

The Effect of Microteaching Courses on Basic Teaching Skills

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ABSTRACT

This study aims to analyze the differences in basic teaching skills between students who have taken and those who have not taken the Microteaching course, as well as to examine the effect of the course on students' basic teaching skills. This study used an ex post facto research design with a causal-comparative approach. The participants were selected using purposive sampling. A total of 59 students participated in the study, consisting of 26 students who had completed the Microteaching course and 33 students who had not yet taken the course. The research instrument was a questionnaire consisting of 30 items measured using a 4-point Likert scale, resulting in a total score range of 30–120. The results showed that the average total score of basic teaching skills for students who had taken the Microteaching course was 110.52, while those who had not taken the course scored 93.34. An independent samples t-test indicated a significant difference ($p < 0.05$). The Cohen's d value of 1.88 indicates a very large effect size. Overall, the findings suggest that microteaching has a meaningful impact on students' basic teaching skills.

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INTRODUCTION

Containing Education plays a strategic role in preparing high-quality human resources to support Indonesia's development as a developed nation (Undang-Undang Nomor 14 Tahun 2005 Tentang Guru Dan Dosen, 2005). The National Education System emphasizes that education is a planned effort to create a learning environment that enables students to develop their spiritual, intellectual, and character qualities, as well as skills that benefit themselves, society, the nation, and the state. The educational process occurs through formal, non-formal, and informal channels that complement one another, with schools playing a role in continuing the education that began in the family and community (Jurumiah & Saruji, 2020).

In formal education, teachers play a key role as managers and directors of the learning process. Teachers are not only tasked with delivering material, but also with guiding and creating a conducive classroom atmosphere so that students can learn optimally (Kamal, 2018). Therefore, prospective teachers need to be equipped with basic teaching skills, which include the ability to open and close

lessons, deliver material, and manage the classroom. One of the approaches used to develop these skills is microteaching, which involves teaching practice in a controlled environment. Several studies have shown that microteaching is effective in improving students' basic teaching skills as well as the self-efficacy of pre-service teachers (Amanda et al., 2024; Loughran, 2024; Mergler & Tangen, 2010; Wulandari & Wirdati, 2024). In addition, microteaching has also been shown to contribute to the development of critical and reflective thinking skills in teacher education (Arsal, 2015; Koross, 2016; Remesh, 2013).

Nevertheless, previous studies have generally focused on students who have already participated in microteaching, employing pretest–posttest designs and assessing overall skill improvement. Studies that directly compare the basic teaching skills of students who have and have not taken microteaching, as well as those that examine each dimension of teaching skills in detail, remain limited. In addition, preliminary field observations indicate differences in perceived teaching readiness: students who have taken the Microteaching course still report feeling less prepared, whereas those who have not taken the course tend to feel more prepared. Therefore, a comparative study is needed to better understand differences in teaching skills in a more contextual manner (Iliasova et al., 2025).

This study contributes to vocational education by providing empirical evidence on the differences in basic teaching skills between prospective vocational teachers who have and have not participated in Microteaching. The findings provide insights for vocational teacher education programs to strengthen the preparation of future vocational teachers through structured teaching practice, feedback, and reflective learning. In this way, Microteaching can be considered not only as a course requirement but also as an important component in developing the practical teaching competencies needed in vocational education.

METHOD

This study employed an ex post facto method with a causal-comparative approach to examine cause-and-effect relationships based on existing conditions without direct manipulation of the research subjects (Sappaile, 2010). The population consisted of students from the Vocational Education of Mechanical Engineering Program, Faculty of Teacher Training and Education, Universitas Sultan Ageng Tirtayasa. The sample comprised 59 students, including 26 students who had taken the Microteaching course and 33 students who had not taken the course. The sampling technique used was purposive sampling.

The Instrument

The instrument used in this study was a basic teaching skills questionnaire consisting of 30 items measured using a 4-point Likert scale. The instrument covered several dimensions of teaching skills, including:

1. Opening and closing lessons (4 items)
2. Explaining the material (4 items)

3. Questioning skills (4 items)
4. Providing reinforcement (4 items)
5. Using variations in teaching (4 items)
6. Guiding small group discussions (3 items)
7. Classroom management (3 items)
8. Teaching small groups and individuals (4 items)

The total score was obtained by summing all items, resulting in a score range of 30–120. Content validity was established through expert judgment by two validators, while reliability testing using Cronbach's Alpha yielded a value of 0.99, indicating that the instrument is highly reliable, although the very high value may suggest item redundancy.

The data analysis included:

- Descriptive statistics (mean, standard deviation, minimum, maximum)
- Normality test (Shapiro–Wilk)
- Homogeneity of variance test
- Independent samples t-test
- Effect size analysis (Cohen's d)

RESULTS AND DISCUSSION

Research Results

Descriptive analysis is a type of data analysis intended to describe the characteristics of the sample data for each individual research variable (Djaali, 2023, p. 112). The results of descriptive analysis determine whether the research hypothesis can be generalized or not; if the results can be generalized, then the null hypothesis (H_0) can be accepted (Wigati & Budiman, 2018). This study used descriptive statistical analysis in the form of means, percentages, standard deviations, and minimum and maximum values to describe students' basic teaching skills. In the descriptive analysis, the average score per item is as shown in Table 1:

Table 1. Descriptive Analysis

Criteria	n	min	max	mean	Standard Deviation
Students have already taken the microteaching course	26	1	4	3,68	0,48
Students have not yet taken the microteaching course	33	1	4	3,10	0,75

In addition, an analysis was conducted for each dimension of basic teaching skills presented in Table 2.

Table 2. Average Score per Item

	Students have already taken the microteaching course	Students have not yet taken the microteaching course	difference
Opening and closing sessions	14,77	12,7	2,07
Explaining the material	15,05	12,12	2,93
Asking	14,67	11,97	2,7
Providing feedback	15,19	12,48	2,71
Incorporating variety	14,42	12,52	1,9
Facilitating small-group discussions	11,29	9,33	1,96
Managing the class	11,05	9,39	1,66
Teaching small groups and individuals	13,14	12,55	0,59

The largest difference was found in the basic skill of explaining, with a difference of 2.93, while the smallest difference was found in the basic skills of teaching small groups and individuals, with a difference of 0.59. Meanwhile, based on the results of a descriptive analysis using total scores, the average basic teaching skill score for students who had taken the microteaching course was 110.52, while the average basic teaching skill score for students who had not taken the course was 93.34.

Based on the results of the descriptive analysis, the researcher then conducted prerequisite tests, including a normality test, a homogeneity test, an independent two-sample t-test, and a Cohen's d test. The normality test is one of the tests used to determine whether the data in the study follow a normal distribution. In this study, the normality test was conducted using the Shapiro-Wilk statistical test. Based on the testing criteria, if the significance value (Sig.) > 0.05, the data is considered to be normally distributed. Conversely, if the significance value < 0.05, the data is considered not to be normally distributed.

Table 3. Normality Test

Criteria	Statistik W	Sig. (p-value)
Students have already taken the microteaching course	0,94	0,136
Students have not yet taken the microteaching course	0,94	0,072

The results of the normality test indicate that the Shapiro–Wilk significance values for both groups exceed the threshold of 0.05. This finding confirms that the assumption of normality has been fulfilled, meaning that the data from both samples can be considered normally distributed. Subsequently, to determine whether the variance between the two groups was equivalent, a homogeneity of variance test was performed. This test aimed to examine whether the data from both samples originated from populations with similar variance characteristics. The results of the homogeneity test revealed that:

Table 4. Homogeneity test

Homogeneity Test	Value
F test	0,0065
Sig. (Siegel-Tukey)	0,88

Table 4 shows that the significance value of 0.88 is greater than 0.05, indicating that the data variances can be considered homogeneous. This test was selected based on the characteristics of the

data, which were derived from a Likert scale, and the possibility that the assumption of normality might not be strictly met. The Siegel-Tukey test was chosen because it is non-parametric and more robust to deviations in data distribution compared to Levene's test. The study then proceeded with a hypothesis test to determine whether there was a difference between the two samples: students who had taken microteaching and those who had not. In this case, the researcher used an independent two-sample t-test, which yielded the following results:

Table 5. Two-Sample Independent T-test

Criteria	N	Mean
Students have already taken the microteaching course	26	110,52
Students have not yet taken the microteaching course	33	93,34
Calculated t-value	df value	Significance value (p-value)
7,071	57	2,42 x 10 ⁻⁹
		Significance level α
		0,05

Based on the results of the statistical analysis, the obtained significance value (p-value) was 2.42×10^{-9} , which is substantially lower than the predetermined alpha level of 0.05. Since the p-value falls far below the level of significance, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted. This finding indicates that there is a statistically significant difference in basic teaching skills between students who have completed the microteaching course and those who have not. In other words, participation in the microteaching course is associated with a measurable difference in students' teaching competency levels.

Table 6. Cohen's d test

Criteria	N	Mean	Std. Deviasi
Students have already taken the microteaching course	26	110,52	6,24
Students have not yet taken the microteaching course	33	93,34	10,97
X1-X2	Pooled's	Cohen's d	
17,32	9,20	1,88	

Based on Cohen's d test, it was found that the effect of the microteaching course falls into the large category, with a value of 1.88. Based on this, it is concluded that the microteaching course has an effect on basic teaching skills. A Cohen's d value of 1.88 indicates a very large effect size. However, this value is relatively higher than in most similar studies. This is likely influenced by several factors, such as the relatively small sample size, respondent characteristics, and the use of an ex post facto design that does not involve direct experimental control. Therefore, these results should be interpreted with caution.

Discussion

The results of the descriptive analysis show that the average total basic teaching skills score for students who have taken the microteaching course was 110.52, while for students who have not taken the microteaching course, it was 93.34. The findings indicate that students who have taken the Microteaching course demonstrate higher levels of teaching skills compared to those who have not. This suggests that structured teaching practice plays an important role in developing pedagogical

competence. These findings are consistent with previous studies that highlight the effectiveness of microteaching in improving teaching skills (Popat, 2020).

Although students' basic teaching skills are generally categorized as good, participation in microteaching has demonstrably contributed in a meaningful way to strengthening the quality of these skills, particularly in practical and reflective dimensions of instruction. Microteaching provides structured opportunities for guided practice, feedback, and self-evaluation, which are essential components in the development of professional teaching competence. Consistent with this perspective, Salsabilla et al (2022) argue that basic teaching skills constitute fundamental competencies that must be mastered by prospective teachers to ensure that the learning process becomes effective, engaging, and meaningful.

Nevertheless, the distribution of responses across several indicators reveals relatively small score differences in certain areas, suggesting that a proportion of students have not yet achieved optimal mastery of all aspects of basic teaching skills. This finding aligns with Mulyasa's view that teaching competence is shaped not only by theoretical understanding of pedagogical principles, but also by the accumulation of practical experience, psychological readiness, and the capacity for reflective practice in instructional settings. Therefore, while microteaching plays a significant role in enhancing teaching skills, continuous practice and reflective development remain essential for achieving comprehensive professional competence (Mulyasa, 2013).

The existence of this difference is statistically supported by the results of the independent two-sample t-test, which demonstrate a significant disparity in basic teaching skills between students who have completed the microteaching course and those who have not. Students who participated in microteaching achieved a higher mean score (110.52) compared to their counterparts who had not taken the course (93.34), indicating a notable variation in competency levels between the two groups. Furthermore, the obtained significance value (p-value) of 2.42×10^{-9} is substantially lower than the established alpha level of 0.05 ($p < 0.05$). This statistical evidence leads to the rejection of the null hypothesis (H_0) and the acceptance of the alternative hypothesis (H_1). Therefore, it can be concluded that participation in the microteaching course is associated with a statistically significant difference in students' basic teaching skills.

Beyond statistical significance, the strength of the observed difference was further confirmed by the calculation of Cohen's d, which yielded an effect size of 1.88. This value is classified as a very large effect, indicating that the disparity in basic teaching skills between the two groups is not only statistically meaningful but also practically substantial. In other words, the influence of the microteaching course extends beyond mere numerical variation and reflects a strong and meaningful contribution to the development of students' teaching competencies.

The overall findings demonstrate a significant difference in basic teaching skills between students who have completed the Microteaching course and those who have not. Descriptively, students

who participated in Microteaching achieved higher average scores compared to those without such experience. This pattern suggests that structured instructional exposure within the Microteaching course plays a critical role in enhancing foundational teaching competencies. These findings are consistent with the study conducted by Fatima and Masrurah (2025), which concluded that Microteaching effectively improves students' instructional skills, particularly in designing lesson plans, delivering subject matter, managing classroom dynamics, and fostering effective communication with learners. These findings not only reinforce the positive contribution of Microteaching to the development of basic teaching skills but also reveal differences across specific teaching skill indicators. The largest difference was found in explaining skills, with a mean difference of 2.93, suggesting that Microteaching may provide students with greater opportunities to practice presenting and explaining instructional materials clearly and systematically. In contrast, teaching small groups and individuals showed the smallest difference, with a mean difference of 0.59. This relatively small difference suggests that this particular skill may require more specific practice and feedback, particularly in adapting instruction to different group sizes and individual learning needs.

The microteaching course is specifically structured to provide systematic training in essential teaching competencies, including opening and closing lessons, explaining instructional content, questioning techniques, providing reinforcement, classroom management, and facilitating small group discussions (Sr.Sipayung R et al., 2024). Through guided teaching simulations, structured practice sessions, and constructive feedback mechanisms, students are afforded repeated opportunities to refine their pedagogical skills in a controlled yet realistic instructional setting. This developmental process contrasts with the condition of students who have not participated in microteaching, as they generally possess limited opportunities to apply theoretical pedagogical knowledge in authentic practice contexts.

These findings are further supported by pedagogical learning theories, which assert that professional teaching competence is not solely constructed through conceptual understanding, but rather through iterative cycles of practice, reflection, and experiential engagement (Sudrajat et al., 2024). Consequently, students who have undergone microteaching training tend to demonstrate greater instructional readiness and confidence compared to those who have not yet experienced such practice-based preparation.

CONCLUSION

The results of the descriptive analysis indicate that, overall, students' basic teaching skills fall within the good category. Nevertheless, students who have completed the microteaching course demonstrate a higher level of proficiency compared to those who have not participated in the course. This distinction is evident in the overall mean scores, where students who have taken microteaching achieved an average of 110.52, while those without such experience obtained an average of 93.34. These findings suggest that microteaching contributes meaningfully to the enhancement of students' basic teaching skills.

The hypothesis testing conducted through the independent samples t-test further confirms that the observed difference between the two groups is statistically significant, as indicated by a p-value of

2.42×10^{-9} ($p < 0.05$). This statistical evidence is strengthened by the Cohen's d value of 1.88, which is categorized as a very large effect size. Such a magnitude signifies that microteaching not only yields statistically significant differences but also exerts a substantial practical influence on the development of students' basic teaching skills.

Therefore, the Microteaching course can be regarded as a strategic and effective instructional component in vocational teacher education. Through systematic practice, instructional simulations, and reflective activities, Microteaching plays a crucial role in cultivating pedagogical maturity and professional readiness. The findings also highlight the importance of strengthening practical teaching experiences in vocational teacher education programs to better prepare prospective vocational teachers for real classroom settings.

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