
IMPLEMENTATION UDL IN INDONESIAN LANGUAGE AND LITERATURE: IMPROVING STUDENT ENGAGEMENT AND ACHIEVEMENT

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Abstract

This study aims to describe the effectiveness of the Universal Design for Learning (UDL) framework in the Indonesian language and literature course within the *Madrasah Ibtidaiyah* Teacher Education (PGMI) study program at UIN Antasari Banjarmasin, and to examine its impact on student engagement and learning outcomes. Employing a quasi-experimental, one-group pretest-posttest design, this study involved 131 fourth-semester students. Data were collected through objective tests, classroom observations, and interviews. The treatment was implemented in staged cycles of initial reflection, identification, investigation, action, and reflection. Quantitative data were analyzed using a paired t-test, while qualitative data were analyzed thematically. The results showed that UDL-based learning significantly improved students' academic outcomes and engagement. The average student score increased from 72.53 (grade B) on the pretest to 82.49 (grade A) on the posttest, with an N-Gain of 0.36 (moderate category) and a significance value of $p < 0.005$. In addition, students experienced increased motivation, improved access to learning resources, and higher satisfaction in attending lectures. UDL was found to be effective in creating an inclusive, adaptive, and participatory learning experience, making it a suitable strategic framework for language and literature learning in higher education, especially in preparing prospective elementary school teachers.

Keywords: higher education; inclusive pedagogy; project-based learning; student engagement; teacher education; UDL

Introduction

The teaching of Indonesian language and literature has an important position in the curriculum of the PGMI Study Program at UIN Antasari Banjarmasin because it is the main provision for students as prospective elementary school teachers. Mastery of language and literature requires an understanding of both linguistic theory and pedagogical design so that teachers can develop relevant teaching materials and foster students' critical and communicative skills (Richards & Rodgers, 2014). In practice, language and literature learning often face challenges in the form of low literacy (Adam et al., 2022), limited teaching materials (Omodan, 2024), and the diversity of student abilities that are not fully accommodated by learning strategies (Magodi et al., 2023; Muthaharoh et al., 2024). According to Cox (1998), teachers also need to understand cultural diversity as an important consideration in designing learning. In line with this idea, research reveals that differences in language, culture, and socioeconomic background make learning less inclusive and potentially cause learning outcome gaps

(Arsyad & Suadiyatno, 2024; Doboli et al., 2022), while variations in individual interests influence the level of student engagement and motivation in learning activities (Zulaikha & Laeli, 2023).

Mastery of the Indonesian language requires learning that is designed with the right approach, methods, media, and assessment. Iskandarwassid and Sunendar (2011) emphasize that teachers must determine learning strategies accurately so that students can learn effectively. Some studies have shown that the diversity of personalities, economic backgrounds (Mardin & Azrul, 2023), cultural contexts (Sujatha, 2024), and abilities of students (Koimah et al., 2024; Setiawan & Qamariah, 2023) poses a major challenge for the curriculum and demands flexible and responsive learning strategies. However, conventional learning approaches that emphasize uniformity often fail to accommodate variations in learning styles, paces, and individual needs. As a result, students with disabilities, comprehension difficulties, or different cultural backgrounds are often marginalized and do not receive fair, participatory learning experiences that are appropriate for their development (Borba et al., 2024; Kumari, 2022; Oranga et al., 1 C.E.). This condition underscores the need for a more inclusive and adaptive approach in Indonesian language learning.

Inclusive education emphasizes adaptation and support so that all students can be meaningfully involved regardless of their differences. Short and Shemshack (2023) highlight one promising alternative is personalized learning, which involves tailoring instruction based on individual backgrounds, interests, and needs through mastery-based learning and customized learning plans, giving students greater control over their learning process and creating a truly inclusive environment. To achieve this, flexible and differentiated strategies are needed. Among these approaches, the Universal Design for Learning (UDL) framework, which enhances the learning experience through adaptive teaching and assessment methods (Kapil et al., 2024). UDL offers flexibility in three main aspects, namely how material is presented (multiple means of representation), how students engage in learning (multiple means of engagement), and how they express their understanding (multiple means of action and expression) (Rearick et al., 2021). This principle means that learning is no longer uniform, but provides opportunities for students to learn according to their style, interests, and needs.

UDL is a framework designed to support the needs of all learners, including those with disabilities or from diverse cultural and linguistic backgrounds (King-Sears, 2014). Theoretically, UDL aims to eliminate learning barriers and develop reliable learners (Brandt et al., 2023), and maximize learning potential through flexible and inclusive approaches (Basham et al., 2020). In the context of higher education, UDL has also proven effective in supporting inclusive instruction, especially for multilingual students, and in the development of online and blended learning (Emihovich, 2024). The implementation of UDL provides tangible benefits for both students and teachers by encouraging active participation, self-expression, and creating an inclusive and friendly learning environment, while also improving the social skills of students with disabilities (Almeqdad et al., 2023). Research has also demonstrated that UDL has been shown to increase student engagement behaviorally, emotionally, and cognitively (Evans, 2020) and it has a positive impact on academic achievement and attitudes toward the learning process (Polirstok & Lee, 2019). The UDL not only serves as a theoretical framework but also provides practical strategies to advance inclusive and effective learning across diverse educational contexts.

Indonesian language and literature learning in the PGMI Study Program at UIN Antasari Banjarmasin faces challenges due to the diversity of students, including their backgrounds, academic abilities, learning styles, and access to learning resources. This condition requires a more inclusive strategy than conventional methods, because some students need more time to understand the material, have difficulty finding additional resources, and struggle with a variety of tasks. UDL offers

a relevant approach because it emphasizes flexibility in presenting material (Novembli et al., 2024), student engagement, and expression of learning outcomes (Beck Wells, 2024). Through UDL, every student can actively participate and demonstrate their learning achievements according to their potential, even though its implementation still faces obstacles such as limited understanding among lecturers and students and a lack of integrated learning resources.

UDL has been implemented in various universities around the world, particularly in classes with students with disabilities (Bracken & Novak, 2019). However, its application in teaching Indonesian language and literature in elementary education study programs remains limited. The diversity of PGMI students requires adaptive and inclusive strategies. This study offers a novelty by describing the practice of applying UDL in Indonesian language and literature learning in the PGMI Study Program at UIN Antasari Banjarmasin and by examining its relevance for the development of prospective elementary school teachers in religious-based higher education context. The purpose of this study is to describe the application of UDL and its impact on student engagement and learning experiences, so that UDL is positioned not only as a teaching strategy but also as the foundation for inclusive, collaborative, and adaptive learning in higher education. To achieve this aim, the study is guided by one main research question: How does the implementation of the UDL framework influence the teaching and learning of Indonesian language and literature in the PGMI Study Program at UIN Antasari Banjarmasin? This primary question is further elaborated into two sub-questions: (1) In what ways is the UDL framework applied in the Indonesian language and literature course? and (2) What effects does its implementation have on student engagement and academic achievement? These guiding questions frame the study and direct its focus toward both the pedagogical process and its outcomes.

Literature Review

This review of the literature explores the theoretical and empirical foundations relevant to this study, with a focus on the Universal Design for Learning (UDL) framework and its application to Indonesian language and Literature learning in higher education. This review is organized into three main areas: (1) the concept of Universal Design for Learning and its principles, (2) the challenges of Indonesian language and literature instruction in teacher education programs, and (3) prior studies on UDL implementation. By synthesizing these concepts, the review provides a strong rationale for investigating the impact of UDL on student engagement and academic achievement in the PGMI Study Program at UIN Antasari Banjarmasin.

Universal Design For Learning

Universal Design for Learning (UDL) was developed in the mid-1990s by CAST (Center for Applied Special Technology) as a learning framework that aims to provide solutions for learners with diverse needs using technology. This idea was inspired by the concept of Universal Design in architecture, introduced by Ron Mace in the 1980s at North Carolina State University, which involves designing environments that are accessible to everyone from the outset. For example, ramps were created for wheelchair users, but later became useful for the entire community (Arduini, 2020). By adapting this principle, UDL in education is designed to create flexible and inclusive learning, adjusting approaches to the diversity of student needs (Veshal, 2024).

UDL is further operationalized through three core principles: multiple means of engagement, multiple means of representation, and multiple means of action and expression (Spencer, 2011). These principles provide a framework for creating learning experiences that are equitable, participatory, and responsive to learner diversity. The principle of multiple means of engagement emphasizes the importance of student motivation and engagement in learning. Everyone has a different background, interests, and learning style, so teaching strategies must be flexible (Lin & Barber, 2022). Teachers can facilitate engagement by providing choices of learning methods, linking material to relevant contexts, and varying the level of challenge (Saunders & Wong, 2023). This principle has been proven to increase students' cognitive, affective, and behavioral engagement (Evans, 2020).

The principle of multiple means of representation focuses on how information is presented to suit the diversity of students' learning styles. Material needs to be provided in various forms and media to make it easier for students to build a deep understanding (Veshal, 2024). Meanwhile, multiple means of action and expression emphasize that students need to be allowed to express their understanding in various ways, whether verbally, in writing, or through digital media, according to their respective conditions and preferences (Hasan et al., 2023). These principles position UDL as a comprehensive framework that accommodates learner variability while promoting meaningful participation in the classroom.

The challenges of Indonesian language and literature instruction in teacher education programs

Indonesian language and literature hold a central role in the PGMI curriculum because it equips future elementary teachers with linguistic, literary, and cultural competencies (Nuryani, 2018). However, instruction in this area often faces challenges such as low literacy levels (Adam et al., 2022), limited teaching resources (Omodan, 2024), and diverse student learning abilities (Magodi et al., 2023; Muthaharoh et al., 2024). Conventional instructional methods that rely on uniform approaches tend to overlook these differences, which can lead to disengagement and uneven learning outcomes (Borba et al., 2024; Kumari, 2022). This underscores the need for adaptive strategies like UDL, which allow teaching to be more inclusive and responsive to diverse learner needs (Beck Wells, 2024; Kapil et al., 2024).

UDL in higher education practice

Research has demonstrated that UDL improves student engagement, satisfaction, and achievement across disciplines. For example, Evans (2020) found that UDL significantly enhances behavioral, emotional, and cognitive engagement, while Bracken & Novak (2019) highlighted its effectiveness in increasing active participation among diverse learners. In online and blended learning environments, UDL has also been shown to support accessibility and learner autonomy (Emihovich, 2024; Novembli et al., 2024). These findings affirm the potential of UDL to transform learning environments into more equitable and participatory spaces, which is particularly relevant in teacher education, where inclusivity is a core professional competence (Almeqdad et al., 2023).

Methodology***Research design and approach of the study***

This study employed a quasi-experimental design, a one-group pretest–posttest design, to investigate the effectiveness of implementing the Universal Design for Learning (UDL) framework in the Indonesian language and literature course for elementary school/Islamic elementary school teachers. Quasi-experimental approaches are widely used in educational research when random assignment is not feasible, but when causal inferences regarding instructional interventions are needed (Kim & Clasing-Manquian, 2023). This design was chosen to observe changes in student engagement and learning outcomes before and after the treatment.

Research site and participants

The participants consisted of 131 fourth-semester students enrolled in the Indonesian language and literature course at the Faculty of Tarbiyah and Teacher Training, UIN Antasari Banjarmasin. All students from the course were included through total population sampling to ensure that the findings reflect the diverse academic abilities, cultural backgrounds, and learning styles typical of PGMI students. Total population sampling was considered appropriate because it reduces sampling bias and enhances the generalizability of the findings (Ibrahim & Marcaccio, 2023). The participants' characteristics, such as varied literacy levels, learning preferences, and access to resources, make them suitable subjects for testing the inclusivity of UDL-based strategies (Koimah et al., 2024).

Data collection and analysis

This study employed objective tests, classroom observations, and interviews to measure student outcomes. The objective tests consisted of 32 multiple-choice items, designed to assess comprehension, application, and analysis of Indonesian language and literature. For each correct response, a score of 1 was allocated, with item weights determined to range from 2 to 4 points in accordance with the designated difficulty level. Content validity was established through alignment with course learning outcomes and expert review by two specialists in Indonesian language education. Reliability was assessed using Cronbach's alpha, yielding a coefficient of 0.87, which indicates high internal consistency. Classroom observations were carried out once per week for two consecutive weeks, with each session lasting approximately 50 minutes. A structured observation sheet was employed to document engagement indicators, including students' attentiveness, participation in activities, and frequency of interaction. Both frequency counts and descriptive notes were recorded to capture behavioral patterns.

The treatment consisted of applying UDL principles through the stages of initial reflection, identification, investigation, action, and reflection. In the action stage, Project-Based Learning (PjBL) was conducted in two meetings. In the first, groups analyzed sub-themes and collected references, while in the second, they refined and presented their projects. Presentations were delivered either in class or via WhatsApp voice notes, both assessed with the same rubric emphasizing content accuracy, clarity, and creativity, and collaboration, ensuring flexible and inclusive participation. Quantitative data were analyzed using N-Gain and paired t-tests, and qualitative data analysis was conducted manually using a thematic approach, consisting of six stages: familiarizing with the data, coding relevant

segments, grouping codes into categories, reviewing categories for patterns, formulating main themes, and compiling a report linked to the research questions. Validity was ensured through triangulation across data sources (Meydan & Akkaş, 2024).

Results

This section presents the results of the study in relation to the research sub-questions: In what ways is the UDL framework applied in the Indonesian language and literature course? And what effects does the implementation of UDL have on student engagement and academic achievement? The findings are organized into two parts: the process of UDL implementation and the outcomes of its application.

Implementation of UDL in the classroom

The stages of implementing UDL in this lecture began with reflection. Lecturers explored obstacles to learning using KWL (Know, Want, Learn). In this initial stage, lecturers mapped students' needs and difficulties related to learning materials. The results showed that some students had difficulty finding references outside the lesson plan and needed more time to understand the material. This initial identification became the basis for designing more adaptive learning strategies.

The next stage is identification, where lecturers examine what support is already available at the university that can be accessed by students. The identification results found that UIN Antasari Banjarmasin already has an online library application, UIN Antasari. The Semester Learning Plan (RPS) compiled by the lecturer includes a list of references along with information on where these references can be accessed (journal or e-book URL addresses). The lecturer also shared learning modules on a WhatsApp group at the beginning of the lecture.

In the third stage of the investigation, lecturers determine the flexibility of the UDL to be applied. Several steps are taken, such as using the Project-Based Learning (PjBL) method to improve cooperation in the classroom, providing Google Drive as a medium for storing and sharing documents, and providing a variety of assignment types. In this way, students are facilitated through various channels of representation, engagement, and expression according to their needs.

The Action stage is realized by students working in groups through PjBL to review lecture modules, compare the content with additional sources such as journals or books, and then compile the results of their review into presentation materials. This action process encourages students to develop independence in seeking information, analytical skills, and collaborative skills. The presentation of project or assignment results is carried out in two ways, namely face-to-face in class and voice recordings (voicenotes) in WhatsApp groups. This variety of media provides flexibility for students to express their understanding most comfortably, while also training their oral and digital communication skills.

The final stage is Reflection. At this stage, students and lecturers evaluate the learning process. Students report increased engagement, ease in finding additional references, and enjoyment in attending lectures. They also want more flexibility in determining the type of assignments and the pace of work. These findings confirm that the implementation of UDL has succeeded in creating a learning experience that is more inclusive, participatory, and relevant to students' needs.

Effects on student engagement

Classroom observations and student reflections consistently indicated a marked increase in engagement following the implementation of UDL strategies. Before UDL, most students tended to be passive and relied primarily on the lecturer's explanations. After strategies such as project-based learning, flexible task submissions, and the use of WhatsApp voice notes were introduced, participation increased substantially. Students also expressed greater motivation and satisfaction with the learning process. One explained, "I feel more enthusiastic because I can choose how to complete the task. If I cannot give a presentation in person, I can send a voice note." Another added, "The material is easier to understand because the lecturer provides many reading sources, not just from the module." Similarly, one student reflected, "Group work through PjBL helps us learn independently while sharing with friends." These reflections underscore how UDL fostered active participation, motivation, flexibility, and accessibility, core principles of inclusive learning.

Effects on learning outcomes

The pretest results showed an average score of 72.53 (grade B), while the post-test results increased to 82.49 (Grade A). The N-Gain calculation of 0.36 indicates an improvement in ability in the moderate category. The pretest and post-test results based on grades are as follows.

Table 1. *Pretest and Post-Test Result*

Pre-test				Post-Test			
Interval	F	P	Predicate	Interval	F	P	Predicate
0-49	4	3.05	E	0-49	4	3.05	E
50-54	6	4.58	D	50-54	2	1.53	D
55-59	12	9.16	D+	55-59	0	0.00	D+
60-64	7	5.34	C	60-64	0	0.00	C
65-69	12	9.16	C+	65-69	1	0.76	C+
70-74	19	14.50	B	70-74	1	0.76	B
75-79	25	19.08	B+	75-79	8	6.11	B+
80-89	43	32.82	A	80-89	95	72.52	A
90-100	3	2.29	A+	90-100	20	15.27	A+

Table 1 demonstrates a substantial improvement in learning outcomes. The percentage of students achieving A and A+ grades increased markedly from 35.11% to 87.79%. At the same time, the proportion of students in the D and D+ categories dropped to zero after UDL implementation. This distribution indicates that UDL not only raised the performance of average students but also effectively supported those who had previously struggled, eliminating the lowest performance bands.

The paired t-test statistical test results obtained a significance value of $0.00 < 0.005$, indicating a significant difference between students' abilities before and after the implementation of UDL. Thus, it can be concluded that the implementation of UDL is effective in improving students' abilities and engagement in Indonesian language and literature learning.

Table 2. *Results of paired t-test calculations based on STATCAL*

row.names		Degree of Freedom (df)	Statistic of T	P-Value of T Statistic	P-Value of Normality Based Difference Data	of Test on Data
1	Pretest-posttest	130	9.7757	0.00	0.6031	

The paired-sample t-test results further validate the improvement. The calculated t-statistic of 0.00 with $p < 0.005$ indicates a statistically significant difference between pretest and posttest scores, confirming that the gains were not due to chance. Additionally, the normality test result ($p = 0.6031 > 0.05$) verified that the data met the assumptions for t-test analysis, ensuring the reliability of the results.

Taken together, the findings demonstrate the robust impact of UDL on student learning. Quantitative data (Tables 1 and 2) showed statistically significant achievement gains, while observational data documented enhanced engagement and collaboration. Meanwhile, interviews captured students' positive perceptions of motivation, satisfaction, and flexibility. This triangulation of data confirms that UDL improved both cognitive outcomes (higher achievement scores) and affective outcomes (greater motivation and engagement), thereby underscoring its effectiveness as an inclusive teaching framework.

Discussion

The implication of UDL in Indonesian language and literature lectures in the PGMI Study Program at UIN Antasari Banjarmasin has been able to create a more inclusive and adaptive learning experience. This discussion elaborates on how the findings respond to the study's purpose. The initial reflection stage using the KWL strategy proved effective in identifying students' needs and difficulties. This is in line with the UDL principle that emphasizes the importance of mapping learning barriers and student needs (Kapil et al., 2024), thereby enabling appropriate interventions to design learning strategies that are more responsive to student diversity (Mary, 2023).

The investigation and action stages show how flexibility in methods, media, and task forms contributes to increased student engagement. The integration of Project-Based Learning (PjBL), the use of Google Drive, and the use of communication media such as WhatsApp provide space for students to express their understanding through various channels, thereby encouraging them to actively engage in learning and reducing stress levels (Javaid et al., 2020). This is in line with the UDL principle of providing multiple means of representation, engagement, and expression so that students can learn according to their individual styles and needs. These results reinforce the findings (Bracken & Novak, 2019) that the application of UDL in higher education can increase active participation, especially for students with diverse needs.

There was a significant increase in post-test scores compared to pre-test scores, with the average score increasing from 72.53 (grade B) to 82.49 (grade A), indicating the effectiveness of UDL in improving student competence. The N-Gain value of 0.36, which is in the moderate category, indicates

that although the improvement is not yet optimal, the application of UDL has succeeded in bringing positive changes to students' academic abilities. The significant paired t-test statistical results ($p < 0.005$) reinforce that the difference in learning outcomes before and after the treatment was not coincidental, but rather a real impact of the UDL strategy. This is in line with research (Dewi et al., 2018) The implementation of UDL can improve learning outcomes because this approach takes into account the diverse abilities of learners.

In addition to improved cognitive outcomes, student reflections indicate positive affective changes in the form of increased motivation, enjoyment, and a desire for greater flexibility in determining the type and pace of tasks. These findings indicate that UDL not only has an impact on academic achievement but also contributes to a satisfying learning experience (Lesoski, 2022) by creating a participatory, inclusive learning climate that is relevant to students' needs.

UDL enables a more personalized and adaptive learning experience by allowing students to interact with materials at their own learning pace, as well as through various forms of representation, expression, and engagement. This flexibility is important to support academic achievement while accommodating the diversity of student learning styles (Parmini et al., 2023). In addition, UDL encourages the development of higher-order thinking and problem-solving skills, competencies that are increasingly needed in facing complex real-world challenges (Kusumasari et al., 2024). The findings of this study also show that although UDL has had a positive impact on cognitive and non-cognitive development, there is still a need for greater flexibility in task design, assessment methods, and learning time management. These efforts will help lecturers respond to differences in students' learning styles and paces, thereby creating fairer and more optimal learning outcomes (Nurhayatin & Regina, 2024).

The implementation of the Universal Design for Learning (UDL) framework enhanced student engagement and achievement, consistent with Espada-Chavarria et al. (2023), who found that such strategies promote satisfaction, motivation, and mastery of competencies. For lecturers, this study highlights the importance of designing learning activities that provide multiple pathways for participation and assessment, while for institutions, it emphasizes the need for policies that ensure access to digital resources, lecturer training, and curriculum flexibility to sustain inclusive pedagogy (Hromalik et al., 2024). The findings also provide valuable insights for researchers by contributing empirical evidence from an Indonesian higher education context and suggesting future inquiries across different institutions, subjects, and longer time frames to explore UDL's broader impact on competencies such as literacy, creativity, and problem-solving.

Despite these contributions, the study has several limitations. The participant group was limited to a single cohort of PGMI students in one course at one university, which constrains the generalizability of the findings. The absence of a control group reduces the strength of causal claims, even though significant improvements were observed. Furthermore, the short duration of one semester did not allow for the exploration of long-term effects on student development or professional readiness. These constraints suggest that future research should adopt broader samples, comparative designs, and longitudinal approaches to provide a deeper understanding of UDL's effectiveness in diverse educational contexts.

Conclusion and Recommendations/Implications

The implementation of UDL in Indonesian language and literature lectures in the PGMI Study Program at UIN Antasari Banjarmasin effectively enhanced student engagement and academic

achievement, thereby addressing the study's main objectives. The implementation of UDL was carried out through reflection, identification, investigation, action, and reflection, resulting in more adaptive, participatory, and student-centered learning. Data analysis confirmed significant improvement, with the average score from 72.53 to 82.49, an N-Gain of 0.36 (moderate category), and the results of the difference test, where the p -value < 0.005 , confirmed that there was a significant difference before and after the implementation of UDL. Students felt an increase in motivation, ease of access to references, and enjoyment in lectures. The application of UDL has an impact on the cognitive, affective, and social development of students, so that it can be a strategic approach in creating inclusive language learning.

The application of UDL in lectures has practical implications for lecturers, students, and educational institutions. For lecturers, UDL requires more adaptive learning design by providing a variety of methods, media, and flexible forms of assessment according to student needs. For students, this approach encourages increased independence, collaboration skills, digital literacy, and confidence in expressing understanding. Meanwhile, for educational institutions, the results of this study emphasize the importance of support through the provision of easily accessible digital learning resources, lecturer training in inclusive pedagogy, and policies that support flexible learning so that the implementation of UDL can take place systematically and sustainably. This research is still limited to one course and emphasizes student engagement and improved cognitive learning outcomes. The impact on other skills such as creativity, problem-solving, and literacy has not been extensively studied. Given these limitations, future studies should examine the implementation of this approach in other courses and contexts to test its generalizability. Further research is also needed to explore its effects on higher-order skills such as creativity, problem-solving, and literacy, using longitudinal or mixed-method designs for deeper insight.

Disclosure statement

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