

EXPLORING THE INFLUENCE OF PROFILE FACTORS ON TEACHERS' WILLINGNESS TO ADOPT UNIVERSAL DESIGN FOR LEARNING (UDL) IN INDONESIA

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ABSTRACT

This study examined whether teachers' profile variables influence their willingness to adopt Universal Design for Learning (UDL) in Sekolah Regina Pacis, Jakarta, Indonesia. A descriptive-correlational research design was employed to analyze differences and relationships between teachers' willingness to implement UDL and selected profile variables, including sex, nationality, grade level taught, marital status, and years of teaching experience. Data were collected using a validated survey questionnaire measuring teachers' level of willingness to adopt UDL and their demographic characteristics. Descriptive statistics (mean and standard deviation), Welch's t-test, one-way Analysis of Variance (ANOVA), and Pearson correlation were used for statistical treatment of data. Findings revealed that teachers demonstrated a high level of willingness to adopt UDL, indicating a generally positive disposition toward inclusive instructional practices. Results further showed that there were no statistically significant differences in willingness when grouped according to sex, nationality grade level taught and marital status. Similarly, no statistically significant relationships were found between willingness and age or years of teaching experience. These findings suggest that teachers' willingness to adopt UDL is consistent across demographic and professional characteristics. The study concludes that willingness to implement UDL is not significantly influenced by teachers' profile variables. Instead, it highlights the importance of focusing on competency development, self-efficacy, and institutional support systems. It is therefore recommended that schools implement structured professional development programs, coaching, and collaborative learning communities to enhance the effective adoption of UDL in inclusive classrooms.

Keywords: *Universal design for Learning (UDL), inclusive education, teacher's willingness*

INTRODUCTION

The increasing diversity of learners in today's classrooms has intensified the need for educational approaches that support all students, including those with special educational needs (SEN). Over time, education systems have shifted from segregated models toward inclusive education, where learners of varying abilities are taught within the same environment. This shift has been reinforced by international frameworks such as the Salamanca Statement (1994) and the Convention on the Rights of Persons with Disabilities (2006), which advocate equal access to quality education for all learners. According to IIEP-UNESCO (2019), inclusive education is essential in ensuring that all children develop the skills necessary for lifelong participation in society.

In Indonesia, inclusive education has gained significant momentum in recent years. The number of inclusive schools increased from 35,802 in 2021 to 44,477 in 2023, serving approximately 146,205 learners with special educational needs (Antara News, 2023). Despite this progress, challenges remain evident. For instance, although thousands of schools have adopted inclusive practices, only 14.8 percent have access to specialized special education teachers (Antara News, 2023). This situation places considerable responsibility on general education teachers, who are expected to address diverse learning needs despite limited training and support.

To address these challenges, the Universal Design for Learning (UDL) framework has emerged as a transformative approach to inclusive instruction. UDL promotes flexibility in teaching by providing multiple means of engagement, representation, and action and expression, enabling educators to design lessons that accommodate learner variability (CAST, 2018). Rather than reacting to learning barriers, UDL encourages proactive instructional planning that anticipates diversity from the outset. Recent developments in UDL, particularly Version 3.0, further emphasize learner identity, equity, and inclusive participation (CAST, 2024).

Empirical studies across different contexts highlight the effectiveness of UDL in improving engagement and participation among learners. For example, research in Taiwan demonstrated that applying UDL principles in inclusive classrooms increased student engagement among both typically developing learners and those with SEN (Jhuo & Chu, 2025). In Pakistan, UDL-aligned instructional approaches yielded positive outcomes despite infrastructural limitations (Hussain, 2020; Khan et al., 2022). However, studies in India revealed limited teacher awareness and uneven implementation, emphasizing the need for sustained professional development (Choudhury, 2021; Sharma & Singh, 2022).

Despite these promising findings, the successful implementation of UDL largely depends on teachers, particularly their willingness and readiness to adopt innovative instructional practices. Research suggests that teachers' demographic and professional characteristics—such as sex, nationality, grade level taught, teaching experience, and marital status—as well as age and years of teaching, may influence their openness to adopting new pedagogical frameworks. In Indonesia, although awareness of UDL is gradually increasing through initiatives such as the Indonesian UDL Summit (UNY, 2023), its application in classroom practice remains limited.

At the local level, Sekolah Regina Pacis – Jakarta reflects both the progress and challenges of inclusive education. The school serves 749 students, 32 of whom are identified as having special educational needs, representing approximately 4.3% of the

student population (Sekolah Regina Pacis Jakarta, 2025). While the school demonstrates a commitment to inclusion through the use of technology and adaptive practices, it does not employ specialized special education teachers, highlighting the need for structured frameworks and teacher capacity-building initiatives.

Given these conditions, it becomes essential to examine the factors that influence teachers' willingness to adopt UDL in inclusive classrooms. Therefore, this study aims to explore the influence of profile factors on teachers' willingness to adopt Universal Design for Learning (UDL) in Indonesia. Specifically, it seeks to describe the demographic profile of teachers, determine their level of willingness to adopt UDL when grouped according to selected variables, examine significant differences and relationships among these variables, and propose programs or interventions that may enhance the adoption of UDL in inclusive educational settings.

Background of the Study

Sekolah Regina Pacis-Jakarta, the school in which the researcher chooses to conduct this study, was established 67 years ago by the Franciscan Missionaries of Mary with the aim of providing holistic education rooted in Catholic values. Over the decades, the school has evolved into a modern educational institution, integrating faith-based character formation with rigorous academics. Today, Regina Pacis offers the Pearson Edexcel curriculum, an internationally recognized program designed to prepare students for global standards. The school also embraces cultural and academic diversity, with students coming from different nationalities and varied learning backgrounds. This dynamic environment reflects the school's continuous effort to balance tradition with modern educational practices (Sekolah Regina Pacis Jakarta, 2025).

Guided by its motto, *Ad Veritatem Per Caritatem* ("To the Truth through Charity"), Regina Pacis seeks to form students who embody truth, compassion, and excellence. The school's vision emphasizes nurturing individuals who are not only intellectually competent but also socially responsible and morally grounded. This commitment is reflected in the CHIPS framework—Character, Holistic, Innovative, Professional, and Social Responsibility—which serves as a foundation for student development. Through CHIPS, Regina Pacis aims to cultivate learners with strong moral character, well-rounded abilities, creative and innovative thinking, professional competence, and a deep sense of responsibility toward society. These values closely align with the principles of Universal Design for Learning (UDL), as both frameworks emphasize respect for diversity, flexible approaches to instruction, and equal opportunities for growth. By embedding CHIPS into its mission, Regina Pacis highlights the importance of creating inclusive learning environments where all students, regardless of ability or background, can thrive (Sekolah Regina Pacis Jakarta, 2025).

While the CHIPS framework and the school's vision promote inclusivity and holistic growth, Regina Pacis continues to face challenges in realizing these ideals within the classroom. Teachers often struggle to address the diverse abilities of students, particularly when integrating learners with special educational needs alongside their peers. The Pearson Edexcel curriculum, though academically rigorous and internationally recognized, presents additional difficulties in ensuring that all students—especially those with learning differences—can fully participate and succeed. For example, some students require modified instruction, differentiated materials, or

alternative assessments to access the curriculum meaningfully. However, not all teachers feel adequately prepared or supported to implement such adoptions, leading to gaps between the school's inclusive mission and actual classroom practices. This mirrors broader trends in inclusive education, where teachers frequently report low confidence, lack of specialized training, insufficient resources, and difficulty in classroom management when handling learners with diverse needs (Savira, Wagino, & Normalia, 2024). This tension highlights the pressing need for structured frameworks, such as UDL, to help teachers translate the values of CHIPS into effective teaching strategies that meet the needs of every learner.

In Regina Pacis, the increasing cultural diversity of the student body, coupled with the presence of learners with disabilities, underscores the need for innovative strategies to ensure meaningful participation for all. Teachers' ability to adopt instructional approaches plays a critical role in student engagement, performance, and overall school success. The gap between curriculum demands and learner diversity highlights the urgency of exploring effective frameworks that support inclusion in practice, not just in principle.

This study responds to these challenges by examining the willingness of teachers at Regina Pacis to adopt the Universal Design for Learning (UDL) approach in inclusive classrooms. UDL, with its emphasis on providing multiple means of engagement, representation, and expression, offers a framework that can address the varied needs of learners within the Edexcel curriculum. However, the extent to which teachers are prepared and motivated to integrate UDL remains underexplored in this context. This study explores how teachers' profiles influence their readiness to apply UDL in inclusive classrooms, aiming to reveal key opportunities and challenges at Regina Pacis. The results may guide school leaders and policymakers in offering the training, resources, and support needed to sustain effective inclusive education.

Inclusive Education

Inclusive education is framed in contemporary scholarship and policy as both an ethical imperative and a system-level endeavor to remove educational barriers so that every learner regardless of disability, language, socioeconomic status, ethnicity, or other status can access, participate in, and benefit from mainstream schooling (UNESCO, 2020). Globally, researchers emphasize that inclusion requires more than placing learners with diverse needs in general classrooms; it requires changes in curriculum design, assessment, pedagogy, teacher preparation, and institutional arrangements that proactively accommodate learner variability (UNESCO, 2020; Espada-Chavarría et al., 2023). In Southeast Asia, national policy adaptations and empirical studies indicate converging commitments to inclusion, yet persistent implementation gaps rooted in teacher capacity, resource constraints, and variable policy translation across local contexts (Department of Education [DepEd], 2020; Ediyanto, 2023; Fauziyah et al., 2025).

Scholars and international agencies define inclusive education around the core principles of equity, access, participation, and belonging. UNESCO's Global Education Monitoring Report (2020) articulates inclusion as both a process and outcome requiring structural changes that ensure equitable learning opportunities for all pupils (UNESCO, 2020). The literature converges on four interrelated principles: (a) access to the curriculum and school resources; (b) meaningful participation in learning and school life;

(c) responsiveness to learner diversity; and (d) a sense of belonging and non-discrimination (UNESCO, 2020; Espada-Chavarría et al., 2023).

Universal Design for Learning (UDL) and Universal Design for Instruction (UDI) are frequently recommended in the literature as operational frameworks that translate inclusion principles into practical instructional design. UDL proposes proactively designing curricula and instruction with multiple means of representation, engagement, and action/expression to reduce the need for later individualized accommodations (CAST, n.d.; Díaz-Vega, 2020). Empirical syntheses indicate that UDL align closely with UNESCO's inclusion objectives because they foreground variability as normative and encourage flexible, scalable strategies that benefit broad learner populations (Espada-Chavarría et al., 2023; Levey, 2023).

Challenges and Demands on Teachers in Inclusive Classrooms

Given the principles that governs the inclusive education, there have been emerging demands that were identified that are imposed on teachers. Some of the commonly reported barriers include inadequate pre-service and in-service training on differentiated instruction, class, size, lack of allied support (teacher aides, special educators), limited access to adapted learning materials and assistive technologies, and insufficient planning time (Jury, 2023; Díaz-Vega, 2020). These constraints recur across global and Southeast Asian studies and are frequently cited as key reasons for the gap between inclusion policy and classroom practice (UNESCO, 2020; Espada-Chavarría et al., 2023).

Literature from Southeast Asia underscores context-specific pressures. In Indonesia, teachers' attitude towards inclusion are generally moderate citing concerns on competency and resources (Ediyanto, 2023). Fauziyah et al. (2025) noted that while teachers may accept inclusion in principle, many teachers also acknowledge their lack of pedagogical strategies and systemic support to implement them effectively. In the Philippines, DepEd policy has progressively formalized support for learners with disabilities such as DepEd Orders (DOs) 021 s. 2020 and 032 s. 2020, but such directives coexists with uneven school-level capacity noting that teachers report insufficient targeted training and limited access to inclusive learning resources (DepEd, 2022). Case studies including that of Jury (2023) indicated that without coherent resourcing and sustained professional development, teacher workloads, and accountability pressures can undermine the efforts to differentiate instruction.

In studies of Charitaki et al. (2022) and Moreno-Rodriguez et al. (2021), teachers often report doubts about their own abilities to meet the demands of diverse needs, anxiety over classroom management in mixed settings, and tension between standardized curriculum assessment and individualized support. These teacher-level pressures are amplified where national assessments regimes and school accountability measures do not reward inclusive practices (Moreno-Rodriguez et al., 2021). Consequently, scholars argue that implementing inclusive education requires simultaneous attention to teacher capacity, school culture, assessment systems, and material resourcing (Espada-Chavarría et al., 2023).

The Role of Teacher Willingness and Attitude in Effective Inclusion

While structural supports are necessary, the literature consistently identifies teacher willingness, comprising attitudes, beliefs, and behavioral intentions, as a central determinant of whether inclusion policy translates into classroom practice. Quantitative and qualitative studies like of Charitaki et al. (2022) and Mouchrista (2022) show that teachers with more positive attitudes toward inclusion are more likely to use adaptive strategies, collaborate with specialists, and engage with professional development aimed at inclusive instruction. Conversely, studies of Jury (2023) and Ediyanto (2023) show that predictors of reluctance to adopt inclusive practices such as concerns about workload, lack of self-efficacy, and inadequate supports are recurrent even among teachers who nominally endorse inclusion.

Regional studies also suggest that willingness is shaped by both individual and contextual variables. In Indonesia, teacher attitude measures correlate with prior training, perceived administrative support, and opportunities for collaborative planning, factors that can either amplify or dampen willingness to act on inclusive ideals (Ediyanto, 2023; Fauziyah et al., 2025). In the Philippines, DepEd guidance and programmatic investments (for example, the establishment of transition curriculum frameworks and Inclusive Education Policy Frameworks) aim to create enabling conditions for teacher willingness to manifest as practice; however, evaluations show that policy clarity alone is insufficient without accompanying in-service training, resource allocation, and monitoring mechanisms (DepEd, 2020; DepEd, 2022).

Importantly, willingness is malleable. Several intervention studies and systematic reviews show increases in teacher knowledge, self-efficacy, and willingness following targeted professional development that includes hands-on coaching, Universal Design Learning (UDL) training modules, and sustained peer collaboration (Díaz-Vega, 2020; Espada-Chavarría et al., 2023; Moreno-Rodríguez et al., 2021). Nevertheless, the literature cautions that training programs operate most effectively when embedded within supportive school policies and resourcing strategies; otherwise, gains in attitude may not produce sustained changes in instructional practice (Baek, Aguilar & Warschauer, 2024).

In a study by Baek, Aguilar, & Warschauer (2024), they showed that before intervention, teachers had moderate willingness to provide accommodations; after an intervention (using a first-person narrative about autism) their self-efficacy and willingness increased significantly. Conclusion suggests that beliefs and willingness are responsive to interventions.

In addition, a comparative study by Gallego (2023) showed that between groups receiving UDL instruction versus traditional instruction, students exposed to UDL instruction acquired UDL-related skills at much higher levels than the control. This implies that when teachers apply UDL, the benefits are real but also presumes teacher willingness or capacity to apply approach.

In Indonesia, Ediyanto (2023) measured attitudes of in-service teachers toward inclusive education. The study found that while many in-service teachers express positive attitudes, their readiness to employ inclusive strategies (which would include UDL like practices) depended heavily on training experiences and perceived administrative support. In other words, general education teachers who have had little exposure to specialized inclusive pedagogy differ significantly in readiness compared to those with more training or special education background.

Similarly, in the Philippines, several studies evaluating teacher competencies and readiness (though not always explicitly UDL-labelled) show that teacher education institutions are producing graduates who have theoretical understanding but often lack practical exposure to inclusive design, differentiation, or flexible instructional methods—the kinds of practices UDL entails. For example, a study on the quality of graduates from teacher education institutions examined whether graduates are prepared to meet diverse learners, noting gaps particularly in practical training and exposure to inclusive pedagogies (Olvido, Dayagbil, Alda, Uytico, & Rodriguez, 2024).

Influence of Professional Development and Training on Willingness

Although explicit UDL professional development (PD) studies are fewer in some regions, Díaz-Vega (2020) argues that teacher training in UDL or Universal Design for Instruction (UDI) is essential: her study shows that where training is offered, teacher knowledge increases, but implementation remains uneven unless embedded in teacher culture and supported by policy.

Espada-Chavarría et al. (2023) provide evidence that PD focused on UDL/UDI leads to improvements in both attitude and some changes in instruction, though the study notes that institutional support, and resource availability limit how far adoption goes. Willingness alone does not yield practice change as teacher report lack of time to plan or insufficient support from school administrators (Espada-Chavarría et al., 2023). In addition, Gallego (2023) also noted that when UDL instruction is integrated into courses, student learning improves, which may feed back into teacher motivation.

Factors influencing Teachers' Willingness to adopt UDL

Adoption of UDL by practicing teachers is not determined by a single cause; rather, the literature points to an interaction of personal, institutional, and policy-oriented factors. Studies by Charitaki et al (2022) and Hills et al. (2022) consistently show that while many teachers hold favorable attitudes toward inclusive instruction and the principles embodied in UDL, willingness to adopt UDL in everyday practice depends on teachers' beliefs and perceived competence, the material and social support available in their schools, and the availability of sustained, context-sensitive professional development and enabling policy frameworks.

1.6.1 Personal Factors

Attitudinal study by Woodcock et al. (2022) found that positive beliefs about inclusion predict intent to use inclusive strategies, while lower self-efficacy constrains translation of intent into action. In practical terms, teachers who believe that diverse learners can succeed when instruction is flexibly designed are more open to UDL's multiple-means approaches; however, those who doubt their own pedagogical skills or who fear adverse accountability consequences are less likely to experiment with redesigning lessons (Almeqdad, 2023).

Prior experience with learners who have special needs also plays a substantial role. Bedir (2022) report that teachers with past experience either through special education assignments, co-teaching arrangements, or prior training express greater confidence in using flexible assessment and multimodal instruction, both core UDL practices. According to Hills et al. (2022), teachers are more likely to report concrete example of UDL-aligned adaptations such alternative

representations and scaffolded options to learners if the experience includes collaborative work with special educators and classroom-based coaching.

1.6.2 Institutional and Environmental Factors

Institutional supports and constraints shape the feasibility of implementing UDL and therefore influence willingness. Studies by Hills et al. (2022) and HEQC (2023) argued that school-level leadership and administrative encouragement contribute positively when principals and program leaders prioritize inclusive pedagogies, allocate planning time, and reduce competing demands. Conversely, in contexts where leadership emphasizes rapid curriculum coverage, high-stakes testing, or minimal teacher autonomy, willingness is dampened because teachers fear negative consequences or lack the time to redesign materials (Krishan & Sharma, 2023).

Availability of resources both physical (assistive technologies, adaptable materials, classroom aids) and human (co-teachers, instructional designers, special-education specialists) is another decisive factor. Studies of faculty and primary/secondary teachers repeatedly highlight resource constraints as a primary barrier, even teachers who conceptually support UDL report that limited access to materials and technological supports makes adoption impractical (Hills et al., 2022; Ediyanto, 2023). Class size and workload pressures operate similarly large, heterogeneous classes and heavy administrative loads reduce the capacity of teachers to plan, implement, and reflect on UDL approaches (Krishan & Sharma, 2023).

1.6.3 Professional Development and Policy Support

PD that is carefully designed and sustained is an influential lever for increasing teacher willingness to adopt UDL according to Huang et al. (2022). Such PD programs work through multiple mechanisms increasing teachers' knowledge of UDL options, enhance self-efficacy by providing scaffolded practice, and generate observable evidence of positive student outcomes that reinforce continued use (Al-Qahtani, 2022).

National and institutional policies that explicitly endorse inclusive pedagogy and allocate resources for capacity building (for example, central funds for assistive technology or mandated collaborative planning time) increase the likelihood that teachers will adopt UDL approaches (UNESCO, 2020; HEQCO, 2023). Conversely, policy ambiguity where inclusion is rhetorically supported but not operationalized with funding, assessment flexibility, or monitoring tends to leave teachers confused about priorities and less willing to invest in UDL transformations (Al Qahtani, 2022).

Profile Variables as Factors Affecting Willingness of Teachers to Adopt UDL

Recent research in inclusive education has increasingly shifted from merely identifying associations toward examining predictors of teachers' willingness to adopt inclusive practices such as UDL. Empirical studies suggest that willingness is not a random or purely attitudinal construct but is influenced by measurable teacher-related variables. For instance, Baek et al. (2024) found that teachers' willingness to provide accommodations for students with autism is significantly predicted by factors such as teaching experience, gender, and perceived institutional support.

Similarly, broader studies on inclusive education reinforce the predictive role of teacher profile and professional variables. Alhassan (2025) reported that teaching experience and prior exposure to students with special needs are among the strongest predictors of effective inclusive teaching practices. Teachers who had more years of experience or direct interaction with learners with disabilities were more likely to adopt flexible instructional approaches aligned with inclusive frameworks. Complementing this, Baş (2021) identified that contextual and teacher-related variables, including classroom conditions and professional competence, significantly predict teacher efficacy, which is closely linked to willingness to adopt innovative pedagogical approaches such as UDL. These findings collectively suggest that teachers' backgrounds and experiences play a critical role in shaping their openness to inclusive practices.

In the context of UDL specifically, studies have highlighted the importance of knowledge, training, and self-efficacy as key determinants of adoption. Karlina (2025) emphasized that teachers' understanding of UDL principles, along with access to professional development opportunities, significantly influences their willingness to implement the framework in classroom settings. Teachers who possess higher levels of knowledge and confidence in applying UDL strategies are more likely to integrate them into their teaching practices. This aligns with findings from Foykas (2025), who reported that training, teaching experience, and perceived competence serve as strong predictors of teacher readiness for inclusive education. These studies reinforce the idea that both profile variables and professional development factors interact to influence teachers' willingness to adopt inclusive instructional approaches.

Moreover, research examining teachers' attitudes toward inclusion further supports the predictive nature of willingness-related constructs. Studies have shown that self-efficacy, demographic characteristics, and prior experiences significantly influence teachers' attitudes and intentions to implement inclusive education (Baş, 2021). Since willingness is closely related to attitudes and behavioral intentions, these findings provide additional evidence that teacher profile variables can function as predictors rather than merely descriptive factors. Taken together, the literature establishes a strong foundation for examining teacher profile variables—such as sex, teaching experience, and background characteristics—as predictors of willingness to adopt UDL, thereby justifying the use of predictive statistical approaches in analyzing these relationships.

Synthesis and Research Gaps

The reviewed literature reveals that teachers across diverse educational contexts generally express positive attitudes and a strong willingness to adopt the Universal Design for Learning (UDL) framework. However, the actual implementation of UDL in classroom practice remains inconsistent and limited. Empirical studies indicate that while educators acknowledge the benefits of UDL in fostering inclusive learning environments, their willingness and capacity to implement it are often constrained by insufficient training, institutional barriers, and a lack of systemic support (Baek et al., 2024; Espada-Chavarría et al., 2023; Hills, Overend, & Hildebrandt, 2022). Although many teachers demonstrate conceptual understanding of UDL's core principles—providing multiple means of representation, engagement, and expression—they still struggle to apply these concepts effectively in instructional design (Bedir, 2022).

Several studies have identified professional development as a key factor influencing teachers' readiness to apply UDL principles (Almeqdad, 2023; Kilpatrick, 2021). Educators who receive structured training or continuous coaching in inclusive pedagogy exhibit greater confidence and are more likely to integrate UDL strategies into their teaching (Charitaki et al., 2022). Nonetheless, most existing studies tend to examine isolated variables such as teacher attitudes, self-efficacy, or professional development experiences, with limited exploration of how teacher demographic factors interact with willingness to implement UDL. Research has shown that variations in teacher characteristics, including experience level and area of specialization, can affect the consistency and flexibility of UDL adoption (Krishan & Sharma, 2023; Díaz-Vega et al., 2020).

Despite these findings, there remains a gap in understanding how teacher profile factors—specifically sex, nationality, grade level taught, and teaching experience—relate to their willingness to implement UDL within inclusive classrooms. To address this gap, the present study investigates these relationships among teachers at Sekolah Regina Pacis–Jakarta, providing empirical insights that may inform teacher training, policy formulation, and the promotion of inclusive educational practices.

Theoretical Framework

The Universal Design for Learning (UDL) framework serves as the central theoretical foundation for inclusive pedagogy and equitable instructional design. Originally conceptualized by the Center for Applied Special Technology (CAST), UDL is defined as a scientifically grounded approach that aims to improve and optimize teaching and learning for all individuals based on insights from cognitive neuroscience (CAST, 2018). The framework is structured around three core principles: (1) multiple means of engagement, which emphasizes stimulating learners' motivation and interest; (2) multiple means of representation, which advocates for flexible presentation of information to accommodate diverse perceptual and cognitive needs; and (3) multiple means of action and expression, which allows learners to demonstrate understanding through varied modalities and supports (CAST, 2018).

The researcher finds UDL principles are closely aligned with the broader goals of educational equity and accessibility which are essential in inclusive education, as they encourage proactive curriculum design that anticipates learner variability rather than retrofitting accommodations after difficulties arise. By emphasizing flexibility in teaching materials, assessments, and instructional strategies, UDL enables educators to remove systemic barriers to participation and achievement (Al-Azawei & Al-Masoud, 2022). Recent studies demonstrate that applying UDL principles can promote not only accessibility for learners with disabilities but also engagement and success for all students, including those from linguistically, culturally, or socioeconomically diverse backgrounds (Han & Lei, 2024; Hills, Overend, & Hildebrandt, 2022). This universality makes UDL particularly relevant in diverse classroom contexts such as inclusive education systems across Southeast Asia particularly and Indonesia.

The researcher's rationale for adopting UDL in inclusive education is grounded in its ability to address learning barriers that traditionally hinder participation for students with disabilities or additional learning needs. Unlike traditional models that rely after accommodations, UDL promotes proactive instructional design that embeds accessibility

from the outset (Almeqdad, 2023). In inclusive settings, UDL provides teachers with a conceptual and practical toolkit to differentiate instruction and ensure equitable participation. For instance, Díaz-Vega (2020) found that integrating UDL-aligned strategies in teacher education significantly improved teachers' ability to plan lessons that respond to learner diversity. Similarly, Espada-Chavarría, González-Sanmiguel, and Conde-Jiménez (2023) observed that schools adopting UDL-based pedagogies reported increased learner engagement, greater participation of students with disabilities, and reduced learning gaps across achievement levels.

The researcher will take the teacher competence, beliefs, and willingness as central to the effective implementation of UDL. As the framework requires a shift from standardized instruction to flexible, learner-centered pedagogy, teacher readiness becomes a key determinant of success. Rusconi and Squillaci's (2023) systematic review identified that teachers' conceptual understanding of UDL, self-efficacy in inclusive instruction, and prior exposure to professional development strongly influence their adoption of UDL practices. Educators who perceive themselves as capable of designing flexible lessons are more likely to embed multiple modes of engagement, representation, and expression in their teaching.

Han and Lei (2024) similarly observed that professional learning opportunities focusing on the cognitive and affective foundations of UDL substantially enhance teachers' confidence in using inclusive strategies. In contrast, teachers lacking formal exposure to UDL tend to view it as complex or burdensome, often equating it with individualized instruction rather than as a universal design approach (Hills et al., 2022). These findings suggest that teacher willingness and knowledge act as mediating variables between UDL awareness and classroom implementation. Furthermore, Ediyanto (2023) suggests that teachers' positive attitudes toward inclusive education can predict readiness to experiment with UDL-aligned strategies even in resource-limited schools.

Teachers' willingness to adopt innovative instructional frameworks such as Universal Design for Learning (UDL) can be conceptually linked to the theory of growth mindset. Growth mindset refers to the belief that abilities and competencies can be developed through effort, learning, and persistence. Teachers who hold a growth mindset are more likely to perceive instructional change as an opportunity for professional development rather than a challenge to existing practices. Consequently, they tend to demonstrate greater openness to adopting inclusive and flexible teaching approaches such as UDL. Empirical evidence supports this relationship. Laine et al. (2023) found that teachers with growth-oriented beliefs are more likely to engage in adaptive and inclusive teaching practices, indicating that mindset influences instructional behavior. Similarly, Seo et al. (2025) reported that growth mindset-oriented teaching practices significantly predict sustained engagement and positive educational outcomes, suggesting that teachers' beliefs directly shape their pedagogical decisions. Given that UDL emphasizes flexibility, responsiveness to learner variability, and continuous instructional improvement, teachers with a growth mindset are more inclined to adopt its principles. Thus, growth mindset can be considered a key psychological factor influencing teachers' willingness to implement UDL in inclusive classroom settings.

Conceptual Framework

Figure 1 presents the conceptual framework of the study, illustrating how teacher profile factors influence their willingness to adopt the Universal Design for Learning (UDL) approach in inclusive classrooms. The framework is designed to provide a simplified and unified representation of the variables involved in the study. In this framework, the teacher serves as the central component, representing the respondents of the study. The teacher is characterized by several profile variables, including sex, nationality, grade level taught, marital status, age, and years of teaching which are assumed to influence the teachers' level of willingness to adopt UDL.

The framework shows that these profile factors of teachers are directly linked to the dependent variable, which is the willingness to adopt UDL. This indicates that variations in teachers' backgrounds and experiences may contribute to differences in their openness, readiness, and motivation to implement inclusive instructional practices aligned with UDL principles. Furthermore, the framework highlights that the results of the analysis will serve as the basis for the development of a proposed program or intervention. This program is intended to enhance teachers' willingness and capacity to adopt UDL in their inclusive classrooms.

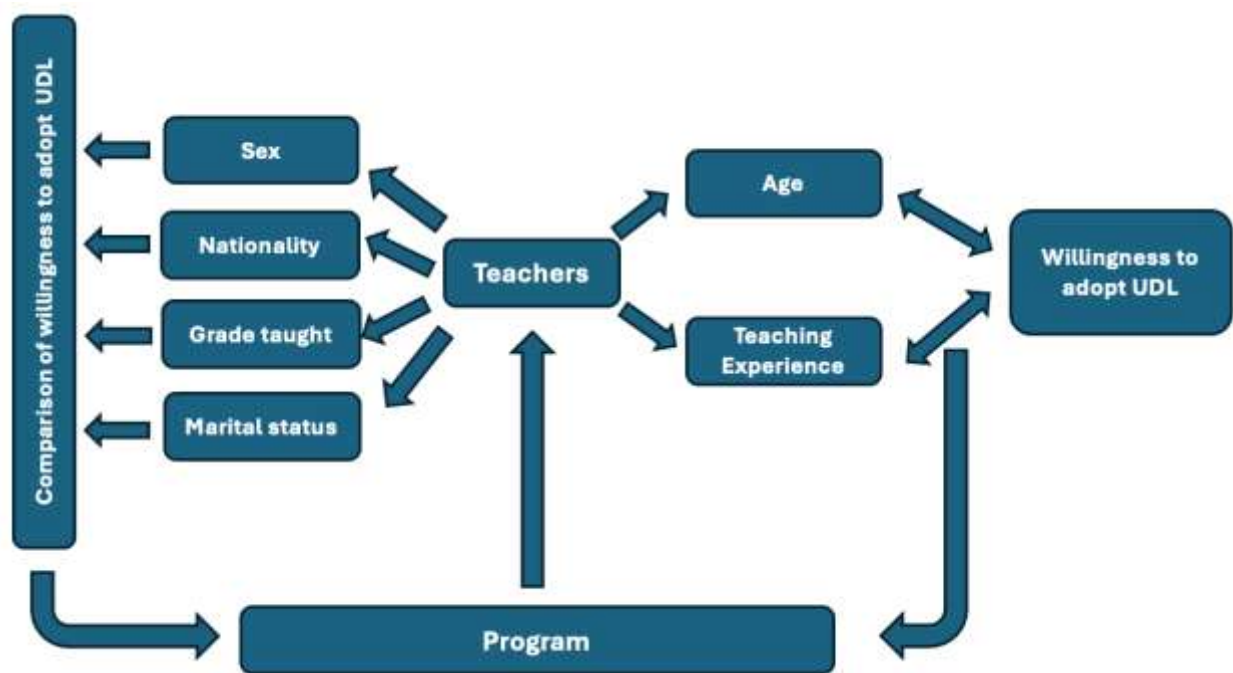


Figure 1
Schematic Diagram of the Conceptual Framework of the Study

Research Questions

The primary goal of this study was to investigate the relationship between teacher profile factors and their willingness to implement the Universal Design for Learning (UDL) framework in inclusive classes at Sekolah Regina Pacis–Jakarta. Specifically, the study sought to describe the respondents' demographic profiles in terms of sex, nationality,

grade level taught, years of teaching experience and marital status and also to determine the level of willingness to implement UDL when grouped according to these variables; and to examine whether significant relationships exist between teacher profile factors and their willingness to apply UDL principles. Furthermore, based on the results, the study aimed to recommend programs or interventions that can enhance and support teachers' implementation of UDL in inclusive classroom settings.

This study addressed the overarching research question: *Is there a relationship between teacher profile factors and their willingness to implement the Universal Design for Learning (UDL) framework in inclusive classes at Sekolah Regina Pacis–Jakarta?*

To address this question, the following sub-questions were formulated:

1. What is the demographic profile of the respondents?
 - 1.1 Sex
 - 1.2 Nationality
 - 1.3 Grade Level Taught
 - 1.4 Teaching Experience
 - 1.5 Marital Status
2. What is the level of willingness to adopt UDL among teachers when grouped according to:
 - 2.1 Sex;
 - 2.2 Nationality;
 - 2.3 Grade Level Taught;
 - 2.4 Teaching Experience;
 - 2.5 Marital Status?
3. Is there a significant difference between the respondents' level of willingness to adopt UDL when grouped according to
 - 3.1 Sex;
 - 3.2 Nationality;
 - 3.3 Grade level taught;
 - 3.4 Marital status?
4. Is there a significant relationship between the respondents' level of willingness to adopt UDL and their:
 - 4.1 Age;
 - 4.2 Years of Teaching?
5. Based on the findings, what programs or interventions can be proposed to enhance teachers' adoption of UDL in inclusive classrooms?

Hypothesis

There is no significant relationship between teacher profile factors and their willingness to implement the Universal Design for Learning (UDL) approach in inclusive classes.

Scope and Delimitation of the Study

This descriptive-correlational research aimed to investigate the relationship between teacher profile factors and their willingness to implement the Universal Design for Learning (UDL) framework in inclusive classes at Sekolah Regina Pacis–Jakarta. Specifically, the study examined how sex, nationality, grade level taught, teaching

experience and marital status relate to teachers' willingness to apply UDL principles in their classroom practices. Data were collected using a researcher-made questionnaire designed to assess teachers' perceptions, attitudes, and self-reported willingness to integrate UDL strategies in inclusive education settings.

The scope of this study was limited to Sekolah Regina Pacis–Jakarta and included only teachers who were currently handling inclusive classes. It did not cover students, parents, or teachers from non-inclusive settings. Furthermore, the study focused on teachers' willingness to implement UDL rather than actual classroom implementation, as measuring practice-based adoption would require long-term classroom observation. Other factors such as subject specialization, and school infrastructure were not examined in detail.

These delimitations were set to ensure a manageable and focused investigation while still providing meaningful insights for improving teacher preparedness, informing professional development programs, and guiding policy decisions related to inclusive education. By narrowing the scope, the study aimed to generate practical and context-specific recommendations for promoting the adoption of UDL at Sekolah Regina Pacis.

METHODOLOGY

This study employed a descriptive-correlational research design to examine the relationship between teachers' willingness to adopt the Universal Design for Learning (UDL) approach and selected demographic and psychological factors, including sex, nationality, grade level taught, and teaching experience. The design was appropriate because the research sought not only to describe existing conditions among teachers handling inclusive classes but also determined the extent to which these variables are associated with their willingness to apply UDL principles.

According to Creswell and Creswell (2018), a descriptive-correlational design enables researchers to describe characteristics of a specific population while simultaneously identifying possible relationships between variables without manipulating any of them. In this research, the design allowed the researcher to determine whether variations in teachers' willingness to adopt UDL were significantly correlated with factors such as gender, teaching experience, or exposure to inclusive education programs. The goal was not to establish causation but to explore possible associations that may explain patterns of willingness within the inclusive education context.

The descriptive component of the design focused on gathering data that will provide an overview of teachers' demographic profiles, levels of UDL awareness, and overall willingness to adopt the approach. Meanwhile, the correlational component sought to identify whether statistically significant relationships exist between these factors and the teachers' willingness scores. By integrating both components, the design offered a comprehensive understanding of how teacher characteristics may influence their readiness to implement inclusive pedagogical frameworks.

Data was analyzed using descriptive statistics such as frequency, percentage, mean, and standard deviation to summarize teachers' characteristics and willingness levels. To identify if there is a significant difference between teachers' level of willingness to adopt UDL, Welch t-test, one-way Analysis of Variance (ANOVA), and Pearson Product-Moment Correlation Coefficient (r) were used. The level of significance was set at 0.05, which means that results with $p < 0.05$ will be considered statistically significant.

Moreover, reliability of the UDL Willingness Questionnaire was assessed using Cronbach's Alpha to determine the internal consistency of the instrument.

Locale of the Study

Sekolah Regina Pacis – Jakarta demonstrates inclusive education across different grade levels. The school serves 100 Kindergarten students (8 with special educational needs), 338 Primary students (19 SEN), and 165 Junior High students (5 SEN), while its 146 Senior High students currently have no identified SEN (Sekolah Regina Pacis Jakarta, 2025). Although the school does not employ special education teachers, classroom teachers are adept at using technology to support diverse learners. This context reflects the school's strong commitment to inclusion while also underscoring the need for a structured framework and additional training to help teachers effectively meet the diverse needs of all learners.

Participants

This research was implemented to teachers handling inclusive classroom in school year 2025-2026. The researcher used a non-probability purposive convenience sampling in identifying the participants to be included in the research. There was a total of 40 teachers participated in this study composed of 20 kindergarten teachers, 11 primary teachers, and 9 grade 7, 8 and 9 teachers which are all handling inclusive classes.

Instruments of the study

There were two researcher-made instruments used in this research: (1) a questionnaire on the teachers' demographic profile covering variables such as age, gender, nationality, years of experience, grade level handled, and (2) UDL Willingness Questionnaire which is a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) assessing teachers' willingness to integrate UDL principles into their teaching practice. The scale also included items representing the three core principles of UDL based on the CAST (2018) framework: (1) engagement, (2) representation, and (3) action and expression. To establish the validity of the research instrument, the researcher requested a formal review and evaluation from three recognized experts in the field of Special Education, all of whom possessed relevant advanced academic qualifications and substantial professional experience in educational research and practice.

Data Gathering Procedure

The researcher first sent a formal letter to the school principal requesting permission to conduct the study, including the objectives, number of participants, and proposed schedule. Upon approval, participating teachers were identified, and informed consent and confidentiality agreements were secured. The questionnaires on demographic profiles and level of willingness were then distributed through a QR code and shared link to facilitate efficient data collection using Google Sheets. After all responses were gathered, the data were collected, analyzed, and interpreted using the appropriate statistical methods

Statistical Treatment of Data

This research aimed to provide answer to the following research questions through these statistical treatments.

1. The reliability of the UDL Willingness Questionnaire was assessed using Cronbach's Alpha to determine the internal consistency of the instrument. Below is the interpretation of the Alpha value:

Table 1
Alpha Value Interpretation.

≥ 0.90	Excellent
0.80 – 0.89	Good
0.70 – 0.79	Acceptable
0.60 – 0.69	Questionable
< 0.60	Poor

2. What is the level of willingness to adopt UDL among teachers when grouped according to sex, nationality, grade level taught, teaching experience and marital status?

To determine the level of willingness of the teachers participating in this research, the researcher will consolidate the data gathered from the survey. The frequency distribution, percentage, mean, and the standard deviation will be computed and compared. Below is the scoring interpretation of the level of willingness:

Table 2
Willingness Score Interpretation.

4.200-5.000	Very High Willingness
3.400-4.199	High Willingness
2.600-3.399	Moderate Willingness
1.800-2.599	Low Willingness
1.000-1.799	Very Low Willingness

3. Is there a significant difference between the respondents' level of willingness to adopt UDL when grouped according to
 - 3.1 Sex;
 - 3.2 Nationality;
 - 3.3 Grade level taught;
 - 3.4 Marital status?

To determine if there is a significant relationship between the respondents' level of willingness to adopt UDL when grouped according to sex, the researcher used the Welch t-test, also known as Welch's unequal variances t-test, a statistical procedure used to compare the means of two

independent groups when the assumption of equal variances is not met. Unlike the traditional Student's t-test, which requires homogeneity of variance, the Welch t-test adjusts for differences in group variances, making it more robust and reliable under unequal conditions. This adjustment allowed for more accurate estimation of significance levels, particularly in real-world data where variance equality is often violated. As a result, the Welch t-test is widely recommended for its flexibility and ability to produce dependable results even when standard assumptions are not satisfied (Rihaldijiran, 2024).

On the other hand, Analysis of Variance (ANOVA) was used to determine whether there are statistically significant differences in the respondents' level of willingness to adopt UDL when grouped according to nationality, grade level taught, and marital status. ANOVA is appropriate because each of these independent variables consists of three or more groups.

4. Is there a significant relationship between the respondents' level of willingness to adopt UDL and their:
 - 4.1 Age, and
 - 4.2 Years of Teaching?

To determine the significant relationship between the respondents' level of willingness to adopt UDL and their age and years of teaching, the Pearson Product-Moment Correlation Coefficient (r) was used. Below are the interpretations of the r -values:

Table 3
Interpretation of r -values.

r -value	Strength of Relationship
0.80 – 1.00	Very High Positive Correlation
0.60 – 0.79	High Positive Correlation
0.40 – 0.59	Moderate Positive Correlation
0.20 – 0.39	Low Positive Correlation
0.00 – 0.19	Very Low / Negligible

Ethical Considerations

The researcher followed the necessary ethical procedures for this research. Prior to data collection, permission was obtained from the school administrators. All participants were informed about the objectives of the study, voluntary participation, and confidentiality of responses. The participants were also informed that they may withdraw at any point without penalty of justification. All data gathered will be anonymized, and results were only used for research purposes of this study. The research accepted the responsibility of protecting the privacy, dignity, and well-being of all the participants, should there be any violations, the researcher takes full accountability.

RESULTS

This section presents the results of the study, together with the corresponding analysis and interpretation of the data collected. The data were processed using appropriate statistical tools, including frequency distribution, Welch t-test, one -way Analysis of Variance (ANOVA), and Pearson Product-Moment Correlation Coefficient (r) to determine the relationships between teachers' profile variables and their willingness to adopt Universal Design for Learning (UDL).

The presentation of findings is organized according to the specific problems of the study. Tables are used to clearly summarize the data, followed by short description and interpretation. These analyses provide a comprehensive understanding of the patterns observed in the data and served as a basis for the discussion, conclusions, and recommendations in the next section of this study.

To ensure the consistency and dependability of the research instrument, a reliability analysis was conducted using Cronbach's Alpha. This statistical test was employed to assess the internal consistency of the UDL Willingness Questionnaire, which consists of items measuring teachers' willingness across four domains: engagement, representation, action and expression, and readiness.

The results of the analysis are presented in Table 4, showing the Cronbach's Alpha coefficients for each subscale as well as for the overall instrument. These findings provide evidence on the reliability of the questionnaire used in this study. The results indicate that the overall scale demonstrated a high level of reliability, suggesting that the items consistently measure the construct of teachers' willingness to adopt UDL. Each subscale, including engagement, representation, action and expression, and readiness, also showed acceptable to high reliability coefficients. These findings confirm that the instrument is reliable and suitable for use in assessing teachers' willingness toward UDL implementation.

Table 4
Reliability Analysis of the UDL Willingness Questionnaire Using Cronbach's Alpha.

Scale / Subscale	Number of Items	Cronbach's Alpha (α)	Interpretation
Engagement	5	0.758	Acceptable
Representation	5	0.867	Good
Action and Expression	5	0.752	Acceptable
Readiness	5	0.879	Good
Overall Scale	20	0.943	Excellent

Profiles of the Respondents

The following table shows the distributions of the respondents' profile variables which were determined using frequency and percentage distributions.

Table 5
Profile of respondents in terms of sex.

Sex	Frequency	Percentage
Male	8	20.0
Female	32	80.0
Total	40	100

As shown in Table 5, most of the respondents were female, with a frequency of 32 or 80% while there was a total of 8 male respondents out of 40 representing 20% of the total respondents.

Table 6
Profile of respondents in terms of Nationality.

Nationality	Frequency	Percentage
Indonesian	36	90.0
Filipino	3	7.5
French	1	2.5
Total	40	100

Table 6 shows the distribution of respondents in terms of Nationality. As shown, the total respondents were mainly comprised 90.0% of Indonesians of 36 out of 40 respondents. Followed by 7.5% or 3 out 40 Filipinos, and only 1 or 2.5% from France.

Table 7
Profile of respondents in terms of grade level taught.

Grade Level	Frequency	Percentage
Kindergarten (TK)	20	50.0
Primary (SD)	11	27.5
Junior High (SMP)	9	22.5
Total	40	100

Table 7 shows the distribution of grade level taught of the respondents. Kindergarten (TK) teacher respondents are the most with 20 out of 40 respondents or 50%. Primary (SD) is 11 out of 40 or 27.5% while the remaining 22.5% is Junior High (SMP) or 9 out of 40 respondents.

Table 8
Profile of respondents in terms of number of years of teaching experience.

Years of Teaching	Frequency	Percentage
1–5	9	22.5
6–10	9	22.5
11–15	6	15.0
16–20	8	20.0

21–25	3	7.5
26–30	5	12.5
31–35	1	2.5
36–40	1	2.5
Total	40	100

Table 8 below shows the distribution of respondents in terms of number of years of teaching experience. It can be observed that among the respondents, those with 1-5 and 6-10 years of teaching experience answered the most with 9 in each group or equivalent to 22.5%, followed by those with 16-20 years of teaching experience which has a total of 8 out of 40 or 20.0%. Respondents with 31-35 and 36-40 years of experience were also captured in the survey having only 1 of each group or 2.5% of the total respondents.

Table 9
Profile of respondents in terms of marital status.

Marital Status	Frequency	Percentage
Single (Lajang)	14	35.0
Married (Menikah)	24	60.0
Widowed (Duda/Janda)	2	5.0
Total	40	100

Finally, Table 9 shows the distribution of respondents in terms of marital status. The table shows that among the respondents, only 14 are single equivalent to 25%, while there are 24 married, 60%, and only 2 are widowed, which is equivalent to 5%.

Level of Willingness to Adopt UDL Among Teachers When Grouped According to Profile Variables

Tables below provide a tabulated results showing the level of willingness among the respondents in terms of their profile variables (sex, nationality, grade level taught, teaching experience, and marital status). The results is based on the UDL Willingness Questionnaire which is a 5-point Likert scale (1 = Very Low Level of Willingness to 5 = Very High Level of Willingness) assessing teachers' willingness to integrate UDL principles into their teaching practice. The scale also includes items representing the three core principles of UDL based on the CAST (2018) framework: (1) engagement, (2) representation, and (3) action and expression. The scores on each core principles where averaged and the results were interpreted based on the scoring interpretation shown in Table 2.

Table 10
Level of Willingness of Respondents According to Sex.

Sex	Level of Willingness to Adopt UDL					Total	Mean	Std. Dev.
	Very Low (1)	Low (2)	Moderate (3)	High (4)	Very High (5)			
Male	0	0	5	2	1	8	3.5	0.71
Female	0	0	22	6	4	32	3.44	0.70
Over all	0	0	27	8	5	40	3.45	0.71

Table 10 shows that most of the respondents scored a moderate level of willingness to Adopt UDL having 27 out of 40. Among this level, 22 out of 27 were female while 5 are male. A total of 8 out of 40 respondents scored a high level of willingness comprised of 6 females and 2 males. 5 out of 40 respondents scored a very high level of willingness where 4 are females and 1 male. It is also noteworthy that no males and females scored a very low and low levels of willingness to adopt UDL.

Table 11
Level of Willingness of Respondents According to Nationality.

Nationality	Level of Willingness to Adopt UDL					Total	Mean	SD
	Very Low (1)	Low (2)	Moderate (3)	High (4)	Very High (5)			
Indonesian	0	0	24	8	4	36	3.44	0.69
Filipino	0	0	2	0	1	3	3.67	0.94
France	0	0	1	0	0	1	3.00	0.00
Overall	0	0	27	8	5	40	3.45	0.71

Table 11 below shows the level of willingness of respondents to adopt UDL according to Nationality. 27 out of 40 respondents have a moderate level of willingness and in this 27, 24 are Indonesians, 2 are Filipinos, and 1 France. A high level of willingness was recorded among 8 respondents out of 40 which are all Indonesians while only 5 out of 40 have a very high level of willingness, these 5 respondents were comprised of 4 Indonesians and 1 Filipino. No respondents also did not have a very low to low levels of willingness to adopt UDL as can be observed in the table.

Table 12
Level of Willingness of Respondents According to Grade Level Taught.

Grade Level	Level of Willingness to Adopt UDL					Total	Mean	SD
	Very Low (1)	Low (2)	Moderate (3)	High (4)	Very High (5)			
Kindergarten (TK)	0	0	9	2	0	11	3.18	0.39
Primary (SD)	0	0	12	5	3	20	3.55	0.74
Junior High (SMP)	0	0	6	1	2	9	3.56	0.73
Overall	0	0	27	8	5	40	3.45	0.71

The researcher also investigated the level of willingness of respondents to adopt UDL according to their grade level taught. Table 12 shows the tabulated scores of their willingness. As observed, 27 out of 40 has a moderate level of willingness comprising of 12 respondents from Primary (SD), 9 from Kindergarten (TK), and 6 from Junior High (SMP). Followed by 8 high willingness with 5 from Primary (SD), 2 from Kindergarten (TK) and only 1 from Junior High (SMP). From the 40 respondents, only 5 have a very high willingness where 3 came from Primary (SD), and 2 from Junior High (SMP).

Table 13
Level of Willingness of Respondents According to Number of Years of Teaching.

Years of Teaching	Level of Willingness to Adopt UDL					Total	Mean	SD
	Very Low (1)	Low (2)	Moderate (3)	High (4)	Very High (5)			
1–5	0	0	7	2	0	9	3.22	0.44
6–10	0	0	5	2	2	9	3.67	0.87
11–15	0	0	3	2	1	6	3.67	0.82
16–20	0	0	7	0	1	8	3.25	0.46
21–25	0	0	1	1	0	2	3.50	0.71
26–30	0	0	3	1	0	4	3.25	0.50
31–35	0	0	1	0	0	1	3.00	0.00
36–40	0	0	0	0	1	1	5.00	0.00
Overall	0	0	27	8	5	40	3.45	0.71

Table 13 shows the level of willingness of respondents according to number of years of teaching experience. It can be observed that among the clustered group, there

are also 27 respondents with moderate willingness, 8 with high willingness, and 5 very high willingness.

Table 14
Level of Willingness of Respondents According to Marital Status.

Marital Status	Level of Willingness to Adopt UDL					Total	Mean	SD
	Very Low (1)	Low (2)	Moderate (3)	High (4)	Very High (5)			
Single (Lajang)	0	0	10	4	0	14	3.29	0.47
Married (Menikah)	0	0	16	4	4	24	3.50	0.78
Widowed (Duda/Janda)	0	0	1	0	1	2	4.00	1.41
Total	0	0	27	8	5	40	3.45	0.71

Finally, Table 14 shows the level of willingness of respondents according to marital status. Data shows similar distribution from the profile variables above having 27 out of 40 who has a moderate willingness. But in terms of marital status, out of 27 moderate willingness level, 16 are those married, 10 are single, and 1 is widowed. A high level of willingness was gained from 8 out of 40 respondents, of which 4 are from married and 4 from single. 5 out of 40 has very high willingness with which, 4 are from married and 1 from widowed.

Difference between the respondents' level of willingness to adopt UDL when grouped according to Sex, Nationality, Grade Level Taught, and Marital Status

Table 15
Difference Between UDL Willingness According to Sex.

Welch t test results		
P value and statistical significance: The two-tailed P value equals 0.9649 By conventional criteria, this difference is not statistically significant .		
Confidence interval: The mean of Female minus Male equals 0.156250000 95% confidence interval of this difference: From -7.659542406 to 7.972042406		
Intermediate values used in calculations: t = 0.0452 df = 9 standard error of difference = 3.455		
Group	Female	Male

Mean	87.156250000	87.000000000
SD	7.800369600	8.960229600
SEM	1.378923560	3.167919556
N	32	8

Table 15 presents the difference in UDL willingness between male and female respondents using the Welch t-test. The results revealed that the computed p-value is 0.9649, which is greater than the 0.05 level of significance. This indicates that there is no statistically significant difference in the level of willingness to adopt UDL between male and female teachers.

Table 16
Difference Between UDL Willingness When Grouped According to Nationality.

ANOVA Summary				
Source	SS	df	MS	F
Between Groups	70.02	2	35.01	0.5496
Within Groups	2292.96	36	63.69	
Total	2362.97	38		
F(2, 36) = 0.5496 p-value = 0.581919				

Table 16 presents the results of the one-way ANOVA test examining differences in willingness to adopt UDL across nationality groups. The analysis yielded an F-value of 0.5496 with a corresponding p-value of 0.5819, which is greater than the 0.05 level of significance. This indicates that there is no statistically significant difference in willingness among teachers of different nationalities.

Table 17
Difference between UDL Willingness when grouped according to level taught.

ANOVA Summary				
Source	SS	df	MS	F
Between Groups	149.91	2	74.95	1.2678
Within Groups	2128.45	36	59.12	
Total	2278.36	38		
F(2, 36) = 1.2678 p-value = 0.293727				

Table 17 presents the ANOVA results for the difference in willingness to adopt UDL when grouped according to grade level taught. The computed F-value is 1.2678 with a p-

value of 0.2937, which is greater than the 0.05 level of significance. Therefore, there is no statistically significant difference in willingness across the different grade levels.

Table 18
Difference Between UDL Willingness When Grouped According to Marital Status.

ANOVA Summary				
Source	SS	df	MS	F
Between Groups	171.70	2	85.85	1.3952
Within Groups	2276.67	37	61.53	
Total	2448.38	39		
F(2, 37) = 1.3952 p-value = 0.260507				

Table 18 shows the ANOVA results for differences in willingness based on marital status. The computed F-value is 1.3952 with a p-value of 0.2605, which exceeds the 0.05 significance level. This indicates that there is no statistically significant difference in willingness among respondents when grouped according to marital status.

3.4 Relationship Between the Respondents' Level of Willingness to Adopt UDL and their Age and Years of Teaching

Table 19
Relationship between Age and UDL Willingness.

Pearson r computation		
Mean X: 39.5250	ΣX (Sum of X): 1581.0000	ΣX^2 (Sum of X^2): 66545.0000
Mean Y: 87.1250	ΣY (Sum of Y): 3485.0000	ΣY^2 (Sum of Y^2): 306079.0000
	ΣXY (Sum of XY): 137313.0000	
r = -0.1370		

Table 19 presents the Pearson correlation analysis between age and willingness to adopt UDL. The computed correlation coefficient is $r = -0.137$ with a p-value of 0.399, which is greater than the 0.05 level of significance. This indicates that there is no statistically significant relationship between age and willingness.

Table 20
Relationship between Years of Teaching and UDL Willingness.

Pearson r computation		
Mean X: 13.7000	ΣX (Sum of X): 548.0000	ΣX^2 (Sum of X^2): 11110.0000
Mean Y: 87.1250	ΣY (Sum of Y): 3485.0000	ΣY^2 (Sum of Y^2): 306079.0000
	ΣXY (Sum of XY): 47755.0000	
r = 0.0035		

Table 20 presents the Pearson correlation between years of teaching experience and willingness to adopt UDL. The computed correlation coefficient is $r = 0.0035$ with a p-value of 0.983, which is greater than the 0.05 level of significance. This indicates that there is no statistically significant relationship between teaching experience and willingness.

Proposed Program or Intervention to Enhance Teachers' Adoption of UDL in Inclusive Classrooms

It is recommended that the school implements *A Capacity-Building Program for Inclusive Teaching* supported by coaching, collaborative learning communities, and adequate instructional resources.

DISCUSSION

Profiles of the Respondents

The profile of the respondents provides a comprehensive overview of the demographic and professional characteristics of the teachers who participated in the study. Based on the tabulated results, the majority of the respondents were female (80%), while only 20% were male, indicating that the teaching workforce in the institution is predominantly composed of women. In terms of nationality, most respondents were Indonesian (90%), with a small representation of Filipino (7.5%) and French (2.5%) teachers, suggesting that the sample largely reflects a local teaching context with limited international diversity.

With respect to grade level taught, the largest group of respondents were Kindergarten (50%) teachers, followed by Primary (27.5%) and Junior High School (22.5%) teachers. This distribution indicates that the study captured a range of perspectives across different educational levels, although early childhood educators were more heavily represented. In terms of teaching experience, the respondents were distributed across various experience levels, with the highest frequencies observed in the 1–5 years and 6–10 years categories (both 22.5%), followed by 16–20 years (20%). This suggests a balanced representation of early-career and mid-career teachers, with fewer respondents in the higher experience brackets.

Finally, in terms of marital status, the majority of respondents were married (60%), followed by single (35%), and a small proportion were widowed (5%). This indicates moderate variation within this variable, although the sample is still dominated by one category. Overall, the profile of respondents reflects a predominantly female, locally based teaching population with diverse teaching assignments and a range of professional experience levels. These characteristics provide important context for interpreting the study's findings, particularly in understanding why willingness to adopt UDL was found to be consistent across different groups.

Level of Willingness to Adopt UDL Among Teachers When Grouped According to Profile Variables

As presented in Table 10, male respondents also garnered a mean of 3.5 and standard deviation of 0.71 while females have 3.44 and standard deviation of 0.71. The almost similar means and standard deviation indicates that there are to meaningful difference by sex in practical terms. An overall mean for the respondents' willingness to adopt to UDL is 3.45 with standard deviation of 0.71. The overall mean was falls between moderate (3) and high (4), closer to moderate-high willingness, while the low standard deviation indicates that the responses are tightly clustered, suggesting that the respondents are consistent with their perceptions. This result also suggest that the respondents generally exhibit moderately high willingness to adopt UDL regardless of sex.

The mean and standard deviation of Indonesian respondents are 3.44 and 0.69, respectively, while Filipinos have 3.67 and 0.94 respectively as can be seen in Table 11. France on the other hand, have a mean of 3.00 and 0.00 standard deviation. An overall mean of 3.45 indicates a moderately high willingness and a 0.71 standard deviation suggest low variability, both leading that responses are consistent across respondents. However, due to high unequal group size, comparison is not statistically robust. This is due to the data that there are only three Filipinos which is smaller compared to the total number of Indonesians while, France has only one representation resulting to have 0.00 standard deviation.

As shown in Table 12, among the grade levels, Kindergarten (TK) have the lowest mean of 3.18 and standard deviation of 0.39. this suggests that while they are clustered to moderate level of willingness, this also shows low inclination towards high level of willingness. Both Primary (SD) and Junior High (SMP) on the other hands, have almost similar means and standard deviations of 3.55, 3.56 and 0.74 and 0.73, respectively. The statistics shows moderately high willingness and are more inclined toward high and very high willingness. An overall mean and standard deviation of 3.45 and 0.71, respectively, indicates moderately high willingness and is consistent among respondents.

While looking at the means and standard deviations among the groups in Table 13, groups 6-10 and 11-15 years of teaching experience both got the same mean of 3.67 which suggest a more consistent variable indicating a strong willingness towards UDL adoption. Group 31-35 shows purely moderate while group 36-40 shows purely very high willingness due to having only 1 of each respondent. Overall, the mean of 3.45 and standard deviation of 0.71 indicates that the willingness tends to peak at mid-career (6-15 years of teaching experience) and is generally moderate to moderately high willingness to adopt UDL across all years of experiences with limited variability.

The data in Table 14 shows that the means relatively vary. A mean of 3.29 and standard deviation of 0.47 among single respondents falls in the moderate range with low reliability indicating that the responses are concentrated in the moderate willingness. Married respondents on the other hand have a mean of 3.50 and standard deviation of 0.78, which shows moderately high willingness with broader spread including high and very high willingness. Widowed respondents, however, shows high mean and standard deviation which are 4.00 and 1.41 respectively. These values indicate extreme variation due to small number which is only 2 based on the table. Similar to previous profile variables, an overall mean of 3.45 and standard deviation of 0.71 was also computed.

Values suggest that married respondents demonstrate slightly higher willingness than single respondents, but differences are small and practically similar. The widowed category is not reliable for inference due to very small sample size.

Difference between the respondents' level of willingness to adopt UDL when grouped according to Sex, Nationality, Grade Level Taught, and Marital Status

Table 15 revealed that the computed p-value is 0.9649, which is greater than the 0.05 level of significance. This indicates that there is no statistically significant difference in the level of willingness to adopt UDL between male and female teachers. The mean willingness score for female respondents ($M = 87.16$, $SD = 7.80$) is slightly higher than that of male respondents ($M = 87.00$, $SD = 8.96$); however, the difference is minimal and falls within the confidence interval (-7.66 to 7.97), indicating that the variation is due to chance. This implies that sex does not significantly influence teachers' willingness to adopt UDL. Both male and female teachers demonstrate comparable levels of openness toward inclusive instructional practices. This result conforms with study of Chen et al. (2023) which investigated the correlation between teachers' attitude including gender towards UDL. The study found out that while there is a positive attitude among teachers towards UDL, there was no significant correlation between gender and the UDL framework scale. While the study of Duncan et al. (2025) suggests that female teachers tend to adopt inclusive practices align with UDL, the study lacks causation noting that the sample size is small and context-specific (focused on disability teaching contexts).

Table 16 presents the results of the one-way ANOVA test examining differences in willingness to adopt UDL across nationality groups. The analysis yielded an F-value of 0.5496 with a corresponding p-value of 0.5819, which is greater than the 0.05 level of significance. This indicates that there is no statistically significant difference in willingness among teachers of different nationalities. The result suggests that nationality does not play a determining role in influencing teachers' willingness to adopt UDL. The variation observed between group means is not significantly greater than the variation within groups, indicating that willingness is relatively consistent regardless of nationality. A study by Chen et al. (2023) confirms this result where they conducted a comparative study between Australia and China. Their findings showed that teachers' attitude towards UDL are not inherently due to nationality but more on educational systems and contextual conditions. In addition, adoption of UDL depends largely on resources and institutional support rather than where the teachers come from (Wea et al., 2025).

Table 17 presents the ANOVA results for the difference in willingness to adopt UDL when grouped according to grade level taught. The computed F-value is 1.2678 with a p-value of 0.2937, which is greater than the 0.05 level of significance. Therefore, there is no statistically significant difference in willingness across the different grade levels. This finding indicates that teachers' willingness to adopt UDL does not vary significantly based on whether they teach kindergarten, primary, or junior high levels. The results suggest that teachers across all grade levels exhibit similar attitudes toward inclusive instructional practices. While implementation of UDL receives positive responses from teachers across different grade levels, there is no evidence that suggests a clustered preference, hence, grade level could not be considered as a factor affecting the attitude of teachers to implement UDL framework (Wea et al., 2025). Moreover, it is the shared professional beliefs about inclusion that drives teachers to adopt UDL (Han and Lei, 2024).

Table 18 shows the ANOVA results for differences in willingness based on marital status. The computed F-value is 1.3952 with a p-value of 0.2605, which exceeds the 0.05 significance level. This indicates that there is no statistically significant difference in willingness among respondents when grouped according to marital status. This suggests that marital status does not significantly influence teachers' willingness to adopt UDL. The observed differences among single, married, and widowed respondents are not sufficient to establish a meaningful variation in willingness levels. This result is consistent with literature indicating that marital status of teachers is not considered as factors in adopting UDL framework (Alfawzan, 2025). In addition, according to Singh et al. (2025), even when demographics, including marital status, are included to test the association to level of willingness and attitudes toward UDL, they are still considered secondary or insignificant predictors. Zhang and Wareewanich (2024) emphasized that performance expectancy, social influence, and support systems drives adoption; professional and institutional variables shape adoption behavior towards UDL not personal life status.

Across all profile variables—sex, nationality, grade level taught, and marital status—the results consistently show no statistically significant differences in teachers' willingness to adopt UDL. This implies that willingness is relatively uniform across demographic groups, suggesting that other factors beyond basic profile characteristics may play a more critical role in influencing teachers' adoption of UDL.

Relationship Between the Respondents' Level of Willingness to Adopt UDL and their Age and Years of Teaching

Table 19 presents the Pearson correlation analysis between age and willingness to adopt UDL. The computed correlation coefficient is $r = -0.137$ with a p-value of 0.399, which is greater than the 0.05 level of significance. This indicates that there is no statistically significant relationship between age and willingness. The negative correlation suggests a very weak inverse relationship; however, the magnitude is negligible and not statistically meaningful. This implies that age does not significantly influence teachers' willingness to adopt UDL.

Table 20 presents the Pearson correlation between years of teaching experience and willingness to adopt UDL. The computed correlation coefficient is $r = 0.0035$ with a p-value of 0.983, which is greater than the 0.05 level of significance. This indicates that there is no statistically significant relationship between teaching experience and willingness. The correlation is nearly zero, suggesting no linear relationship between the variables. This implies that the number of years a teacher has been in service does not significantly affect their willingness to adopt UDL practices. According to Rai & Dvivedi (2025), while awareness level in UDL can be seen across different years of experience, it is insufficient to conclude that the more years of experience a teacher has, the more it is inclined to adopt UDL framework. A newly hired teacher with training may adopt UDL more effectively than those with more teaching experience (Alfawzan, 2025).

Proposed Program or Intervention to Enhance Teachers' Adoption of UDL in Inclusive Classrooms

Based on the findings, it is recommended that the school implements structured professional development programs on Universal Design for Learning such as *A Capacity-Building Program for Inclusive Teaching*, supported by coaching, collaborative

learning communities, and adequate instructional resources. Since profile variables such as sex, nationality, grade level taught, years of experience, and marital status were not found to significantly influence willingness, interventions should focus on enhancing teachers' competencies, self-efficacy, and institutional support systems to facilitate effective UDL implementation in inclusive classrooms.

Findings

This study was conducted to investigate the relationship between profile factors of teachers in Sekolah Regina Pacis–Jakarta and their willingness to implement universal design for learning (UDL) approach in their inclusive classes.

Among the important findings of this study are highlighted as follows:

1. Most of the respondents were female, with a frequency of 32 or 80% while there was only a total of 8 male respondents out of 40 representing 20% of the total respondents.

In terms of nationality, 90% of the respondents are Indonesians or 36 out of 40. Filipinos are 3 out of 40 or 7.5% of the total respondents while 2.5% of the respondents came from France which is equivalent to 1 respondent.

Across grade level taught which comprised of Kindergarten (TK), Primary (SD), and Junior High (SMP), Kindergarten (TK) teacher respondents are the most with 20 out of 40 respondents or 50%. Primary (SD) is 11 out of 40 or 27.5% while the remaining 22.5% are from Junior High (SMP) which is 9 out of 40 respondents.

When grouped according to number of years of teaching experience, those with 1-5 and 6-10 years of teaching experience answered the most with 9 in each group or equivalent to 22.5% each. Teachers with 11-15 years of experience filled 6 out of 40 respondents corresponding to 15%. Those with 16-20 years of teaching experience has the second most number of respondents which has a total of 8 out of 40 or 20.0%. Respondents with 31-35 and 36-40 years of experience were also captured in the survey having only 1 of each group or 2.5% of the total respondents.

Among the respondents, those who are married answered the most representing 60% or 24 out of 40 respondents. There are also 14 who are single equivalent to 35%, while there are only 2 who are widowed, which is equivalent to 5%.

2. When grouped according to sex, the respondents accumulated a mean score of 3.45 suggesting a moderately high level of willingness to adopt UDL. A small standard deviation of 0.71 also suggest a tightly clustered responses that indicates a consistent perception among the respondents.

Male and female respondents also have similar mean scores indicating that willingness is moderately high regardless of sex.

3. Respondents of this study are comprised mostly of Indonesians (90%) while Filipinos are only a small fraction (7.5%) and French (2.5%). Even with these statistics, an overall mean score was computed to be 3.45. This also falls between moderate to high level of willingness. Similar to respondents' sex, when group according to nationality, result showed a similar standard deviation of 0.71, suggesting a clustered response to moderate level of willingness.
4. In terms of grade level taught, An overall mean and standard deviation of 3.45 and 0.71, respectively, indicates moderately high willingness and is consistent among respondents.
5. When grouped according to years of experience, Overall, the mean of 3.45 and standard deviation of 0.71 indicates that the willingness tends to peak at mid-career (6-15 years of teaching experience) and is generally moderate to moderately high willingness to adopt UDL across all years of experiences with limited variability.
6. When marital status and level of willingness are compared and computed, an overall mean of 3.45 and standard deviation of 0.71 was also computed. Values suggest that married respondents demonstrate slightly higher willingness than single respondents, but differences are small and practically similar. The widowed category is not reliable for inference due to very small sample size.
7. When grouped according to respondents' sex, results indicated that there is no statistically significant difference in the level of willingness to adopt UDL between male and female teachers. This also implied that sex does not significantly influence teachers' willingness to adopt UDL.
8. In terms of nationality, the results of the one-way ANOVA test examining differences in willingness to adopt UDL across nationality groups. The analysis yielded an F-value of 0.5496 with a corresponding p-value of 0.5819, which is greater than the 0.05 level of significance. This indicates that there is no statistically significant difference in willingness among teachers of different nationalities. The result suggests that nationality does not play a determining role in influencing teachers' willingness to adopt UDL.
9. The results of the ANOVA results for the difference in willingness to adopt UDL when grouped according to grade level taught showed that the computed F-value is 1.2678 with a p-value of 0.2937, which is greater than the 0.05 level of significance. Therefore, there is no statistically significant difference in willingness across the different grade levels.
10. When grouped according to marital status, the computed F-value is 1.3952 with a p-value of 0.2605, which exceeds the 0.05 significance level. This indicates that there is no statistically significant difference in willingness among respondents when grouped according to marital status.
11. The Pearson correlation analysis between age and willingness to adopt UDL revealed that the computed correlation coefficient is $r = -0.137$ with a

p-value of 0.399, which is greater than the 0.05 level of significance. This indicates that there is no statistically significant relationship between age and willingness. The negative correlation suggests a very weak inverse relationship. This implies that age does not significantly influence teachers' willingness to adopt UDL.

12. The Pearson correlation between years of teaching experience and willingness to adopt UDL. The computed correlation coefficient is $r = 0.0035$ with a p-value of 0.983, which is greater than the 0.05 level of significance. This indicates that there is no statistically significant relationship between teaching experience and willingness. The correlation is nearly zero, suggesting no linear relationship between the variables. This implies that the number of years a teacher has been in service does not significantly affect their willingness to adopt UDL practices.
13. Based on the findings, it is recommended that the school implements structured professional development programs on Universal Design for Learning, supported by coaching, collaborative learning communities, and adequate instructional resources. Since profile variables such sex, age, nationality, grade level taught, years of experience, and marital status were not found to significantly influence willingness, interventions should focus on enhancing teachers' competencies, self-efficacy, and institutional support systems to facilitate effective UDL implementation in inclusive classrooms.

Conclusions

Based on the findings of the study, the following conclusions were drawn:

1. According to the results, only a small percentage of the study's respondents were from other countries, and the majority of them were female Indonesian teachers. Kindergarten teachers made up the bulk of participation, followed by primary and junior high school teachers. The respondents' distribution of teaching experience was generally equal, while those with 1–10 and 16–20 years of experience showed a greater concentration. Additionally, the majority of respondents were married, suggesting that people with established personal and professional histories made up the majority of the sample.
2. With a constant mean score of 3.45 and a low standard deviation of 0.71, the results show that respondents exhibit a reasonably high level of desire to embrace UDL. This implies that instructors' opinions on UDL implementation are largely positive and similar. The findings suggest that readiness to adopt UDL is consistent regardless of demographic variations when categorized by sex and nationality. Both male and female respondents, as well as individuals from other nationalities, demonstrated comparable levels of willingness.

With only minor differences, the majority of responders in Kindergarten, Primary, and Junior High School show moderate to high desire in terms of grade level taught. Similar to this, willingness stays constant over the course

of years of teaching experience, but it tends to peak around mid-career teachers (6–15 years of experience)

Married respondents exhibit a marginally higher level of willingness than single respondents when categorized by marital status, but these differences are small and insufficient to suggest a strong association. The widowed category does not offer a solid foundation for meaningful analysis because of its extremely tiny sample size.

3. While there is a positive response towards the adoption of UDL in their inclusive classes among the respondents, the results of the study consistently indicate that there are no statistically significant differences or relationships between teachers' willingness to adopt Universal Design for Learning (UDL) and their profile variables. Specifically, analyses using Welch's t-test and ANOVA revealed that sex, nationality, grade level taught, and marital status do not significantly influence willingness, as all p-values exceeded the 0.05 level of significance. Although slight variations in mean scores were observed across groups, these differences were minimal and attributable to chance.
4. Similarly, Pearson correlation results showed that both age ($r = -0.137$, $p = 0.399$) and years of teaching experience ($r = 0.0035$, $p = 0.983$) have no significant relationship with willingness, indicating negligible and non-meaningful associations. Overall, these findings suggest that teachers' willingness to adopt UDL is consistent across demographic and professional characteristics, implying that other factors beyond profile variables may play a more significant role in influencing their adoption of inclusive practices.
5. According to the study's findings, teachers show a reasonably high degree of readiness to implement Universal Design for Learning (UDL), as shown by a steady mean score and minimal response variability. This suggests that teachers have a generally favorable and common attitude about incorporating UDL into their teaching methods.

Additionally, the analysis showed that instructors' readiness to adopt UDL is not significantly influenced by profile variables as sex, age, nationality, grade level taught, years of teaching experience, and marital status. The lack of statistically significant correlations and differences implies that desire is consistent across a range of instructor attributes.

Recommendations

Considering the conclusions drawn from the study, the following recommendations are highlighted below:

1. Future studies include a more balanced representation in terms of gender, nationality, and teaching levels to ensure broader generalizability of results. Increasing the number of male respondents and participants from diverse cultural backgrounds may provide more comprehensive insights.

2. Sustained professional development programs focused on practical UDL implementation rather than theoretical should also be in place. In addition, monitoring and evaluation mechanisms needs to be developed to assess UDL implementation across different schools.
3. School administrators should establish school-based UDL training programs and ensure regular capacity-building for teachers. Provide instructional support, such as access to teaching materials, flexible classroom environment, and technology integration. Encourage a culture of inclusive practice by embedding UDL in school improvement plans and teacher performance indicators.
4. Teachers must also engage in continuous professional development on UDL strategies and inclusive teaching practices. Redesign lesson plans using UDL principles, ensuring flexibility in content delivery, student engagement, and assessment methods. Utilize diverse instructional materials and technologies to address learners' varied needs. Collaborate with colleagues to share best practices and overcome challenges in UDL implementation.
5. Future researchers may conduct similar studies with larger and more balanced samples to improve statistical robustness especially demographic groups. Other variables may also be explored including teacher self-efficacy, training exposure, and instructional support.
6. Universal Design for Learning (UDL) can be institutionalized by policymakers and educational leaders through explicit standards, rules, and guidelines that support inclusive education at all levels. To guarantee uniformity in execution, this involves coordinating national or regional curriculum frameworks with UDL standards.
7. Investments in digital tools and technology infrastructure that promote inclusive learning environments should be made by educational institutions. Teachers will be able to successfully implement UDL tactics in a variety of educational settings if they have dependable access to devices, internet connectivity, and assistive technologies.
8. To promote inclusive practices, cooperation amongst stakeholders—including educators, administrators, parents, and the larger community—should be improved. Encouraging parents to comprehend UDL principles can strengthen learning assistance outside of the classroom.
9. To guarantee that future educators have inclusive teaching competencies even before they enter the field, teacher education institutes may incorporate UDL principles into pre-service training programs.
10. Teachers should be encouraged to conduct action research and classroom-based studies in order to continuously assess and improve their UDL practices. This will encourage context-specific innovations in instruction as well as reflective teaching.

REFERENCES

- Al-Azawei, A., & Al-Masoud, S. (2022). Investigating the effectiveness of Universal Design for Learning in improving accessibility and equity in higher education. *Education and Information Technologies*, 27(5), 6749–6768. <https://doi.org/10.1007/s10639-021-10839-9>
- Alhassan, A. M. (2025). Effective teaching practices and inclusion of students with special needs. *IntechOpen*. <https://www.intechopen.com/online-first/1211970> Tuttle
- Almeqdad, Q. I. (2023). The effectiveness of Universal Design for Learning: A systematic evaluation. *Open Education Journal*, 12, Article 2218191. <https://doi.org/10.1080/2331186X.2023.2218191>
- Antara News. (2023a, September 24). Number of inclusion schools reaches 44,477 in 2023: Ministry. Antara News. <https://en.antaranews.com/news/295305/number-of-inclusion-schools-reaches-44477-in-2023-ministry>
- Baek, J., Aguilar, C., & Warschauer, M. (2024). Exploring teachers' self-efficacy and willingness to provide accommodations in teaching students with autism: An intervention study. *Education and Information Technologies*, 29(2), 987–1005. <https://doi.org/10.1007/s10639-024-12756-4>
- Baş, G. (2021). Factors influencing teacher efficacy in inclusive education. *International Journal of Educational Methodology*, 7(4), 705–717. <https://doi.org/10.12973/ijem.7.4.705>
- Bedir, H. (2022). Teachers' perceptions of Universal Design for Learning in inclusive classrooms. *International Journal of Education and Practice*, 10(3), 300–312. <https://doi.org/10.18488/61.v10i3.3050>
- CAST. (2018). Universal Design for Learning guidelines version 2.2. CAST. https://udlguidelines.cast.org/more/downloads/?utm_source
- CAST. (n.d.). Universal Design for Learning guidelines version 2.2. CAST. Retrieved August 28, 2025, from <https://udlguidelines.cast.org>
- Cayea, W. (2006). Feral child: The legacy of the wild boy of Aveyron in the domains of language acquisition and deaf education (Master's project, Rochester Institute of Technology). RIT Scholar Works. <https://repository.rit.edu/theses/4159>
- Charitaki, G., Kourti, I., Gregory, J. L., Öztürk, M., Ismail, Z., & Demirel, C. (2022). Teachers' attitudes towards inclusive education: A cross-national exploration. *Frontiers in Education*, 7. <https://doi.org/10.3389/feduc.2022.1023081>
- Choudhury, S. (2021). Awareness and implementation of Universal Design for Learning among Indian teachers. *International Journal of Inclusive Education*, 25(10), 1184–1197.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Department of Education. (2009). DepEd Order No. 72, s. 2009: Inclusive education as strategy for increasing participation rate of children. <https://www.deped.gov.ph/2009/09/30/do-72-s-2009/>
- Department of Education. (2019). DepEd Order No. 21, s. 2019: Policy guidelines on the K to 12 basic education program. <https://www.deped.gov.ph/2019/08/22/do-21-s-2019/>
- Department of Education (DepEd). (2020). Department Order No. 021, s. 2020: Policy guidelines on the K to 12 basic education program. Department of Education. <https://www.deped.gov.ph/2020/09/10/do-021-s-2020>
- Department of Education (DepEd). (2022). Implementing guidelines on the conduct of inclusive education programs for learners with disabilities. Department of Education. <https://www.deped.gov.ph>
- Díaz-Vega, M. (2020). Educational inclusion through the Universal Design for Learning: Alternatives to teacher training. *Education Sciences*, 10(11), 303. <https://www.mdpi.com/2227-7102/10/11/303>
- Díaz-Vega, M. (2020). Training teachers for inclusion: The role of Universal Design for Learning in teacher preparation. *Journal of Inclusive Education Research*, 12(3), 45–61. <https://doi.org/10.1177/2396941520931479>
- Ediyanto, E. (2023). Teachers' attitudes and readiness toward inclusive education in Indonesia: A national survey. *International Journal of Educational Research Open*, 5(3), 100213. <https://doi.org/10.1016/j.ijedro.2023.100213>

- Espada-Chavarría, R., González-Sanmiguel, J., & Conde-Jiménez, J. (2023). Professional development on Universal Design for Learning: Teachers' attitudes, practices, and barriers. *Teaching and Teacher Education*, 126, 104084. <https://doi.org/10.1016/j.tate.2023.104084>
- Foykas, E. (2025). Transformative potential in special education: Predictors of teacher readiness. *Education Sciences*, 15(11), 1476. <https://doi.org/10.3390/educsci15111476>
- Gallego, C. (2023). Universal Design for Learning: Its impact on enhanced performance in higher education. *Journal of Education and Learning (EduLearn)*, 17(4), 523–532. <https://doi.org/10.11591/edulearn.v17i4.23381>
- Han, C., & Lei, J. (2024). Teachers' and students' beliefs towards Universal Design for Learning framework: A scoping review. *SAGE Open*, 14(3), 1–14. <https://doi.org/10.1177/21582440241272032>
- HEQCO (Higher Education Quality Council of Ontario). (2023). HEQCO's dialogues on Universal Design for Learning: Finding common ground and recommendations. <https://heqco.ca/wp-content/uploads/2023/04/HEQCOs-Dialogues-on-Universal-Design-for-Learning-UDL-2.pdf>
- Hills, M., Overend, A., & Hildebrandt, S. (2022). Faculty perspectives on Universal Design for Learning: Exploring bridges and barriers for broader adoption in higher education. *Canadian Journal for the Scholarship of Teaching and Learning*, 13(1). <https://files.eric.ed.gov/fulltext/EJ1329620.pdf>
- Hussain, F. (2020). UDL-aligned project-based learning in inclusive classrooms: Evidence from Pakistan. *Pakistan Journal of Education*, 37(1), 55–70.
- Jhuo, R.-A., & Chu, S.-Y. (2025). Application of Universal Design for Learning for improving child engagement in an inclusive preschool setting in Taiwan. *International Journal of Disability, Development and Education*. <https://doi.org/10.1080/1034912X.2025.2528189>
- Karlina, D. (2025). Strengthening inclusive education by examining factors affecting Universal Design for Learning (UDL) implementation. *Al-Ishlah: Jurnal Pendidikan*. <https://www.journal.staihubbulwathan.id/index.php/alishlah/article/download/6468/3099>
- Kilpatrick, S. (2021). Professional learning for inclusive education: Building teacher confidence in UDL. *Australian Journal of Teacher Education*, 46(7), 87–103. <https://doi.org/10.14221/ajte.2021v46n7.6>
- Kilpatrick, S. (2021). Teacher professional learning and Universal Design for Learning: Implications for inclusive pedagogy. *Australian Educational Researcher*, 48(4), 699–717. <https://doi.org/10.1007/s13384-021-00444-7>
- Krishan, S., & Sharma, N. (2023). Awareness of universal design for learning (UDL) among teachers in India. *Journal of Educational Technology Development and Exchange*, 16(1), 109–125. <https://aquila.usm.edu/jetde/vol16/iss1/6>
- Laine, S., et al. (2023). Teachers' mindsets and growth-oriented practices: A literature review. *Frontiers in Education*. <https://www.frontiersin.org/journals/education/articles/10.3389/feduc.2023.1275126/full>
- Marlina, R., & Fadillah, A. (2023). Universal Design for Learning in inclusive classrooms: Opportunities and challenges in Indonesia. *Jurnal Al-Ishlah*, 15(2), 233–245.
- Ministry of Education, Culture, Research, and Technology. (2023). Inclusive education policy in Indonesia [Official report]. <https://www.kemdikbud.go.id>
- Olvido, M., Dayagbil, F., Alda, R., Uytico, M., & Rodriguez, R. (2024). Are teacher education graduates ready for the demands of inclusive education? Evidence from Philippine teacher education institutions. *Asia Pacific Journal of Education*, 44(1), 55–72. <https://doi.org/10.1080/02188791.2023.2234120>
- Rusconi, E., & Squillaci, A. (2023). Universal Design for Learning: A systematic review of international evidence and challenges. *Education Sciences*, 13(7), 701. <https://www.mdpi.com/2227-7102/13/7/701>
- Savira, S. I., Wagino, W., & Normalia, N. (2024). The classroom challenges and strategies: The reflection of perceived meaning of inclusive education of teachers in inclusive schools. *Lembaran Ilmu Kependidikan*, 52(2), 189–198. <https://doi.org/10.15294/lik.v52i2.45523>
- Sekolah Regina Pacis Jakarta. (2025). Regina Pacis Jakarta. <https://reginapacis-jkt.sch.id>
- Sekolah Regina Pacis Jakarta. (2025). School profile. <https://www.reginapacis-jkt.sch.id>

- Senate of the Philippines. (2024, December 8). Gatchalian seeks stronger SPED teacher support amid shortage [Press release]. Senate of the Philippines.
https://web.senate.gov.ph/press_release/2024/1208_gatchalian1.asp
- Seo, E., Lee, S. Y., & Lee, Y. K. (2025). Growth mindset in action: Teaching practices that fuel student interest and academic success. *Journal of Youth and Adolescence*.
<https://doi.org/10.1007/s10964-025-02216-6>
- Sharma, M., & Singh, R. (2022). Teacher educators' perceptions of Universal Design for Learning in Indian higher education. *Journal of Education and Learning*, 11(2), 33–45.*
https://www.researchgate.net/publication/390844914_Teachers'_experiences_in_using_universal_design_for_learning_in_primary_mathematics_classrooms_Professed_benefits
- Singh, A., Singh, Y. P., & Agarwal, A. (2025). The educators attitudes towards Universal Design for Learning: A pilot study. *International Journal for Multidisciplinary Research*, 7(2).
<https://www.ijfmr.com/papers/2025/2/39758.pdf>
- Tuttle, D. W., & Hillier, A. (2023). Tactile communication and language development for individuals with sensory impairments. *Journal of Visual Impairment & Blindness*, 117(2), 123–136.
<https://doi.org/10.1177/0145482X231157894>
- UNESCO. (2020). Global education monitoring report 2020: Inclusion and education — All means all.
<https://unesdoc.unesco.org/ark:/48223/pf0000373721>