficacy and academic motivation and academic procrastination. Kareem et al. (2022) presented that teacher efficacy in technology affects student engagement in learning activities. Xiyun et al. (2022) showed that teacher efficacy and emotional regulation play a major role in determining teacher psychological well-being. Kholifah et al. (2023) demonstrated that teacher self-efficacy in digital technology improved teaching quality. Suryati et al. (2023) showed that teachers need a supportive social environment to achieve optimum learning outcomes. Woodcock et al. (2022) exhibited that teacher self-efficacy can influence teacher approaches to inclusion in education. Finally, Zakariya and Wardat (2023) displayed the complex relationship between teacher efficacy, teaching notification, and teacher job satisfaction.

Despite the abundant research on teacher efficacy, there remain obvious gaps in understanding teacher efficacy in the context of tertiary education. Studies at the tertiary level often rely upon the frameworks and findings developed in the levels of pre-school, elementary, and secondary school, while the context of tertiary education is significantly different from the earlier levels due to the demands for publishing and adopting innovative learning processes.

This article aims to address the gaps by investigating teacher self-efficacy through a specific perspective of the tertiary education environment. The study focuses on how teachers dealt with low engagement Generation Z students and whether gender, age, and teaching experience contribute to teacher efficacy in student engagement, instructional strategies, and classroom management. The novelty of this study lies in its focus on tertiary education as a specific educational level and the attempts of the teaching faculty to improve the quality of the teaching process.

## 2. Literature Review

Teacher self-efficacy, embedded in Bandura's social cognitive theory, has attracted researchers worldwide. Bandura (1997) introduced self-efficacy as individuals' beliefs in their capabilities to accomplish actions required to manage prospective situations (Bandura, 1997). He found four main sources influencing self-efficacy: mastery experiences, sympathetic experiences, verbal persuasion, and physiological states, and the most significant source influencing self-efficacy is mastery experience.

Based on Bandura's theory, Tschannen-Moran and Hoy (2001) developed the concept of teacher efficacy, proposing a more operational definition that teacher self-efficacy refers to a teacher's belief in their ability to influence student engagement and learning, even among apathetic or impudent students (Tschannen-Moran & Hoy, 2001). They highlighted that teacher self-efficacy is context-bound, corresponding to the types of teaching tasks and environments. They identified three domains in assessing teacher self-efficacy, namely instructional strategies, classroom management, and student engagement.

More studies have further investigated the dimensions and impacts of teacher self-efficacy. Mosoge et al. (2018) investigated the relationship between teacher self-efficacy and collective efficacy, emphasizing that a supportive school environment strengthens individual teacher self-efficacy. Sezgin and Erdoğan (2018) investigated the effect of teacher self-efficacy on job satisfaction and discovered a positive correlation, implying that stronger self-efficacy promotes greater professional fulfillment. Cansoy et al. (2018) emphasized the predictors of teacher self-efficacy, recognizing that professional development and administrative support are significant factors contributing to teacher efficacy.

Other studies have explored professional development's contribution to improving teacher efficacy. Tschannen-Moran & McMaster (2009), who examined different professional development designs and their effectiveness in increasing teacher efficacy, concluded that continuous and cooperative, and contextual training improves teacher efficacy significantly. Similarly, Thurm and Barzel (2020) highlighted the importance of sustained professional development in advancing mathematics teachers' self-efficacy.

Besides, the classroom environment also contributes significantly to the development of teacher efficacy. Research demonstrated that positive interpersonal relationships and a supportive classroom environment significantly improves teachers' beliefs in their instructional capabilities (Aldridge & Fraser, 2016; Hosford & O'Sullivan, 2016). Similarly, Wilson et al. (2018) confirmed the finding by indicating that strong leadership and a supportive school culture strengthen teacher efficacy.

Meanwhile, the concept of collective teacher efficacy—a group shared belief in the cooperative capabilities to organize and execute actions required to achieve desired goals—initiated by Bandura in the 1990s (Bandura, 1997) has become an issue of interest. Research indicates that schools with high collective teacher efficacy often experience better student outcomes, as teachers feel more empowered and committed to their collective mission (Prelli, 2016; Cansoy et al., 2022).

In summary, the concept of teacher efficacy has developed from Bandura's initial theories to embrace various dimensions, including individual and collective beliefs, professional development,

and environmental factors. Ongoing research continues to explore the complexities of teacher efficacy, offering insights into how educators can be strengthened to expand their potential and improve student success.

### **3. Methodology**

#### **3.1. Research Design**

To obtain a comprehensive understanding of the multi-faceted nature of teacher efficacy, this study employed a mixed-method research design (Teddlie & Tashakkori, 2009), beginning with a qualitative component and followed by a quantitative approach. This type of study is classified into exploratory sequential mixed methods design (Plano Clark, 2019). The qualitative approach explored the demographic backgrounds of the teachers and their self-efficacy in student engagement, instructional strategies, and classroom management, leading to their efforts to encourage the participation of passive students. The quantitative component was utilized to depict whether gender, age, and teaching experience are related to teacher efficacy in student engagement, instructional strategies within the classroom, and classroom management.

#### **3.2. Research Participants**

The research participant pool consisted of 79 Indonesian English teachers of English as a Foreign Language (EFL) recruited from seven higher education institutions in the neighborhood. A demographic breakdown of the participants revealed a predominantly female cohort (63%), with males comprising 37% of the sample. In terms of age distribution, most participants (63%) were under the age of 40, while 37% were 40 years or older. Regarding the teaching experience, 87% of the participants had fewer than 20 years of the teaching experience, whereas 13% had accumulated more than 20 years of experience in the field.

#### **3.3. Sample**

The study sample was comprised of seven out of 45 universities in the province, selected using a purposive sampling technique based on convenience. The sample universities represented six distinct institutional types within the region, namely: (1) State public university, (2) State Islamic university, (3) Private public university, (4) Private Islamic university, (5) Private Christian university, (6) Private Catholic university.

#### **3.4. Data Collection Instruments**

In line with the research design, data were collected through interviews and closed questionnaires. The interviews comprising 10 semi-structured questions, including questions on motivation, instructional strategies, classroom management, student engagement, and strategies for coping with passive students, besides the demographic backgrounds, namely age, gender, education, institution origin, and length of teaching experience.

The closed questionnaires were adopted from the Ohio State Teacher Efficacy Scale (OSTES) developed by Tschannen-Moran and Hoy (2001). The adoption of the scale was because the research participants encountered the same situation as formulated in the scale items. The scale was meant to verify whether age, gender, and teaching experience are related to teacher efficacy in instructional strategies, classroom management, and student engagement. The scale contained 24 items, comprising three factors, namely: efficacy for instructional strategies (8 items), efficacy for classroom management (8 items), and efficacy for student engagement (8 items). The scale had been tested both its reliability and validity through three successive studies. Study 1 selected 32 of the former 52 items, study 2 selected 24 of the 32-item-version, and study 3 selected 12 of the 24-item-version. The results of the study confirmed that either the longer version (24 items) or the shorter version (12 items) was proven to be reliable and valid (Tschannen-Moran & Hoy, 2001).

### **3.5. Analyzing of Data**

The data obtained from interviews were analyzed qualitatively using thematic analysis involving familiarizing with data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report (Braun & Clarke, 2006). However, this article did not present the whole results of the data analysis but was confined to the specific theme related to the efforts made by the teachers in enhancing the student engagement because the low student engagement in the teaching-learning process was one of the central themes in the research findings.

The data collected from the questionnaires were analyzed quantitatively using descriptive statistics, T-tests, and ANOVA to determine significant differences among variables. The data were also analyzed to verify whether gender, age, and the length of teaching experience are related to teacher self-efficacy for instructional strategies, classroom management, and student engagement.

## **4. Results**

### **4.1. Teachers' Effort to Improve Student Engagement**

Student engagement is one of the major themes the teachers examine. Strong teacher efficacy encouraged educators to put in greater effort to enhance student engagement in classroom activities throughout the study. Observations and interviews revealed that teachers implemented group or pair work, provided regular motivation, assigned extra tasks to passive students, offered additional support, and fostered strong relationships with their students.

#### **4.1.1. Group Work**

The interview implies that teachers addressed passive student behavior by encouraging them to work in group or in pairs. Group work allowed students to engage in discussions, interact with their peers, and exchange ideas. If they struggled to understand the material, they could seek clarification from their group members and collaboratively enhance their learning.

T1SUN: I directed [them] by giving assignments and discussing them in class. I taught a speaking subject, and students got assignments to work in groups or pairs. They had no choice except practicing English among their friends in groups, and those activities must be videoed. I also put the students with low English competence in the same group as those with higher oral English competence.

T2PUC: How to make student active, not only in speaking but also in writing, is still challenging to me. Once I came to class, I found some students were silent. Therefore, I gave them a group task to discuss and present the result. The task made them converse and evaluate. At least, it made them speak first.

T2PUC: In some cases, I gave one topic to one group and then I asked each member of the group to speak [about the topic]. At least, they read [the materials] and contributed [something].

T3PUM: To motivate students with low academic competence, I usually use group work, especially in big class where I teach for certain subject. [I] divide the students into groups considering their academic competence level: strong, medium, and weak. Therefore, they can help each other. In speaking class, for instance, I identified the speaking competence from the beginning. Therefore, I grouped them based on their level: the low students with the low peer and vice versa.

#### **4.1.2. Motivating Students Regularly**

Several teachers reported addressing the issue of passive students in the classroom by actively providing motivation during lessons. They observed that some students exhibited passivity due to personal challenges that hindered their ability to concentrate on their studies. By offering

motivational support, teachers aimed to remind students of their academic goals, thereby helping them to regain focus and engagement in their studies.

T4SUI: A student once told me that he wanted to resign from the study program. Then I motivated him from A to Z and persuaded him to stay. 'Next week you come here again and don't say that you want to resign,' I said. Then, the following week, he came to my office and I encouraged him again. Finally, he stayed and he got excellent achievement and even scholarship. Later when he met me, he always thanked me for motivating him.

T7PUS: I once had a student who was difficult to talk with openly. She never talked about her problem. Anytime I asked her, 'Is everything OK?' the answer was always 'yes.' However, her grades were not good, and she did not show interest in studying. I invited her to share her problem, but she did not want to talk about it. Her friends told me that she was not in the mood for finishing her study. I happened to teach Learning Psychology. So, I started to motivate the class any time I opened my subject. I highlighted the importance of comfortable atmosphere for learning. Finally, Thank God, she finished her study.

#### ***4.1.3. Giving Inactive Students Extra or Additional Assignments***

This study found that teachers employed a targeted strategy to engage inactive students, wherein additional assignments were provided outside of regular classroom instruction. The supplementary assignments appeared to have a positive impact on student learning outcomes, as evidenced by enhanced understanding of the course material.

T1SUN: I also give extra assignment to work outside the class and then ask them to do question and answer among friends. All those activities must be videoed so that I can check them.

T1SUN: I control [them] by giving assignment and discussing it in class.

T5PUP: My strategy is just asking question to make them focus on their study

#### ***4.1.4. Giving Extra Attention and Building Strong Relationship with Students***

To deal with the issue of passive students within the classroom, teachers employed additional attention and a personalized approach. This individualized and enhanced attention encouraged passive students to concentrate on the instructional material, thereby improving their comprehension. Furthermore, personalized attention encouraged passive students to become more active participants in classroom activities. In addition to giving extra attention, teachers also built strong relationship with students. Beyond providing extra attention, teachers also fostered strong relationships with students. Establishing robust and positive relationships enabled teachers to cultivate a conducive and supportive learning environment.

T4SUI: Becoming friends [for students]. I provide the students a hotline by WA, SMS, email for 24 hours to share and tell their problems, to ask questions, and I respond most of them.

T4SUI: Having close relationship with students

T2PUC: How to make silent student to be active. Active here does not only refer to have to speak but also to write.

T3PUM: Usually I use a personal approach. A student who needs special handling usually looks for attention. I usually try to give special attention to such a student personally. Of course, I cannot give personal attention to such students but make every attempt to give them special attention to deal with their problems.

#### 4.2. The Teacher Efficacy in Students' Engagement in Classroom

Table 1. Student Engagement

| Aspect              | N  | Category    | Mean  | Standard Deviation | T-test /ANOVA | significant |
|---------------------|----|-------------|-------|--------------------|---------------|-------------|
| Gender              | 29 | Male        | 55.25 | 5.159              | $t = 0.660$   | 0.512       |
|                     | 50 | Female      | 53.88 | 8.543              |               |             |
| Age                 | 15 | ≤30 years   | 52.13 | 7.567              | $F = 0.968$   | 0.412       |
|                     | 35 | 31-40 years | 55.57 | 7.192              |               |             |
|                     | 22 | 41-50 years | 53.50 | 6.155              |               |             |
|                     | 7  | ≥50 years   | 55.71 | 10.339             |               |             |
| Teaching experience | 36 | 0-10 years  | 54.09 | 6.386              | $F = 0.715$   | 0.493       |
|                     | 33 | 11-20 years | 53.66 | 8.350              |               |             |
|                     | 10 | >20 years   | 56.80 | 7.068              |               |             |

A descriptive statistical analysis of teacher efficacy in promoting student engagement (Table 1) shows subtle variations across demographic factors. Specifically, male teachers ( $M = 55.25$ ) exhibited slightly higher levels of teacher efficacy than their female counterparts (mean = 53.88). However, a T-test revealed that this difference ( $t=0,660$ ) was not statistically significant ( $sig = 0,512$ ).

Similarly, an analysis of teacher age revealed that educators above 50 years old demonstrated the highest levels of teacher efficacy ( $M = 55.71$ ), whereas those between 20-30 years old exhibited the lowest levels ( $M = 52.13$ ). Nevertheless, the ANOVA results ( $F = 0.968$ ) indicated that these age-related differences were not statistically significant ( $sig=0.412$ ). Teaching experience also showed a non-significant trend, with teachers possessing 21 years of experiences exhibiting higher levels of teacher efficacy ( $M = 56.80$ ) than those with 0 – 10 years ( $M=54.09$ ) and 11 to 20 years ( $M=53.66$ ) of experience. The ANOVA results ( $F=0,715$ ) confirmed that these differences were not statistically significant ( $sig=0.493$ ).

In conclusion, the results of the T-test and ANOVA analyses suggest that teacher self-efficacy in promoting student engagement does not vary significantly across gender, age, or teaching experience.

#### 4.3. Teacher Self-Efficacy in Instructional Strategies in Classroom

Table 2. Instructional Strategies in Classroom

| Aspect              | N  | Category    | Mean  | Standard Deviation | T-test /ANOVA | significant   |
|---------------------|----|-------------|-------|--------------------|---------------|---------------|
| Gender              | 29 | Male        | 59.10 | 6.569              | $t = 0.723$   | 0.473         |
|                     | 50 | Female      | 57.75 | 6.942              |               |               |
| Age                 | 15 | 20-30 years | 56.47 | 5.055              | $F = 3.569$   | $sig = 0.018$ |
|                     | 35 | 31-40 years | 58.37 | 6.499              |               |               |
|                     | 22 | 41-50 years | 55.55 | 7.418              |               |               |
|                     | 7  | >50 years   | 64.29 | 5.187              |               |               |
| Teaching experience | 36 | 0-10 years  | 57.26 | 4.859              | $F = 0.434$   | $sig = 0.650$ |
|                     | 33 | 11-20 years | 57.47 | 7.552              |               |               |
|                     | 10 | >20 years   | 59.50 | 9.992              |               |               |

Regarding instructional strategies, this study identified that male teachers demonstrate higher teacher efficacy ( $M = 59.10$ ) than the female teachers ( $M = 57.75$ ). However, the T-test results ( $t = 0.723$ ) indicate that this difference is not statistically significant ( $F = 0.473$ ). In terms of age, teachers over 51 years old exhibit the highest efficacy ( $M = 64.29$ ) while those aged 41-50 years display the lowest teacher efficacy ( $M = 55.55$ ) in instructional strategies despite the non-significant difference ( $\text{sig} = 0.018$ ). Additionally, teachers with over 21 years of teaching experience show higher efficacy ( $M = 59.50$ ) than those with 11-20 years of experiences ( $M = 57.47$ ). Teachers with 1-10 years of teaching experience have the lowest mean ( $M = 57.26$ ) in instructional strategies. Nevertheless, there is no significant difference ( $\text{sig} = 0.650$ ) in teachers' instructional strategy based on the length of teaching experience. Therefore, teacher efficacy in instructional strategies is not significantly different based on gender, university background, degree, age, teaching experience, and teaching subject.

#### 4.4. Teacher Self-Efficacy in the Classroom Management

Table 3. Classroom Management

| Aspect              | N  | Category    | Mean  | Standard Deviation | T-test /ANOVA | significant |
|---------------------|----|-------------|-------|--------------------|---------------|-------------|
| Gender              | 29 | Male        | 59.15 | 5.779              | T = 0.299;    | sig = 0.819 |
|                     | 50 | Female      | 58.75 | 6.640              |               |             |
| Age                 | 15 | 20-30 years | 55.73 | 6.170              | F = 1.797     | sig = 0.155 |
|                     | 35 | 31-40 years | 58.77 | 6.353              |               |             |
|                     | 22 | 41-50 years | 57.18 | 6.485              |               |             |
|                     | 7  | >50 years   | 61.86 | 6.149              |               |             |
| Teaching experience | 36 | 0-10 years  | 57.80 | 6.258              | F = 3.164;    | sig = 0.048 |
|                     | 33 | 11-20 years | 56.75 | 6.839              |               |             |
|                     | 10 | >20 years   | 62.50 | 4.552              |               |             |

Table 3 illustrates that male teachers exhibit higher efficacy in classroom management ( $M = 59.15$ ) than their female counterparts ( $M = 58.75$ ). However, the T-test results ( $t = 0.299$ ) indicate that this difference in classroom management efficacy is not statistically significant ( $\text{sig} = 0.819$ ). Regarding age groups, teachers over fifty years old demonstrate the highest efficacy in classroom management ( $M = 61.86$ ) among all age categories. Teachers aged 31-40 years show higher efficacy ( $M = 58.77$ ) than those aged 41-50 years ( $M = 57.18$ ). Conversely, teachers aged 20-30 years have the lowest efficacy ( $M = 55.73$ ) across all age groups. The ANOVA analysis ( $F = 1.797$ ) demonstrates that the differences in classroom management efficacy among these age groups are not statistically significant ( $\text{sig} = 0.155$ ).

Regarding the length of teaching experience, teachers with over twenty years of teaching experience exhibit higher efficacy ( $M = 62.50$ ) than those with 0-10 years of experience ( $M = 57.80$ ) and those with 11-20 years of experience ( $M = 56.75$ ). The ANOVA analysis ( $F = 3.164$ ) confirms that the difference is statistically significant ( $\text{sig} = 0.048$ ). Furthermore, descriptive statistical analysis reveals variations in teacher efficacy concerning instructional strategy, classroom management, student engagement, and overall sense of efficacy in the classroom based on gender, age, and teaching experience. However, according to the T-test and ANOVA results, most of the differences between these variables are not statistically significant.

## 5. Discussion

### ***5.1. Improving the Student Engagement***

The interview emphasizes the significant role of strong teacher efficacy in fostering student engagement and coping with passive student behavior in the classroom. Teachers utilized various strategies to support student participation, including group work, regular motivation, additional assignments, and personalized attention. Group work proved to be an effective method for encouraging interaction, collaboration, and knowledge-sharing among students. Regular motivation helped students regain focus and overcome academic challenges, while extra assignments provided opportunities for deeper learning. Furthermore, giving special attention and building strong teacher-student relationships created a supportive and comfortable learning environment, ultimately enhancing student engagement. The findings justified the typical behavior of Gen Z students and their specific interests, needs, and expectations different from the earlier generations (Giray, 2022).

These findings reinforce the importance of teacher efficacy in shaping positive classroom dynamics and suggest that targeted interventions, such as professional development programs focusing on student engagement strategies, could further enhance teaching effectiveness (Afshar et al., 2019). Designing appropriate assignment as a strategy to improve student engagement is consistent with the study of Anyichie et al. (2023) concluding that student engagement was related to motivational aspects of engagement.

### ***5.2. Age and Teacher Self-Efficacy***

This study demonstrates that teachers over fifty exhibit the highest efficacy in classroom management, with a mean score of 61.86, while those aged 20-30 have the lowest at 55.73. However, the ANOVA analysis revealed that these differences were not statistically significant ( $F=1.797$ ,  $p=0.155$ ).

The finding that efficacy increased in teachers over fifty aligns with the study of Wosnitza et al. (2014) about the relationship between age and teacher self-efficacy, finding that older teachers often possess higher efficacy beliefs, resulting from their accumulated experience and refined teaching strategies. Conversely, the ANOVA results that age-related differences were not statistically significant resonates with the study of Ulas & Senel, (2020) that reported no significant differences in teacher efficacy across age groups, implying that factors other than age, such as professional development and support system, might play more fundamental roles.

### ***5.3. Teaching Experience and Teacher Self-Efficacy***

The findings demonstrate that teachers with over twenty years of experience have higher efficacy ( $M=62.50$ ) compared to those with 0-10 years ( $M=57.80$ ) and 11-20 years ( $M=56.75$ ). The ANOVA analysis confirmed that this difference is statistically significant ( $F=3.164$ ,  $p=0.048$ ). The finding about higher efficacy among more experienced teachers is supported by Rezaeian and Abdollahzadeh's (2020) finding that teaching experience positively correlates with teacher efficacy as seasoned educators develop effective classroom management and instructional strategies over time. Similarly, the finding that teachers with 0-10 years of experience exhibit lower efficacy levels aligns with the study of Cho et al. (2011) highlighting that novice teachers often report lower efficacy due to limited practical experience. Finally, the finding that experience contributes to self-efficacy is supported by Buckingham & Fernández-Fernández (2025) finding that experience obtained from good co-teaching practices improves teacher self-efficacy.

### ***5.4. Gender and Teacher Self-Efficacy***

The descriptive statistics shows differences in teacher efficacy based on gender but the T-test and ANOVA demonstrate that these differences are not statistically significant. The result is

consistent with the study of Huang & Yin (2018), conducting a meta-analysis on gender differences in teacher efficacy and concluded that such differences are generally minimal and not statistically significant.

Overall, the results of the study indicate that the teacher self-efficacy theory introduced by Bandura is not only applicable to elementary and secondary education levels but also applies to higher education level despite the significantly different characteristics of educational environment of tertiary education.

## 6. Conclusion

The preceding analysis and discussion show that low engagement representing the typical behavior of Generation Z students has been responded proactively by teachers. The findings imply that teachers' effort to enhance student engagement are multi-faceted and context-dependent, underscoring the importance of instructional strategies that accommodate diverse student needs. The qualitative aspects of the data highlight the proactive and adaptive nature of teachers' approaches to fostering student engagement. Specifically, the findings suggest that teachers endeavor to promote student participation through the assignment of group work, regular motivational encouragement, and the provision of additional assignments tailored to low-participating students.

The quantitative aspects of the data teacher self-efficacy in promoting student engagement does not vary significantly across gender, age, or teaching experience. Similarly, teacher efficacy in instructional strategies is not significantly different based on gender, age, and teaching experience. However, regarding the classroom management, the study confirms that the difference in length of teaching experience is statistically significant.

## 7. Suggestion

Possessing strong efficacy is crucial for teachers across all levels of education, including primary, secondary, and tertiary institution. Key components of teacher efficacy encompass student engagement, instructional strategy, and classroom management. However, this study has overlooked the significant impact of institutional environment on teacher efficacy within the context of tertiary education. It is imperative for future researchers and practitioners to examine this critical aspect, particularly within the national education system in Indonesia.

## Declarations

**Author Contributions.** Muamaroh: Conceptualization, design, data acquisition, data analysis, drafting manuscript. Thoyibi: Data analysis, critical revision of the manuscript, writing, editing/reviewing.

**Conflicts of Interest.** The authors declare no conflict of interest.

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**Ethical Approval.** Ethical procedures for research considering the participants' voluntariness, anonymity, and informed consent were approved by Health Research Ethics Committee Faculty of Medicine of Universitas Muhammadiyah Surakarta.

**Data Availability Statement.** The data used in this research is confidential and thus cannot be shared with third parties.

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