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TEACHING ENGLISH THROUGH UbD: CHALLENGES OF INDONESIAN PRE-SERVICE TEACHERS

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A B S T R A C T S

Understanding by Design (UbD) can guide pre-service teachers (PST) in creating intended learning outcomes. However, there is still limited research focusing on the mechanisms of UbD. Therefore, this study aimed to assess UbD's impact on pre-service teachers' teaching and assessment skills and the challenges they face. One group-pre-test post-test design within a quasi-experiment was conducted to examine the ongoing process of UbD implementation in a real classroom setting. The investigation involved 17 PSTs from the Faculty of Teacher Training and Education in Denpasar for 7 weeks. The instruments included a teaching performance rubric, an observation checklist, and review questions. The data were analyzed using descriptive statistics, paired sample t-tests, and thematic analysis. The results indicated that PSTs' teaching skills significantly improved with Understanding by Design (UbD), as evidenced by an increase in the average score from 70.74 in Cycle 1 to 81.91 in Cycle 2, with more students achieving higher performance ratings after receiving feedback and reinforcement. Referring to T-test outputs $p=0.000 > \alpha=0.05$ This study concludes that UbD significantly impacts PST's teaching skills however, challenges remain in connecting cognitive-behavioral skills to real-world applications. Future research should explore specific strategies to address these challenges and investigate UbD's long-term effects on teaching precision and student engagement.

A R T I C L E I N F O

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INTRODUCTION

Pre-service teachers (PSTs) engaged in teaching practice through paired teaching simulations must be equipped with curriculum instruction, essential pedagogical knowledge, teaching skills, and assessment capabilities. Nowadays, UbD is a well-known curriculum planning model that assists teachers and pre-service teachers in organizing lessons around clear learning outcomes. Developed by Grant Wiggins and Jay McTighe (Wiggins, 2005). UbD promotes a backward design process, encouraging educators to start with defined goals and plan activities that directly support those objectives. This approach enables PSTs to create their teaching and learning programs based on the learning environment and the characteristics of their students (Ledger & Fischetti, 2020). UbD is essential because it shifts the focus from merely covering content to achieving meaningful learning outcomes. By starting with clear goals and planning backward, educators ensure that every lesson, activity, and assessment supports students' deeper understanding and retention of core concepts (Karakaş & Yükselir, 2021). Pre-service teachers should begin by identifying lesson objectives, evaluating learning

experiences, and applying effective teaching strategies to meet their goals (Azrai et al., 2020). As a result, in this process, instructors play a crucial role in guiding, mentoring, and evaluating students, helping them develop into creative, knowledgeable, and professional educators with UbD.

Even though, teaching skills are essential for PSTs, knowledge and ability in planning the teaching and assessing procedures are important tasks. In UbD principles, prospective teachers are required not only to master the subject matter but also to understand the dynamics of classroom interactions, including how to respond to students from diverse backgrounds and with varying needs (Burden, 2020). A teacher's ability to foster student engagement and minimize disruptive behavior is crucial for maintaining a safe, productive, and effective learning environment (Stevenson et al., 2020). The inability to manage student behavior can lead to a loss of focus during instruction and often results in feelings of frustration for both teachers and students. Classroom management skills and interpersonal communication are essential for success during micro-teaching. Ozen and Yıldırım (2020) explain that beginning teachers must recognize that each class possesses its own unique characteristics and distinct classroom management dynamics. Additionally, the ability to creatively utilize teaching media, deliver material clearly, and provide constructive feedback are vital teaching skills that can help mitigate disruptive student behavior (Wardana et al., 2022). Therefore, lecturers can present both theoretical and empirical experiences as teaching models for prospective teachers to emulate in various classroom situations and when facing different challenges.

A comparative study between the contexts of Beyond and Indonesia regarding the implementation of UbD and the associated challenges is presented. (Sadik and Ergulec (2023) indicated that setting meaningful goals using UbD has helped pre-service teachers shift from initial negative perceptions to a more positive view of course design and teaching practices. Lumbreras Jr and Rupley (2020) revealed that UbD improved PSTs' knowledge of lesson design, resulting in an enhanced understanding of teaching concepts and the effective use of both formative and summative assessments. Ozyurt et.al., (2021) indicated that the adoption of the UbD model in science teaching positively affected students' academic achievements and the retention of learning for the lessons under investigation. Meanwhile, in the Indonesia context, Dari et al., (2024) revealed that after implementing UbD, students had 6 abilities, namely explaining, interpreting, applying, taking a perspective, empathizing and having self-knowledge. However, the role of teachers is very essential in UbD, which involves designing, implementing, and directing learning activities. However, Aristanti and Fatayan (2024) indicated that showed that the experimental class with UbD-based problem-based learning model treatment was superior to its post-test value compared to the control class. In addition, Kuntari et al., (2019) argued that UbD could be used as an alternative design construction as it helps teachers to relate the three main components, namely learning objectives, evaluations, and steps. It eases the student's understanding the materials comprehensively and obtaining a maximum score.

From those findings, UbD has an important role in gaining a better quality of curriculum design. Therefore, this study focuses on the mechanisms and challenges of UbD implementation by PSTs in the role of micro-teaching. This research aims to investigate how pre-service teachers apply the UbD in paired teaching and to identify the challenges they encounter.

In recent years, pre-service teachers have engaged in pair teaching within micro-teaching labs to practice their teaching skills. micro-teaching is a widely utilized technique in teacher education programs, particularly for pre-service teachers, allowing them to develop their teaching abilities in a controlled and reflective environment before entering actual classrooms (Luo & Li, 2024). During micro-teaching sessions, pre-service teachers participate in brief, focused teaching practices, often in front of peers or mentors (Cinici, 2016; Mikulec &

Hamann, 2020). This experience helps them cultivate classroom management skills, instructional strategies, and confidence (Sudrajat et al., 2024). Research indicates that micro-teaching significantly contributes to skill development, as it provides pre-service teachers with constructive feedback to refine their teaching methods (Jeon et al., 2022). For example, Vígh (2024) found that micro-teaching effectively bridges theoretical knowledge with practical application, enabling teachers to implement teaching principles in real scenarios. Despite these advantages, micro-teaching can also pose challenges for pre-service English teachers, including performance anxiety, limited lesson planning time, and the need to adapt feedback effectively.

Pre-service English teachers encounter unique challenges in micro-teaching, particularly when instructing English as a Foreign Language (EFL) (Hoang & Wyatt, 2021). Research indicates that these teachers often struggle to design lessons that effectively promote language skills while accommodating diverse student needs and varying levels of language proficiency (Hao et al., 2019). In EFL contexts, pre-service teachers may also face difficulties with pronunciation, grammar explanations, and managing language-related misconceptions (Fan, 2022). Furthermore, their limited experience with language teaching methodologies can impede their ability to engage students effectively. Common challenges include integrating language skills and maintaining student interest during micro-teaching sessions, as noted by (Deroey, 2023). Consequently, while micro-teaching offers valuable practice opportunities, it also highlights the necessity for targeted support and training to address specific language-teaching challenges in pre-service education. Therefore, a new paradigm of teaching called Understanding by Design (UbD) can be adopted to make the objectives of the teaching can be achieved.

The incorporation of technology is a fundamental aspect of modern teaching paradigms. Digital tools, including online platforms and educational apps, offer varied resources that support differentiated instruction and address diverse learning needs (Haniya & Roberts-Lieb, 2017). Nonetheless, challenges such as the digital divide and the necessity for thorough teacher training persist. Additionally, the use of artificial intelligence and adaptive learning technologies provides personalized learning experiences tailored to individual student performance. While these technologies offer significant benefits, they also raise concerns about data privacy and AI's ethical use in education. Educational theories are increasingly shifting towards student-centered learning and integrating Social-Emotional Learning (SEL). In the context of the new teaching paradigm, Understanding by Design (UbD) plays a crucial role in reshaping curriculum planning and instructional practices. Developed by UbD is a framework that emphasizes backward design, where educators start by identifying desired learning outcomes and then work backward to develop the instruction and assessments needed to achieve those outcomes.

In conclusion, the evolution of teaching paradigms signifies a shift towards more dynamic, student-centered, and technology-enhanced educational practices. These contemporary approaches address the limitations of traditional models by fostering deeper engagement, critical thinking, and comprehensive skill development. Continuous research and adaptation are essential for overcoming existing challenges and fully harnessing the benefits of these innovative teaching paradigms. In alignment with the issue and the theoretical synthesis, this study presents two research questions: (1) How do pre-service teachers implement Understanding by Design (UbD) in paired teaching?; (2) What challenges do pre-service teachers encounter when applying the new teaching paradigm?

This study contributes to teacher education by offering insights into how pre-service teachers implement the Understanding by Design (UbD) framework in collaborative teaching, thereby informing curriculum improvements in teacher training programs. Additionally, it highlights practical solutions to enhance innovative, student-centered teaching.

RESEARCH METHOD

Research Design

This study employed a mixed-methods approach, combining quantitative and qualitative research, to explore how pre-service teachers applied Understanding by Design (UbD) and to identify the challenges they encountered while implementing this innovative teaching paradigm.

To achieve the first objective, one group-pre-test post-test design within a quasi-experiment was conducted to examine the ongoing process of UbD implementation in a real classroom setting. Quantitative data were collected using pre-tests to assess participants' initial familiarity with UbD and post-tests to evaluate their comprehension and teaching performance after implementation of UbD. The mean scores of the pre-tests and post-tests were compared using a single-group pre-test and post-test statistical analysis to determine any significant differences.

For the second objective, qualitative research was employed to identify the challenges pre-service teachers faced when teaching with UbD. These challenges were observed using a Classroom Observation Checklist (COC) and further explored through semi-structured interviews. After analyzing the participants' strengths and weaknesses, interviews were conducted around three themes: challenges in implementing UbD, reflections on the UbD process, and the impact of UbD on teaching practices. The results of the interviews were used to support the primary data and provide deeper insights into the challenges and outcomes of UbD implementation.

Subjects of the study

This research involved 17 pre-service teachers enrolled in a micro-teaching course during their sixth semester. The group comprised 7 male and 10 female students, aged between 21 and 22 years. Observations of these students were conducted for six months. The participants received instruction from the researcher on how to teach using Understanding by Design (UbD) and engaged in paired teaching in the micro-teaching lab. To measure participants' familiarity with UbD before the study, the diagnostic open-ended questions were administered to map how they plan the objectives, assess the student's performance, and apply the teaching strategy.

Instruments

For the classroom action research, data were collected using a teaching performance rubric. The PSTCs were observed and evaluated on their ability to open, transfer, and close the lesson. The participants' teaching performances are judged using a 0-100 scale. The proficiency categories are interpreted based on the mean (M) score range: M 0–30 = "very poor", M 31–50 = "poor", M 51–70 = "fair", M 71–85 = "good", M 86–100 = "excellent". The rubric of participants Teaching criteria performance rubric with a 0-100 scale is presented in Table 1.

Table 1
Teaching Criteria Performance Rubric

No	Criteria	Description	Scale 0-100
1	Planning and Clarity of Objectives	Lesson objectives align with UbD principles, particularly focusing on clear, measurable outcomes that reflect deep understanding.	1-10
2	Engagement and Interaction	Students are engaged, including interactive methods and questioning techniques that promote critical thinking	1-10
3	Lesson Structure and Flow	the lesson follows a logical, well-structured sequence from introduction to conclusion, ensuring smooth transitions between activities	1-10

4	Content Knowledge and Relevance	the teacher's mastery of content and the relevance of materials used, with an emphasis on real-world application and meaningful learning experiences.	1-10
5	Assessment and Feedback	the teacher's ability to adjust the lesson based on students' needs and responses, displaying flexibility in approach	1-10
6	Adaptability and Responsiveness	the teacher's ability to adjust the lesson based on students' needs and responses, displaying flexibility in approach.	1-10
7	Professionalism and Collaboration	the teacher's communication, demeanor, and collaboration with their teaching partner, supporting an effective teaching and learning environment.	1-10
8	Use of Instructional Resources	teacher uses many types of media and resources in teaching English .	1-10
9	Differentiation and Inclusion	teacher uses differentiated strategies to meet diverse student needs, including accommodations or modifications for varied learning styles and abilities.	1-10
10	Reflection and Continuous Improvement	teacher engages in self-reflection and is open to constructive feedback, actively seeking ways to improve instructional practices in alignment with UbD principles.	1-10
		Total	**1-100**

The rubric was used to measure the pre-performance to measure their teaching design before UbD and post-performance after UbD was implemented. Meanwhile, the qualitative data were taken from the Classroom Observation Checklist (COC). The COC was utilized to record and evaluate how the participants implemented Understanding by Design (UbD) during pair-teaching sessions, while the FN was employed to capture contextual information, interactions, and any significant occurrences that the observation checklist may not have addressed. The rubric of an observation checklist is presented in Table 2.

Table 2
Rubric of Observation Checklist

No	Criteria	Yes	No
1	Lesson objectives are clearly stated		
2	Lesson objectives are aligned with outcomes		
3	Evidence of backward design		
4	Essential questions guide learning		
5	Activities promote understanding of concepts		
6	Assessments align with objectives		
7	Authentic performance tasks included		
8	Student-centered learning is promoted		
9	Flexibility and adaptation of instruction		
10	Student reflection and feedback		
11	Instruction is differentiated		
12	Transfer of learning is emphasized		

To ensure the reliability and validity of the data, several measures were undertaken. For the quantitative data, inter-rater reliability was checked during the assessment of teaching designs using the rubric for both pre-performance and post-performance evaluations, ensuring consistent scoring among evaluators. For the qualitative data, triangulation was employed by cross-referencing findings from the Classroom Observation Checklist (COC), pair-teaching evaluations, and semi-structured interviews. This approach ensured the credibility of the themes derived, as multiple data sources were used to confirm the identified patterns and insights.

Data Analysis

The researcher collected quantitative data through descriptive statistics and analyzed qualitative data from observations and interviews using thematic analysis to identify key themes related to the implementation of Understanding by Design (UbD) and the challenges faced by pre-service teachers. T-tests were utilized to compare pre-test and post-test scores to assess the effectiveness of the intervention, also with a significance level of $\alpha = 0.05$. The comparison test results indicate a significant relationship between the mean score of the pretest and the mean score of the post-test. The identified themes include challenges in implementing UbD, reflections on the UbD process, and the impact of UbD on teaching practices. Data triangulation was employed to ensure the validity of the findings, comparing results from observations and journals to enhance the credibility and depth of the analysis.

RESEARCH FINDINGS AND DISCUSSION

The effectiveness of teaching through UbD

The study's first finding addresses the research question and reveals the initial objective, which explains how the PSTCs implement Understanding by Design (UbD) in a pair-teaching performance. The UbD instruction was conducted over two cycles, each consisting of two half-hour sessions. During the remaining time, students performed the teaching in front of their peers while also taking on the role of each session deployed incorporated interconnected components: action, observation, and reflection. The PSTCs were observed and evaluated on their ability to open, transfer, and close the lesson. The students' teaching performances are judged using a 0-100 scale. The proficiency categories are interpreted based on the mean (M) score range: M 0–30 = "very poor", M 31–50 = "poor", M 51–70 = "fair", M 71–85 = "good", M 86–100 = "excellent".The distribution of the student's performance across the cycles is in Table 3.

Table 3
Frequency Distribution

Participants	**Pre-test**	**Cycle 1**		**Cycle 2**		**Post-test**
17 PSTCs	Mean	Session 1	Session 2	Session 3	Session 4	Mean
Total	1035	1140	1265	1360	1425	1297
Mean	60.88	67.06	74.41	80.00	83.82	76.32
Category	Fair	Fair	Good	Good	Good	Good

The average scores presented in Table 3 indicate that implementing Understanding by Design (UbD) in teaching Pre-Service Teacher Candidates (PSTCs) is more effective than the traditional approach. Before receiving instruction in UbD teaching techniques, the average pretest score for teaching performance was classified as "poor." The lowest score was 40.00 and the highest score was 80.00. It was likely due to limited familiarity with backward design principles, inadequate alignment between learning objectives and instructional activities, and a lack of structured frameworks for designing assessments that measure deep understanding.

Observations revealed that after the students were taught teaching principles and assessments based on UbD for 60 minutes in each session for seven weeks, there was a noticeable improvement in the quality of teaching during microteaching. Each session showed a significant increase and was categorized as "good." It was likely influenced by the participants' growing ability to design lessons with clear learning goals, integrate meaningful assessments aligned with objectives, and implement learner-centered teaching strategies that encouraged active engagement and critical thinking. Of the 17 students, 15 achieved a "good" performance, while only two students still demonstrated weaker skills. Observations revealed that five students were not yet able to teach effectively, ten students demonstrated fair teaching skills, and only two students performed well. These students struggled to open the class, present

the material, and conclude the lesson under UbD principles. The difference in achievement can be illustrated in Figure 1.

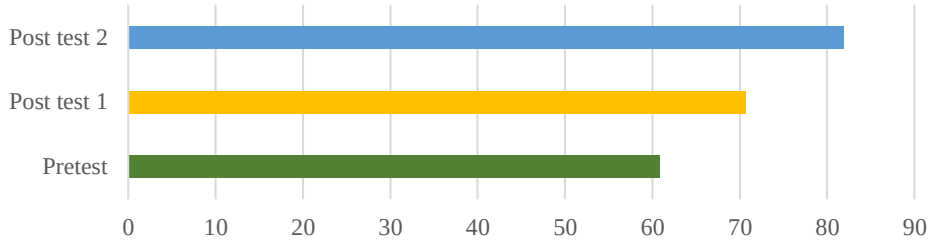

Figure 1. Difference of PSTCs' achievements

Figure 1 illustrates the differences in the quality of learning before and after students grasped the principles of teaching and assessment based on Understanding by Design (UbD). The figure indicates that the understanding and teaching skills of pre-service English teacher candidates utilizing UbD principles are significantly superior to those employing traditional methods. In Cycle 1, their teaching skills were rated as "fairly good," with an average score of 70.74, comprising 8 students in the "good" category and 9 in the "fairly good" category. Following feedback and reinforcement in various aspects of teaching with UbD, a notable improvement was observed in Cycle 2, where the average score rose to 81.91. In this cycle, 16 students were classified as "good" in implementing UbD, while only 1 student achieved an "excellent performance". While the majority were able to implement UbD effectively, they may still require further practice or deeper understanding to refine their skills and demonstrate mastery in areas such as creating highly effective assessments, fostering deeper student engagement, and seamlessly integrating all stages of the UbD framework.

This conclusion is supported by a paired sample t-test, which confirmed that both pre-test and post-test data met the criteria for normality. The Shapiro-Wilk test for the pre-test data revealed a significance value of 0.181 for group 1 and 0.909 for group 2, both exceeding 0.05. In contrast, the normality test for the post-test data indicated significance values of 0.119 for group 1 and 0.110 for group 2. These results confirm that both data sets are normally distributed, allowing for the continuation of the t-test, as presented in Table 4.

Table 4
Frequency Distribution

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pre-test – post-test	-15.412	8.839	2.144	-19.956	-10.867	-7.189	16	.000

Based on the results of the correlation test between the pre-test and post-test, the correlation coefficient was 0.759, with a significance value (Sig) of 0.00. Since the Sig value of 0.00 is less than the probability threshold of 0.05, it can be concluded that there is a significant relationship between the conditions before and after the implementation of UbD. According to the paired sample t-test, the Sig (2-tailed) value was 0.000, which is also less than 0.05. This indicates that the null hypothesis (H0) is rejected, and the alternative hypothesis (Ha) is accepted. Therefore, it can be asserted that the principles of teaching and assessment through UbD significantly enhance students' teaching skills in microteaching practice. These

assessment results confirm a substantial improvement in understanding and teaching skills based on this approach. There is a significant difference between the conditions before and after the implementation, which positively impacts the students' teaching performance.

Challenges of teaching through UbD

To assess the level of understanding of various aspects of the UbD concept, this study employed a Classroom Observation Checklist (COC) to gather supporting information regarding the number of students who comprehended the UbD concept and how they applied it. This approach facilitated the identification of contributing factors. The frequency distribution of the results is presented in Table 5.

Table 5
Frequency Distribution

No	Indicators	Yes	No	Note
1	Lesson objectives are clearly stated	12	5	Some still lack precision.
2	Lesson objectives are aligned with outcomes	14	3	Few need stronger connections.
3	Evidence of backward design	10	7	A significant number do not fully apply it.
4	Essential questions guide learning	5	12	Essential questions are rarely used,
5	Activities promote understanding of concepts	10	7	more depth needed.
6	Assessments align with objectives	11	6	some inconsistencies exist.
7	Authentic performance tasks included	8	9	need more real-world applications.
8	Student-centered learning is promoted	15	2	Most lessons encourage student engagement and responsibility.
9	Flexibility and adaptation of instruction	14	3	Teachers adapt instruction well to students' needs.
10	Student reflection and feedback	15	2	Reflection is consistently enhancing learning feedback.
11	Instruction is differentiated	10	7	Differentiation is not consistently applied across lessons
12	Transfer of learning is emphasized	16	1	Transfer skills are emphasized in nearly all lessons

The strengths of the observed lessons include a strong emphasis on student-centered learning, with 15 lessons promoting student engagement and responsibility, as well as the transfer of learning, evident in 16 lessons where students are encouraged to apply their knowledge in new contexts. Flexibility and adaptation are apparent in 14 lessons, demonstrating teachers' responsiveness to student needs, while reflection and feedback are consistently practiced in 15 lessons, supporting ongoing student development. However, there are areas for improvement, such as the use of essential questions, which are infrequently applied (5 instances), limiting inquiry-driven learning. Additionally, backward design is not fully implemented in 7 lessons, weakening the connection between objectives and assessments. Authentic performance tasks are underutilized, with only 8 lessons incorporating real-world applications, and differentiation is inconsistent, indicating a need for more tailored instruction to address diverse learning needs.

The teaching journal was used to see the alignment of students' teaching skills in applying UbD. A 0-4 scale was utilized with scores defined as follows: 1 = Poor, 2 = Fair, 3 = Good, and 4 = Excellent. This checklist was specifically designed to evaluate Pre-Service Teachers in their application of Understanding by Design (UbD) during Pair Teaching. The teaching journal is presented in Table 6.

Table 6
Frequency Alignment Distribution

No	Criteria	Indicators	Score	Frequency %
1	Lesson Planning	Lesson objectives are clearly stated and aligned with desired learning outcomes	4 3 2	7 (41%) 9 (53%) 1 (6%)
2	UbD framework applied	Activities promote understanding of concepts	4 3 2	5 (29%) 10 (59%) 2 (12%)
3	Backward Design	Evidence of backward design principles (starting with end goals and working backward to plan activities	4 3 2	8 (47%) 7 (41%) 2 (12%)
4	Differentiation	Instruction is differentiated to accommodate diverse student needs and learning styles	4 3 2	4 (24%) 11 (64%) 2 (12%)
5	Assessment Alignment	Assessment tasks are aligned with learning objectives and performance goals.	4 3 2 1	6 (35%) 8 (47%) 2 (12%) 1 (6%)

The frequency distribution is presented in Table 6 indicating that most lessons exhibited strong alignment with the UbD framework, particularly regarding clearly articulated lesson objectives and their correspondence with learning outcomes, with 3 out of 5 lessons excelling in this area. Differentiation was effectively implemented in the majority of lessons, accommodating diverse student needs. However, inconsistencies were noted in the application of backward design, with only 3 lessons fully employing this approach, while others demonstrated moderate to weak application. Similarly, the alignment of assessments varied; 2 lessons showed strong alignment between assessment tasks and objectives, while 1 lesson exhibited significant misalignment, highlighting the need for improved consistency in linking assessments to learning goals.

The qualitative data were taken from interviews with 9 participants out of 17 pre-service teachers. These participants were selected for interviews based on their teaching performance scores with UbD. Three participants were in the "good" (G) category, three in the "sufficient" (S) category, and three in the "poor" (P) category.

Theme 1: Challenges in Implementing UbD
Questions: What is the biggest challenge you faced when implementing UbD in teaching? How did you address that challenge?

Participant G1: "The biggest challenge was ensuring that the assessments I designed were truly aligned with the learning objectives. I addressed this by discussing my assessments with peers and mentors to evaluate them before implementation."

Participant S2: "I struggled to design learning activities that suited the students' needs. I tried to resolve this by using examples from the training sessions, but I still need more experience."

Participant P3*:* "I wasn't sure how to begin implementing UbD because I found the concept confusing, so I often reverted to traditional teaching methods."

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The participants faced challenges in applying new teaching methods: G1 struggled to align assessments with learning objectives but sought feedback from peers and mentors, S1

had difficulty designing student-centered activities and relied on examples from training but felt inexperienced, and P1 found the UbD framework confusing and reverted to traditional teaching methods. This highlights a need for more support and practical guidance in implementing innovative approaches.

Theme 2: Reflection on the UbD Process
Questions: What did you learn from the experience of implementing UbD? And How has the implementation of UbD affected the way you plan lessons?

Participant G4: "I learned the importance of starting lesson planning with the end learning objectives in mind. Now, I am more aware of the alignment between objectives, assessments, and learning activities, which has made my teaching process more structured."
Participant S5: "The UbD process helped me better understand the importance of learning objectives, but I sometimes struggled to ensure everything was connected properly."
Participant P6*:* "I feel that my lesson planning hasn't changed much because I am still unsure about how to implement all the stages correctly."
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The statements reflect a growing awareness of the importance of aligning learning objectives, assessments, and activities, indicating progress in understanding structured lesson planning through the UbD (Understanding by Design) framework. However, the speaker expresses difficulty in fully integrating all stages of the framework, highlighting a need for further guidance or practice to effectively implement it.

Theme 3: Impact of UbD on Teaching Practices
Questions: How do you think the implementation of UbD has influenced student learning outcomes? Have you noticed any differences in student engagement while using the UbD approach?

Participant G7: "I learned the importance of starting lesson planning with the end learning objectives in mind. Now, I am more aware of the alignment between objectives, assessments, and learning activities, which has made my teaching process more structured."
Participant S8: "There was some improvement, particularly in how students seemed to understand what they were learning better, but I sometimes struggled to keep them engaged throughout the lesson."
Participant P9 "I haven't noticed much change in the students because I still struggle to design activities and assessments that are truly effective."

The pre-service teachers acknowledge progress in lesson planning by focusing on the alignment of objectives, assessments, and activities, which has led to a more structured teaching approach. However, they express challenges in keeping students engaged and designing effective activities and assessments, suggesting that despite some improvements, they still face difficulties in achieving noticeable changes in student outcomes.

Discussion

This study has two primary objectives: to evaluate the performance of teacher candidates in Understanding by Design (UbD)-based paired micro-teaching and to analyze the alignment of UbD elements in student teaching. The first finding reveals that the students' understanding and skills in delivering UbD-based instruction are categorized as "Good" in both cycles. This

positive outcome is attributed to their grasp of the definition, mechanisms, and fundamental concepts of this approach, including the establishment of learning objectives, the alignment of assessments as, for, and of learning, and the application of appropriate teaching strategies tailored to the students' learning environment. The results of the paired t-test indicate a significant difference in abilities before and after the implementation of UbD. Teaching and assessing UbD principles can enhance students' teaching skills and their ability to evaluate student learning effectively.

These findings align with the research conducted by Ferinda et al., (2024), which demonstrated significant differences in students' interest in learning before and after the implementation of differentiated instruction based on Understanding by Design (UbD). Setiyawati et al., (2023) found that several indicators of UbD success include the ability to explain, interpret, apply, adopt different perspectives, empathize, and possess self-awareness. Within the UbD framework, the teacher serves as a learning designer, analyzing fundamental competencies and determining achievement indicators while considering the characteristics of the basic competency formulation (Putra et al., 2023). Therefore, the Understanding by Design approach assists teachers in developing learning designs with interrelated components.

The second research finding highlights the level of alignment and the challenges associated with the implementation of Understanding by Design (UbD). The components of UbD that were designed and implemented by the teacher candidates were generally aligned with the teaching steps. Their performance demonstrated that most lessons exhibited strong alignment with the UbD framework, particularly regarding clearly articulated lesson objectives and their correspondence with learning outcomes through the application of assessment as, assessment for, and assessment of learning. However, several challenges were identified. Some students still lacked precision, a few needed stronger connections, and others required more real-world applications. As a result, the understanding and teaching skills of the students were still categorized as not yet optimal. Therefore, based on reflections, it is essential to improve the understanding and consistency among the various aspects of UbD.

There have been several previous studies examining the implications and challenges of implementing Understanding by Design (UbD) among teacher candidates. Taiyabi (2021) asserts that UbD has positively transformed the lives of teachers, both personally and professionally. It fundamentally enhances the meaningfulness and relevance of school for learners, which is central to school improvement. Meanwhile, Dari et al., (2024) discovered that the implementation of the UbD strategy enables learners to develop six key abilities: explaining, interpreting, applying, adopting different perspectives, empathizing, and cultivating self-knowledge. The role of the teacher is crucial in UbD, encompassing the design, implementation, and guidance of learning activities. The findings of Yurtseven and Altun (2017) indicated that action research-based UbD studies significantly contribute to teachers' professional development and improve students' English achievement. This study suggests that a lesson planning model grounded in UbD can assist teachers in achieving the goals of Teaching English as a Foreign Language (TEFL) within the new education system.

The results of this study indicate that implementing the Understanding by Design (UbD) framework in microteaching positively affects students' performance and teaching skills. The significant improvement in the ability to plan, adjust assessments, and implement appropriate teaching strategies indicates that Understanding by Design (UbD) is effective in enhancing teaching skills. However, the challenges identified, such as the need for greater rigor and stronger connections to real-world applications. This study suggests areas for improvement in the preparation of future teachers.

These findings underscore the importance of providing ongoing support and targeted instruction to help educators develop a deeper understanding and more consistent application of UbD principles. Furthermore, the results enhance the value of UbD in overall educational

practices, aligning with notes and learning strategies. This ultimately contributes to more significant and effective experiences in student classes. Though this study revealed significant findings on UbD, the finding generalization is considered "limited" only to certain areas and certain subjects. Therefore, future studies may investigate broader areas with a bigger population to view the generalization of the study

CONCLUSION

The findings of the present study address its objectives. The first finding reveals that pre-service teachers demonstrate comprehension and teaching performance through Understanding by Design (UbD). The instruction in UbD positively influences their teaching performance. However, they need to emphasize certain components of UbD to align with students' learning behaviors and the real-life teaching environment. Pre-service teachers face challenges in teaching precision, cognitive-behavioral skills connections, and other areas that require more real-world applications.

The study positively impacts pre-service teachers' instructional performance and confidence, it also highlights key challenges, such as aligning UbD components with students' learning behaviors and real-world classroom contexts, necessitating further refinement to ensure its practical application in diverse teaching environments.

However, the study's generalizability may be limited due to the small sample size and geographic concentration, as the participants were drawn from a specific region, which may not fully represent the broader population of pre-service teachers. Furthermore, the study's findings may not fully capture the diversity of teaching contexts across different educational systems, which could affect the broader applicability of the results.

These findings suggest that while UbD is effective in enhancing pre-service teachers' instructional competencies and confidence, further refinement is necessary to ensure its components are fully adapted to real-world classroom settings. Addressing the identified challenges will be crucial in helping future teachers translate theoretical frameworks into practical, impactful teaching strategies that meet the diverse needs of students. It is recommended that teacher education programs provide more targeted support in areas where challenges were identified, such as incorporating real-world applications and enhancing the precision of teaching strategies.

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