



IMPLEMENTATION OF THE CULTURALLY RESPONSIVE TEACHING (CRT) APPROACH TO ENHANCE SELF-EFFICACY AND PEDAGOGICAL COMPETENCE OF PRESERVICE TEACHER EDUCATION STUDENTS

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Abstract. This study aims to enhance the self-efficacy and pedagogical competence of preservice teachers by implementing the Culturally Responsive Teaching (CRT) approach. CRT is an instructional framework that integrates students' cultural backgrounds into the learning process in order to increase instructional relevance, inclusivity, and meaningful engagement. The research employed a Classroom Action Research (CAR) design conducted across two cycles, each consisting of planning, implementation, observation, and reflection stages. The participants comprised 50 preservice teachers, including 10 males and 40 females. Data on self-efficacy and pedagogical competence were collected using questionnaires and structured observation sheets, and subsequently analyzed using descriptive quantitative techniques. The findings indicate a substantial improvement in both self-efficacy and pedagogical competence. In Cycle I, improvements were observed but remained suboptimal, with 52% of participants categorized as having good self-efficacy and only 27% demonstrated good pedagogical competence. Following the implementation of Cycle II, preservice teachers' self-efficacy increased markedly, with 71% classified as good and 8% as very good, while pedagogical competence reached 78% in the good category and 6% in the very good category. Furthermore, the average learning outcomes improved consistently, increasing from 65 in the pre-cycle phase to 72 in Cycle I and reaching 92 in Cycle II. Classical learning mastery also showed a significant rise, reaching 89%, which falls within the very high category. These results suggest that the application of Culturally Responsive Teaching effectively strengthens both the psychological and pedagogical capacities of preservice teachers.

Keywords: Culturally responsive teaching, self-efficacy, pedagogical competence, preservice teacher.

1. Introduction

Education plays a fundamental role in shaping individual quality and enhancing a nation's competitiveness. Indonesia is currently striving to realize its grand vision of Indonesia Emas 2045, which places the development of high-quality human capital as a top national priority. To achieve this vision, the government has outlined its development trajectory through the National Medium-Term Development Plan (RPJMN) 2025-2029, which articulates the Asta Cita as eight core mandates guiding national development (1).

One of the key pillars of the Asta Cita agenda is enhancing human resource competence by strengthening education and technology integration, particularly by improving educator quality and optimizing the use of learning technologies (2).



The rapid advancement of technology has compelled the education sector to continuously adapt and innovate, particularly in instructional practices. Preservice teachers, including those specializing in economics education, are required not only to master academic content but also to demonstrate critical, creative, innovative, active, and collaborative competencies in responding to the complexities of the digital era (3).

In addition, they must be capable of understanding students' cultural and social contexts, fostering meaningful instructional interactions, and optimizing the integration of technology into the learning process (4). These conditions underscore the necessity of instructional approaches that can accommodate cultural diversity while simultaneously strengthening preservice teachers' self-confidence and pedagogical competence.

The Culturally Responsive Teaching (CRT) approach emerges as an innovative strategy for addressing these demands. CRT positions cultural responsiveness at the core of the instructional process and is grounded in five key components. First, self-identification refers to teachers' capacity to recognize and critically examine their own cultural backgrounds, identities, and potential biases that may influence instructional interactions. Second, cultural understanding involves the ability to acknowledge, value, and strategically incorporate students' cultural backgrounds as meaningful learning resources. Third, collaboration emphasizes reciprocal partnerships between teachers and students in fostering inclusive and participatory learning environments. Fourth, critical reflection denotes teachers' ongoing ability to critically evaluate and refine their instructional practices. Finally, transformative construction refers to the development of instructional strategies that promote active engagement and equitable participation among all learners (5,6).

These five components function not only as a framework for culturally grounded instruction but also as mechanisms that strengthen preservice teachers' psychological and professional capacities. Ladson-Billings (7) demonstrated that teachers who implement CRT exhibit higher levels of instructional self-confidence, as they perceive themselves as more capable of managing cultural diversity in the classroom.

Similarly, Siwatu (8) found that a robust understanding of CRT significantly enhances preservice teachers' teaching self-efficacy, particularly in multicultural classroom contexts. Furthermore, research by Morrison, Robbins, and Rose (9) confirms that integrating CRT positively influences pedagogical competence, particularly in instructional planning, the selection of appropriate teaching strategies, and the ability to establish positive and meaningful relationships with students.

In the Indonesian context, Hutchison and McAlister-Shields (10) emphasize that CRT has the potential to enrich preservice teachers' readiness to understand and engage with cultural diversity. However, in-depth empirical investigations examining its influence on self-efficacy and pedagogical competence remain limited. Consequently, the implementation of CRT in higher education represents a strategic opportunity to strengthen these two critical competencies required of preservice teachers in the digital era.

The urgency of strengthening self-efficacy and pedagogical competence is also reflected in national regulatory frameworks. Regulation of the Minister of Education and Culture of Indonesia No. 16 of 2007 stipulates that pedagogical competence constitutes a core dimension of teacher professionalism, encompassing the ability to design, manage, and evaluate learning in accordance with students' characteristics.

Furthermore, the Merdeka Belajar Kampus Merdeka (MBKM) policy requires preservice teachers to be adaptive, creative, and confident in addressing instructional challenges, attributes that are strongly shaped by self-efficacy (11). In the absence of robust self-efficacy, preservice teachers may encounter difficulties in exercising professional judgment and engaging effectively in classroom interactions.



Findings from preliminary observations in the Instructional Design course indicate that a number of students continue to have difficulty developing culturally sensitive instructional plans. When implementing these lesson plans, classroom interactions often remain passive, and students demonstrate limited capacity to guide learners toward active engagement.

Hafner (13) asserts that preservice teachers with low self-efficacy are more likely to withdraw or disengage when confronted with unresponsive classroom environments, which, in turn, negatively affects pedagogical practice and students' motivation to learn. These conditions further underscore the urgent need to strengthen self-efficacy and pedagogical competence among preservice teachers in economics education.

Given this background, integrating the CRT approach is highly relevant as an instructional strategy that not only strengthens cultural understanding and social relationships within the classroom but also enhances preservice teachers' self-efficacy and pedagogical competence. This study offers both scholarly and practical contributions by informing the design of culturally responsive, inclusive, and adaptive learning models aligned with the professional demands of 21st-century teaching.

Accordingly, this research not only addresses existing gaps in the literature regarding the implementation of CRT in higher education but also supports national efforts to develop high-quality human resources capable of navigating cultural diversity and the challenges of the digital era.

Overall, this study seeks to address the following central research question: Does implementing the CRT approach improve self-efficacy and pedagogical competence among preservice teachers in economics education? By addressing this question, the study is expected to make substantive contributions to the development of curricula and instructional methodologies, as well as to enhancing the professional readiness of preservice economics teachers to respond to cultural diversity and the evolving dynamics of teaching and learning in the digital era.

2. Methods

This study employs a Classroom Action Research (CAR) design. The CAR model adopted in this research is the Kemmis and McTaggart model (15), which consists of four iterative stages: planning, acting, observing, and reflecting. The study was conducted over two cycles, with each cycle encompassing these four stages. According to Kemmis and McTaggart (15), CAR is defined as a systematic examination of learning activities as deliberate actions that occur collaboratively within a classroom context.

Furthermore, as articulated by Aqib et al. (16), CAR is a form of scientific inquiry oriented toward resolving instructional problems through intentional actions aimed at improving both the learning process and learning outcomes.

The research participants comprised 50 preservice teachers in economics education (Class A). Data were collected using tests, observations, and documentation techniques. The data analysis focused on examining improvements in self-efficacy and pedagogical competence among the preservice economics teachers.

The performance indicators targeted in this study were as follows: 1) an increase in preservice teachers' self-efficacy to at least 60% in the good category; 2) an increase in pedagogical competence to at least 60% in the good category; and 3) at least 60% of preservice teachers achieving individual learning mastery in the Instructional Design course, as determined by the teaching team, with a minimum achievement score of 75.

The research was conducted at the Faculty of Economics and Business, Universitas Jenderal Soedirman, during the period May-July 2025.

This study utilizes both quantitative and qualitative data. The quantitative data consist of students' learning outcomes, which were analyzed using descriptive statistics, specifically

calculating learning mastery percentages and class mean scores. These data were obtained by administering achievement tests at the end of each research cycle.

The percentage of learning mastery was calculated using the following formula:

$$P = \frac{\sum \text{Students who have completed their studies}}{\sum \text{All students}} \times 100\%$$

In addition, the class mean score was calculated using the following formula:

$$\bar{x} = \frac{\sum X}{\sum N}$$

Where:

$\bar{x}$ = mean (average) score

$\sum X$ = total score obtained by all students

$\sum N$ = total number of students

The calculation of percentages using the above formulas was conducted in accordance with the learning mastery criteria that had been previously agreed upon by the teaching team, namely, a minimum achievement score of ≥ 75 .

The qualitative data comprised learning outcomes and observational findings related to the instructional process, particularly concerning students' self-efficacy and pedagogical competence. Qualitative data were analyzed descriptively and presented in narrative form, categorized according to predefined indicators in order to derive systematic conclusions.

Students' learning outcomes were also qualitatively interpreted using the learning achievement criteria presented in Table 1 (17).

Table 1. Criteria for Students' Learning Achievement Levels (%)

Achievement Level	Interpretation
> 80 %	Very high
60-79 %	High
40-59 %	Moderate
20-39 %	Low
< 20 %	Very low

Observational data obtained from the learning process, specifically related to self-efficacy and pedagogical competence, were collected using structured observation sheets and analyzed qualitatively to derive meaningful conclusions. The analysis was guided by the criteria presented in Table 2, which outlines the benchmarks for interpreting instructional achievement and learning success (17).

Table 2. Guidelines for Analyzing Learning Achievement

Achievement of Learning Objectives	Qualification	Level of Instructional Success
85-100 %	Very good	Successful
65-84 %	Good	Successful
55-64 %	Fair	Unsuccessful
0-54 %	Poor	Unsuccessful

The data sources in this study were derived from students, lecturers, and institutional documents. Data collection was conducted using multiple techniques, including observation, testing, documentation, and interviews. The observation method was employed to examine students' self-efficacy and pedagogical competence during the learning process. The testing method was administered to students in both group-based and individual formats. Group-based assessment data were obtained from students' worksheets, while individual assessment data were derived from students' formative test results.

The documentation method was used to collect data on students' identities and baseline learning outcomes prior to the intervention. In addition, interviews were conducted at the pre-intervention stage and at the end of each research cycle to capture in-depth reflections on the learning process and instructional improvements. To ensure the validity and trustworthiness of the data, this study employed triangulation techniques, specifically data-source and method triangulation. Data credibility was established by cross-checking and comparing findings obtained from observations, interviews, and documentary evidence.

Figure 1 illustrates the CAR procedure based on the Kemmis and McTaggart model (18).

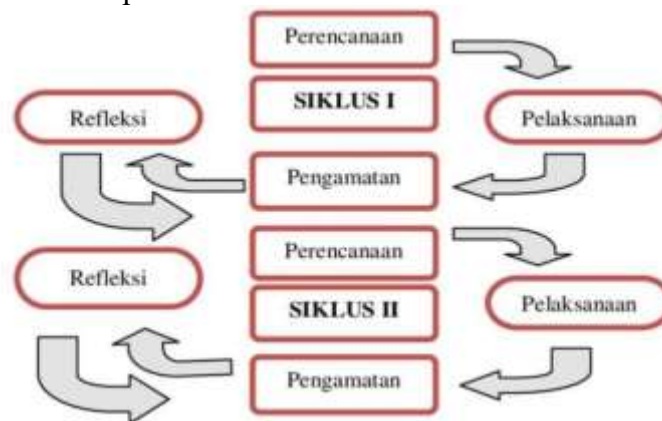


Figure 1. CAR Model by Kemmis and McTaggart (18)

3. Results and Discussion

3.1. Result

3.1.1. Pre-Cycle Phase

The pre-cycle phase, also referred to as the pre-intervention stage, was conducted to identify students' initial conditions prior to the implementation of Cycle I and Cycle II. Based on preliminary findings from interviews with the teaching team for the Instructional Design course, the majority of students had difficulty developing instructional plans that could be effectively implemented in classroom practice. Consequently, classroom activities tended to remain passive, and preservice teachers demonstrated limited ability to guide students toward active participation in the learning process.

Hafner (13) notes that teachers and preservice teachers with low self-efficacy are more likely to withdraw or give up more quickly when students exhibit low levels of classroom participation. Low self-efficacy may adversely affect pedagogical practices, student motivation, and overall learning outcomes (14). These observations further suggest that students' pedagogical skills were still insufficient at the pre-intervention stage.

This condition was also reflected in the students' academic performance, as indicated by a mean score of 65, which falls below the predetermined learning mastery criteria. The classical learning mastery achieved during the pre-cycle phase is presented in Table 3.



Table 3. Students' Classical Learning Mastery at the Pre-Cycle Stage

No.	Learning Mastery	Pre-Cycle	Percentage
1	Mastery achieved	16	32%
2	Not achieved	34	68%

Source: Processed primary data, 2025

3.1.2. Cycle Results

Table 4. Observational Results of Self-Efficacy Across Research Cycles

No.	Category	Cycle I	Cycle II
1	Poor	9%	0%
2	Fair	39%	21%
3	Good	52%	71%
4	Very Good	0%	8%
Total Students		50	50

Source: Processed primary data, 2025

Table 5. Observational Results of Pedagogical Competence Across Research Cycles

No.	Category	Cycle I	Cycle II
1	Poor	9%	0%
2	Fair	39%	21%
3	Good	52%	71%
4	Very Good	0%	8%
Total Students		50	50

Source: Processed primary data, 2025

The results of the achievement tests indicate a consistent improvement in students' learning outcomes across the research cycles. The class mean score increased from 72 at the end of Cycle I to 92 at the end of Cycle II.

Table 6. Improvement in Learning Outcomes Across the Pre-Intervention, Cycle I, and Cycle II Phases

No.	Classical Learning Mastery	Pre-Intervention		Cycle I		Cycle II	
		Students	%	Students	%	Students	%
1	Mastery achieved	16	32	22	43	45	89
2	Mastery not achieved	34	68	28	57	5	11

Source: Processed primary data, 2025

3.2. Discussion

The progression of results from the pre-intervention phase to Cycle I, and subsequently from Cycle I to Cycle II, demonstrates a substantial and consistent improvement, indicating that the instructional interventions were implemented in alignment with the predetermined performance indicators.

1.1.1. Self-Efficacy Observation Results

The findings of this study reveal that implementing the CRT approach had a positive and significant impact on preservice teachers' self-efficacy. The gradual improvement observed from Cycle I to Cycle II is consistent with prior studies (20, 21, 22), which report that the application of CRT leads to significant increases in preservice teachers' self-efficacy.

Furthermore, these findings corroborate prior research highlighting CRT's capacity to strengthen preservice teachers' confidence in managing culturally diverse learning environments. Fitchett (19) found that integrating CRT principles into methods courses significantly enhanced preservice teachers' confidence in designing and implementing culturally responsive instructional strategies. This evidence is further supported by Ulbricht (20), who reported that an eight-week Identity Project intervention effectively increased CRT efficacy by fostering professional identity development, critical reflection, and cultural awareness among preservice teachers. Additionally, Watson (23) demonstrated that implementing CRT-based case learning significantly improved culturally responsive classroom management self-efficacy, a critical component of preservice teachers' capacity to manage multicultural classrooms.

3.2.1. Pedagogical Competence Observation Results

Consistent with the observed improvement in self-efficacy, a growing body of research indicates that the CRT approach also directly strengthens preservice teachers' pedagogical competence. Gay (5) asserts that CRT provides a pedagogical framework that enables teachers to design instructional strategies aligned with students' cultural contexts, thereby enhancing their ability to deliver content effectively, facilitate meaningful learning interactions, and manage classrooms efficiently. Similarly, Morrison, Robbins, and Rose (9) found that CRT-based training significantly improved the quality of instructional planning, the selection of teaching methods responsive to student diversity, and teachers' capacity to build positive relationships with learners.

The gradual improvement in pedagogical competence observed from Cycle I to Cycle II in this study is consistent with previous findings (24, 25, 26), which report that CRT interventions enhance teachers' pedagogical competence, particularly in instructional planning and differentiated teaching strategies. Comparable evidence is presented by Siwatu (27), who demonstrated that CRT-based learning experiences expand preservice teachers' pedagogical repertoires by encouraging the adoption of adaptive and reflective instructional practices. Furthermore, Ladson-Billings (7) emphasizes that teachers who implement CRT are better able to create inclusive, intellectually challenging, and participatory learning environments—key indicators of pedagogical competence.

The findings of this study are also consistent with Wiyono (31), who emphasizes that pedagogical competence is a fundamental foundation for teachers in carrying out effective instruction that is adaptive to students' needs. In this context, Culturally Responsive Teaching (CRT) is a strategic approach that not only helps pre-service teachers understand their students' cultural backgrounds but also enhances their ability to select appropriate instructional methods, media, and strategies. This aligns with Wiyono's (31) view that pedagogically competent teachers can adjust their instructional designs to classroom dynamics, thereby improving the quality of interactions and student learning outcomes.

3.2.2. Learning Outcomes in the Instructional Design Course

The gradual improvement in learning outcomes observed from the pre-intervention phase to Cycle I and subsequently to Cycle II is consistent with previous studies (28, 29), which report significant increases in average course GPA and overall learning gains, including progression toward higher cognitive levels within Bloom's Revised Taxonomy, alongside enhanced confidence in students' scholarly communication.

Moreover, Vasquez (30) demonstrated that implementing CRT increases the relevance of instructional content to students' learning experiences, strengthens interest in education-related

courses, and improves perceptions of academic performance and information retention compared with pre-CRT conditions.

Taken together, this body of empirical evidence reinforces the present study's findings, indicating that implementing CRT not only enhances preservice teachers' self-efficacy in addressing cultural diversity in the classroom but also strengthens their pedagogical competence in designing, implementing, and evaluating culturally responsive instruction. Accordingly, CRT may be regarded as a strategic pedagogical approach for preparing preservice teachers who are adaptive, confident, and professionally competent within multicultural educational contexts and the digital era.

4. Conclusion

Based on the results and discussion, it can be concluded that learning implemented through the CRT approach is effective in enhancing both self-efficacy and pedagogical competence of pre-service teacher students. Self-efficacy, as assessed across several dimensions, demonstrated a substantial increase from Cycle I to Cycle II. In Cycle I, out of 50 students, only 52% (26 students) were classified as having good self-efficacy, with none reaching the very good category. By Cycle II, this proportion increased to 71% (36 students) in the good category, while an additional 8% (4 students) attained the very good category.

A similarly significant improvement was observed in pedagogical skills. In Cycle I, only 27% (14 students) of the 50 participants demonstrated pedagogical competence at a good level, with no students classified as very good. However, in Cycle II, the proportion of students with good pedagogical competence rose markedly to 78% (39 students), and 6% (3 students) achieved the very good category. These findings indicate that the CRT approach not only fosters students' confidence in their teaching abilities but also substantially strengthens their pedagogical skills.

In addition, students' learning outcomes showed significant improvement from the pre-cycle phase through Cycle I and Cycle II. The average student achievement in the pre-cycle phase was 65, with a classical mastery level of 32%, indicating low achievement. This figure increased in Cycle I to an average score of 72, with a classical mastery level of 43%, which corresponds to a moderate level of achievement. In Cycle II, learning outcomes improved further, reaching an average score of 92 with a classical mastery level of 89%, which falls within the very high achievement category.

This instructional innovation can be implemented by educators in classroom settings to make the learning process in the Instructional Design course more engaging, effective, and meaningful for students. Prior to implementation, educators are encouraged to design a cultural matrix aligned with one or more cultural contexts that are most relevant to the instructional content. Through such contextual adaptations, the learning process is expected to generate a greater, more sustainable impact on students' learning experiences.

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