

Are Tomorrow's Teachers Ready? Assessing Prospective Teachers' Competency in Implementing Universal Design for Learning in the Classroom

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Abstract

This study examines prospective teachers' implementation of Universal Design for Learning (UDL) by employing a situational test. Fifty participants were selected for the study. Analysis of data from situational tests is conducted using a rubric, grounded in UDL guiding principles (multiple means of representation, engagement, and expression). Further, the data include 12 prospective teachers for focus group discussion to provide qualitative insights into their UDL practices. The finding showed that 50% of the prospective teachers demonstrated moderate level of competency, that they have basic understanding of what UDL is, 34% of prospective teachers were in the lower range of competency indicating that there are significant difficulties in applying UDL practically, namely, giving specific support to learners and making it accessible and finally 16% in high competency represented strength in implementing UDL in the classroom. Additionally, the t-test revealed that female prospective teachers had higher competency in student engagement (SM) than their male counterparts. Further, the study found a similar level of UDL competency among the prospective teachers of both the B.A. B.Ed. and B.Sc. B.Ed. programmes. Qualitative analysis revealed that the majority of prospective teachers have theoretical knowledge, but they felt challenged while implementing UDL in the diverse classroom. Time constraints, curriculum demand, inadequate resources, large classroom size, and institutional challenges limit the efforts of the prospective teachers to implement UDL in the diverse classroom. Despite these challenges, teachers expressed enthusiasm for UDL practices and emphasized hands-on practice to make UDL a sustainable, impactful approach in diverse classrooms.

Keywords: Prospective Teachers, Universal Design for Learning (UDL), Situational Test, Inclusive Education, Scoring Rubrics.

Introduction

Inclusion is a process that overcomes barriers that limit the presence, participation, and achievement of all learners. It is a matter of the system adjusting to the needs of the learner, not a matter of the learner adjusting to the system (UNICEF, 2014). Inclusive education aims to respond to all students' needs beyond school attendance and achievement while improving all students' well-being and participation (Cerna et al., 2021). Equity and inclusion in education must be encouraged in policymaking to

guarantee human rights and educational, individual, and societal goodwill (Mezzanotte, 2022). Inclusive education improves the quality of learning since it gives learners a child-centred approach, which fulfils the needs of students with diverse needs, leading to improved outcomes for all students. In addition, equitable educational policy allows students to achieve their potential, which has a positive effect on their opportunities (UNESCO, 2020). By 2030, 'Education for All' is the global concern to enjoy equal opportunities and receive quality education irrespective of diverse backgrounds or

disabilities (UNESCO-UNEVOC, 2021). The National Education Policy (NEP) 2020 draft discussed equitable and inclusive education (SDG4) that makes a vision for all learners to access, participate, and achieve a new place in a social diaspora (Bagga & Kaur, 2020). Diversity among learners should be expected, accepted, and respected to promote inclusion in school education. Every learner has his/her own learning style, and the most crucial point in the education system is its limitation within the curriculum and rigidity in teaching-learning practices, which create barriers to learning beyond the limit. Curriculum is the central means for enacting the principles of inclusion and equity within an education system (UNESCO, 2017). To make the curriculum more effective in catering to the needs of diverse learners, teachers have to extend the curriculum and adopt some innovative practices like Universal Design for Learning (UDL).

Universal Design for Learning is a flexible framework to minimize learning barriers and to prevent over-individualizing education and improve opportunities for diverse learners (Sanger & Gleason, 2020; Roski et al., 2024). UDL is universally known, and it has contributed substantially to educational practices due to its emphasis on inclusiveness in diverse situations (Gronseth & Dalton, 2019). These new 3.0 guidelines (CAST, 2024) include specific recommendations that can be applied to any discipline and that will allow learners to be involved in challenging but accessible education processes. COVID-19 exposed the insecurities that were inherent to the school system: overnight, billions of students were transformed into online learning because schools were shut down (Hodges et al., 2020). The transition further increased the impact of the need to establish multi-purpose digital learning environments, which could accommodate a number of student needs, and thus, adhere to the principles of UDL of flexibility and accessibility. The existing literature emphasizes the discrepancy between the theoretical and practical

knowledge of teachers on the UDL knowledge (Smith et al., 2019). While UDL guidelines are well-established, effective teaching modules are not available for teachers to adapt UDL principles in a diverse classroom for implementing the theoretical knowledge into a practical form. According to Al-Azawei, Serenelli, and Lundqvist (2016), the teachers are already acquainted with the main ideas of UDL, like multiple means of representation, engagement, and expression, yet they have a problem with implementing these concepts in flexible classroom activities. Likewise, Spooner et al. (2007) also highlighted the fact that teacher education tends to focus more on conceptual knowledge rather than direct training or mentorships, which in turn makes teachers lack preparedness in the implementation of UDL in different educational settings. Ghosh (2019) reported that in Indian curricula, no university or institution has incorporated UDL in the course curriculum. Furthermore, several studies reported a lack of trained teachers and supporting staff, suggesting adequate training of teachers to develop a consensus to deal with inclusive classrooms (Charema, 2010; Ji, 2019). Moreover, the requirement of instant action to address various needs of a student often overwhelms and intimidates teachers, and they are not sure how to make real-time adjustments because they do not have the skills or experience necessary to do so. According to Forlin and Sin (2010), without the continued training and support networks, the teachers may tend to fall back on the conventional concept of teaching, thereby derailing proper UDL practices.

However, there is a consensus to conduct such professional development training programmes to enhance teachers' theoretical knowledge regarding UDL guiding principles (Melhem & Al-Rashid, 2023). To prepare competent teachers for diverse classrooms, projects like NISTHA and in-service training programmes are organized by NCERT from time to time, and for pre-service teachers, NCTE made the two-credit course of Inclusive Education compulsory in pre-service

training programmes. Despite making lots of efforts to prepare competent teachers to deal with diverse classrooms, teachers are not competent in dealing effectively with diverse learners' needs using UDL. However, there is a need for a possible change in the curriculum that offers a more flexible and practical approach rather than a theoretical approach, which helps teachers to decide and modify the prescribed learning strategies best suited for the individual learner's needs (Joshi, 2020).

Conventional approaches to assessing teacher proficiency on a Likert scale, such as self-reporting surveys (Self-efficacy scale), often fail to adequately measure teachers' competency to implement UDL strategies. So, the written situation-based test finds the theory-practice gap among prospective teachers, recommending the required professional development interventions.

Theoretical Background of UDL

Universal Design for Learning (UDL), which stems from Universal Design, is the "deliberate design of instruction to meet the needs of diverse learners, providing all students with an equal opportunity to learn through flexible approaches, and distinguishing between the desired learning outcome and the means of achieving them." (International Disability Alliance, 2021). UDL focuses on minimising the barriers rather than changing the learners' needs by providing an appropriate learning environment that focuses on the learners' preferred learning style and makes the learning comfortable (CAST, 2018; Fisseler, 2023). Nevertheless, UDL favours every learner, whether impaired or not, and is applied across the curriculum in most countries (Edyburn, 2021). The UDL Guidelines provide practical tools for prospective teachers and researchers to implement UDL principles and guides to develop accessible instructional materials, methods, and assessments (Roski et al., 2024; Tulqin O'g'li et al., 2024). Further, UDL guides prospective teachers to create flexible, better learning experiences that

cater to all learners' needs and preferences (Meyer et al., 2014).

UDL has emerged as a major pedagogical paradigm in the last two decades, seeking to address the conventional 'one size fits all' curriculum by promoting student variability and flexibility in classroom engagement, promoting inclusive education (Bray et al., 2024; Meyer et al., 2014). The Centre for Applied Special Technology (CAST) first developed the framework of Universal Design for Learning (UDL) in 1998, along with a mission to transform educational design for learning with a set of three principles: multiple means of representation where the principle emphasizes providing diverse ways for students to access learning, ensuring they have the choice to suit their learning styles and preferences, multiple means of engagement where UDL emphasises the importance of engaging students through diverse strategies and activities, acknowledging their varied interests and motivators (Sánchez-Cabrero et al., 2024), and multiple means of action and expression where students have choices and flexibility to how they want to demonstrate their learning (Bray et al., 2024). Loreman et al. (2010) suggested that before planning the lesson, prospective teachers must include essential components of must know, should know, and could know in the plan to cater to every individual's needs.

The Emergence of Universal Design for Learning (UDL) as a Framework

India is one of the most diversified countries in the world, where variability among learners needs an inclusive academic environment, but, indeed, lots of prospective teachers still can't understand the needs of the diverse learners to facilitate or promote equitable and quality education for all, and that is why learners hardly cope with the prescribed set of curricula. Misquitta and Joshi (2020) reported that most often, teachers are not aware of such existing digital tools and technologies, so they do not have the skill

to use such technologies effectively in the classroom to assess the learning progress and build engagement among learners with the task. UNESCO's report (2017) on children with special needs in India identified gaps between policies implemented and practice. In Mullick's (2012) interview on universal design, he discussed two problems: India didn't have a lack of information or laws. However, there is a lack of implementation and accountability to meet the policy goals. Odunavar & Kumaraj (2018) reported that prospective teachers have limited knowledge regarding theories and practices of UDL. Worthwhile, we need a shift from the traditional to an accessible curriculum that meets the specific needs of diverse learners and creates accessible resources, materials, and assessments that will provide a more inclusive learning experience for diverse learners. In pursuance of the UDL approach in the classroom, a report from Spooner et al. (2007) states that a brief introduction to the UDL can help teacher educators prepare such lesson plans that will cater to the needs of each learner in the classroom. Furthermore, a study by Capp (2017) examined the effectiveness of using the UDL approach in the classroom through a meta-analysis of the published articles dated between 2013 and 2016, found that using the UDL approach in the classroom revealed positive signs of learning in a better way for diverse learners. However, NEP (2020) stressed multiple aspects of revamping the current schooling structure, radically reforming the existing curriculum, and extensively using digital technologies to provide accessible content and resources in a different format that creates a barrier-free environment for children with special needs. NEP (2020) also stresses the strategic use of digital technologies in the teaching and learning process to maximize learning. However, as per the Guidelines for the Development of e-Content for Children with Disabilities, e-content will continue to be developed in different regional languages

by all states, and NCERT, NIOS, CIET, and CBSE also make efforts to upload such qualitative content on the DIKSHA platform. UNICEF and Partners' Experts conducted a workshop on 'Principles for the Production of Accessible Digital Textbooks (ADTs)' in September 2017 at Gallaudet University. Initially, the aim was to develop specific guidelines for specific disabilities. Further, over time, it evolved to include the UDL approach and, based on that, a prototype of ADTs was developed in Brazil. The 'Learn My Way' reader prototype is a proof of concept that stands on the UDL principles shared by UNICEF and recommends to development of ADTs, supplementary learning material, and sign language videos under the 'standards and guidelines for the development ADTs for all' to promote inclusion (Section 10, Guidelines for the Development of e-Content for Children with Disabilities, 2021). To cherish accessibility among learners with and without disabilities, UNICEF launched initiatives to bring together writers, publishers, teachers, organizations of persons with disabilities, technologists, and Ministry of Education representatives collaboratively to develop standards and guidelines for producing textbooks in an accessible digital format. This ADT initiative's goal is to improve access to education and create support for all learners (UNICEF for Every Child, 75th anniversary global effort).

Rationale of the Study

In the contemporary classroom, where the values of diversity and inclusion have been embraced, the prospective teacher is required to move beyond one-size-fits-all teaching to use inclusive teaching practices that can accommodate individual nuances of the diverse learners. Universal Design of Learning (UDL) is a research-based framework that deals with this changing context by embracing flexibility using multiple ways of representation, engagement, and expression (CAST, 2018).

Although the theoretical basis of UDL is well-known, many prospective teachers do not recognize UDL, and, in the absence of gaps in theoretical knowledge, the implementation of the principles into a dynamic learning environment may prove a challenging task (Bedir, 2022; Phelan, 2025).

Numerous studies have already been conducted on teachers' views (Bedir, 2022), teachers' perceptions (Melhem & Rashid, 2023; Fuentes et al., 2016), teachers' knowledge (Mavrovic-Glaser, 2017), and awareness towards UDL (Dempsey et al., 2023). Moreover, other studies were conducted on UDL-based review papers (Ferreira & Castro, 2024; Phelan, 2025) and UDL-based teaching practices on students' creativity skills (Ahmad et al., 2025). However, several studies have been conducted on situational judgement tests (Weekley & Jones, 1999; Whetzel & McDaniel, 2009; Webster et al., 2020), video-based situational judgement tests (Weekley & Jones, 1997).

However, research suggests that there is always a gap between their theoretical understanding of UDL and its actual practice, mainly because of a lack of adequate practice-based training, contextualized materials, and evaluation that does not reflect the real-life teaching situations. This study attempts to solve the research problems through the development and assessment of a situational test mirroring real-life classroom situations endorsing UDL standards. This research will determine the capacity of the prospective teachers to work with UDL in the classroom, which will provide ideas to design programmed

professional development and adjust policy schemes to implement changes based on teaching UDL effectively.

Research Objectives

1. To assess the competency level of prospective teachers in applying Universal Design for Learning in the classroom.
2. To identify the challenges encountered by prospective teachers in applying UDL in the classroom and explore their reflective suggestions for improvement.

Methodology of the Study

Methods

The study used an Exploratory Sequential Mixed Methods design. In the quantitative phase, the study used situational tests to explore and understand how prospective teachers perceive and apply UDL in diverse classrooms. Further, in the qualitative phase, researchers conducted focus-group discussions to provide insights into their UDL practices.

Participants

A total of 50 prospective teachers from the B.A. B.Ed. and B.Sc. B.Ed. programmes (VIIth semester) of the Teacher Education Department, Central University of South Bihar, were selected using purposive sampling for the situational test analysis. Additionally, 12 participants were randomly selected from three pedagogy groups (Language, Social Science, and Science) for a focus-group discussion to provide qualitative insights into their UDL practices.

Table 1: Details of the participants

Programme	Total no. of participants	No. of participants	
		Male	Female
B.Sc. B.Ed.	26	12	14
B.A. B.Ed.	24	16	8

Instrument

The data collection tool was Situational Test and Focus Group Discussion (FGDs). Situational test recreates the real situation in the classroom and evaluate the ability to solve problems in an adaptive way as well as to show the gaps in training (Pisha & Coyne, 2001; Lievens & Sackett, 2017). The situational test item had various scenarios of learners with varying abilities, which were aimed at gathering insights into whether the prospective teacher can apply UDL or not. These types of methods can not only reflect the fits and starts of real-world implementation of UDL, but they also offer a clear measurement of where there are skill gaps that necessitate interventions in professional development.

To assess the competency of prospective teachers, a rubric was developed to analyse the response based on performance criteria: Differentiated Instructional Materials (DIM), Different Levels of Content (DLC), Student Engagement (SE), Integration of Assistive Technology (IAT), and Differentiated Assessment (DA) aligned with UDL guiding principles. The performance criteria were assessed on a 5-point rating scale (Excellent/5, Good/4, Average/3, Below average/2, Unacceptable/1).

Furthermore, in consistency with the situational test, the study conducted a focus group discussion (FGD) to explore prospective teachers' first-hand experiences, perspectives, and challenges, and areas for improvement while integrating UDL practices.

Intra-rater Reliability

To determine the reliability of the rubric-based assessment, two raters were used in calculating the Cohen Kappa. These resulted because of adding small differences. A score of 0.61 indicates the existence of significant agreement between the raters, which means that the use of

different evaluators using the rubric will lead to similar and reliable results.

Procedure of Data Collection

Permission for the study was obtained from the Head of the Teacher Education Department at the concerned School of Education. After securing approval, the researcher scheduled the test sessions with the consent of the participants. Data was initially collected through a face-to-face mode. Besides this, participants were invited to be part of the situational test, and they could withdraw from the study at any time, even during the test. During the test, 50% of the participants left before completing the test. So, the remaining half is being used for analysis. Before the test, the researcher provided all necessary instructions. The test had a one-hour time limit. After completion, responses were evaluated using a rubric, and the resulting data were analysed quantitatively.

In the second phase of the study, a focus group discussion was conducted. Twelve participants, six from the B.Sc. B.Ed. and six from the B.A. B.Ed. took part. For the smooth conduct of the session, the FGD was scheduled for the next day. The data obtained from the FGD were analysed using thematic analysis.

Data Analysis and Interpretation

Phase 1: Quantitative Analysis

Descriptive statistics such as mean, SD, skewness, and kurtosis were used to determine the appropriate statistical methods for further analysis and data interpretation. Table 2 presents the descriptive statistics of the UDL competency scores for the 50 prospective teachers, including the mean (2.04), SD (.603), skewness (.441), and kurtosis (.377). As indicated, the skewness and kurtosis values are not ideal values expected for a Normal Probability Curve (NPC).

Table 2: Descriptive statistics of the study

Variables	N	Min	Max	Mean	Median	SD	Skewness	Kurtosis
DIM	50	1	4	2.66	3	.798	-.551	.031
DLC	50	1	3	1.34	1	.688	1.782	1.638
SE	50	1	4	2.30	2	.814	.094	-.457
IAD	50	1	4	1.78	2	.679	.709	1.099
DA	50	1	4	2.12	2	.849	.181	-.770
TOTAL	50	1	3.8	2.04	2	.603	.441	.377

The descriptive statistics of the present study indicate a non-normal distribution, as evidenced skewness and kurtosis values are not close to the ideal value, suggesting the data were neither too flat nor too peaked. Therefore, the use of

non-parametric statistics was employed, with the Mann-Whitney U-test serving as the better alternative to the independent samples t-test. The Statistical Package for the Social Sciences (SPSS, version 20) was used to analyse the data.

Table 3: Result of Mann-Whitney U-test to assess the competency of prospective teachers to apply UDL between Genders (df=48)

Performance criteria	Gender	N	Mean Rank	Rank Sum	U	z	p value	Decision
DIM	Male	28	23.73	664.50	258.50	-1.07	p > .05	NS
	Female	22	27.75	610.50				
DLC	Male	28	23.34	653.50	247.50	-1.63	p > .05	NS
	Female	22	28.25	621.50				
SE	Male	28	21.52	602.50	196.50	-2.33	p < .05	S
	Female	22	30.57	672.50				
IAD	Male	28	22.43	628.00	222.00	-1.89	p > .05	NS
	Female	22	29.41	647.00				
DA	Male	28	22.61	633.00	227.00	-1.67	p > .05	NS
	Female	22	29.18	642.00				
TOTAL	Male	28	21.82	611.00	205.00	-2.02	p < .05	S
	Female	22	30.18	664.00				

As shown in Table 3, the Mann-Whitney U test value (z = -2.33; p < .05; df = 48) revealed a statistically significant difference in UDL competency between female and male prospective teachers in the performance criteria of student engagement (SE). In

particular, UDL competency was proved to be much higher in the case of females as compared to males. Moreover, in total scores of UDL competency proved higher among female prospective teachers as compared to male.

Table 4: Result of the Mann-Whitney U-test to assess the competency of prospective teachers to apply UDL (Programme)

Performance criteria	Programme	N	Mean Rank	Ranks sum	U	Z	p value	Decision
DIM	B.Sc. B.Ed.	26	25.69	668.00	307.00	-.10	p > .05	NS
	B.A. B.Ed.	24	25.29	607.00				
DLC	B.Sc. B.Ed.	26	25.92	674.00	301.00	-.29	p > .05	NS
	B.A. B.Ed.	24	25.04	601.00				
SE	B.Sc. B.Ed.	26	27.73	721.00	254.00	-1.20	p > .05	NS
	B.A. B.Ed.	24	23.08	554.00				
IAD	B.Sc. B.Ed.	26	26.88	699.00	276.00	-.78	p > .05	NS
	B.A. B.Ed.	24	24.00	576.00				
DA	B.Sc. B.Ed.	26	25.10	652.50	301.50	-.21	p > .05	NS
	B.A. B.Ed.	24	25.94	622.50				
TOTAL	B.Sc. B.Ed.	26	26.33	684.50	290.50	-.42	p > .05	NS
	B.A. B.Ed.	24	24.60	590.50				

As shown in Table 4, the 'U' test value ($z = -.10, -.29, -1.20, -.78, -.21, -.42$; $df=48$; $p > .05$) revealed no statistically significant differences in UDL competency scores between B.Sc. B.Ed. and B.A. B.Ed. prospective teachers across all performance

criteria. The results indicate no statistically significant difference in UDL application competency between B.Sc. B.Ed. and B.A. B.Ed. prospective teachers, suggesting a similar level of competency in applying UDL in diverse classrooms.

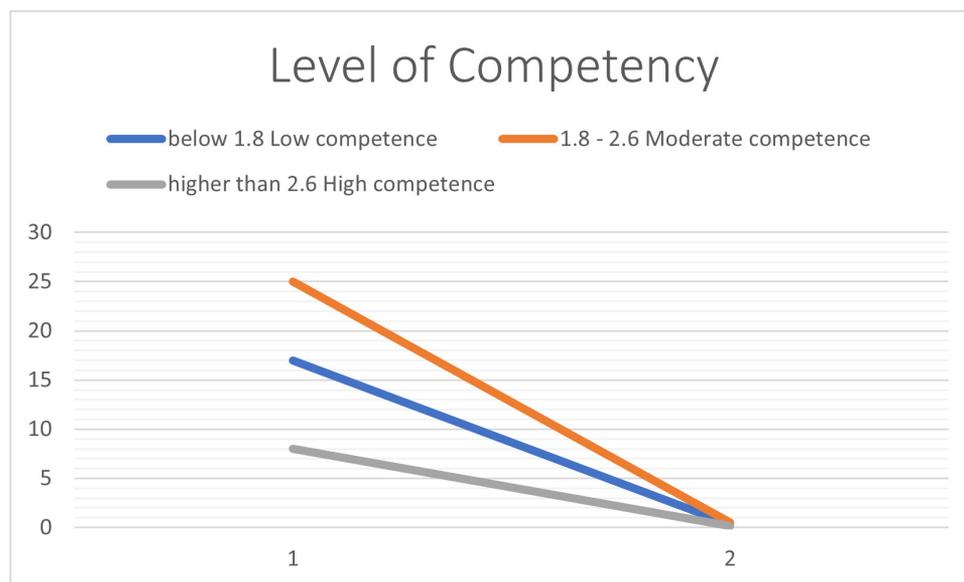


Figure 1: UDL Competency Score distribution

- **Low competence (Score < 1.8):** Seventeen prospective teachers (34%) rated lower in terms of competency, indicating a large number of difficulties in applying UDL in reality, they exhibit minimal effort to design an instructional plan, assessment plan and lack integration of assistive technology, learning resources, create barriers towards accessibility to resources and other measures of the UDL principles.
- **Moderate competence (1.8 - 2.6):** Twenty-five prospective teachers (50%) exhibited moderate competence, possessing limited theoretical knowledge of UDL principles as applied, and lacked experience to integrate ICT or multi-modalities of representations. They somehow engage students but face challenges due to a lack of experience handling diverse learners, and use limited assessment strategies, considering the diverse needs to assess the learners' academic performance.
- **High competence (Score > 2.6):** Eight prospective teachers (16%) exhibited a high level of competency, and it should be noted that there are strengths in the instructional strategies, representation of multiple learning resources, as well as a preference for flexible learning and assessment that address the diverse needs of learners. Such high-performing teachers were strong in adaptations of lesson plans and utilization of adaptive tools to address the needs of various learners.

Though effective UDL implementation can be found among some prospective teachers, the results identify the need for the overall professional development of the prospective teachers beyond mere specific training, interactive workshops, and reflective practice sessions to improve the overall teacher preparedness. Putting more emphasis on scenario-based training, which is applied, might assist in bridging the gap between theoretical knowledge and the implementation of classroom practices that are not provided at the time.

Phase 2: Qualitative Analysis

Theme 1: Awareness of UDL

Almost all the prospective teachers had varied perceptions of UDL. Some referred to it as a flexible teaching method that fits all categories of learners, whereas others witnessed it as a method of making learning easy by giving several ways of representation, engagement, and expression. One participant quoted, as an example, "UDL as giving students options, such as allowing them to write or draw answers." One of the participants further contributed by saying that it is related to planning in such a way that all students have access to the content. Some prospective teachers stated that they were not very familiar with UDL, but they implemented some of its strategies naturally without realizing it.

The answers were mixed when it came to the level of confidence in implementing UDL. One of the participants (a teacher of mathematics) answered the question in the following way: "I am confident in the content knowledge, but I do not have the strategies that help to make mathematics lessons more accessible to diverse needs students." Most of them demonstrated moderate levels of confidence as they admitted that they knew the concepts, but real classroom performance was difficult, especially when they had to prioritize time, follow the curriculum, and manage huge classes. Others confessed that they were just beginning to implement UDL and, therefore, more resources, planning, and assistance were necessary to feel comfortable. Altogether, in total, the motive of implementing UDL was strong, and it was clear that there is a need to enhance training, practical materials, and institutional provision.

Theme 2: Inclusive Practices of UDL

When presented with the question of providing an example of a UDL strategy, many participants shared positive experiences. As an example, some of them stated that

they used visual aids, flexible teamwork, and choice-based tasks to involve diverse learners. According to one participant, “I would give students a choice to write an essay or create a poster - it builds their confidence.” Nevertheless, some participants confessed that they had difficulties in implementing UDL. One of them said: “I feel like providing choices, but there is not enough time and resources.” One of the other participants explained, “I do not know how to differentiate without knowledge.”

On the effects of UDL in relation to student participation and engagement, many of the participants indicated the benefits of UDL in improving the participation of the students. As an illustration, one of the participants said, “When I offered them choices in the way they could share their work, either by using videos, making posters, or writing them in a report format, they were more interested and motivated.” Another exclaimed, “Visuals and hands-on tools made my shy students feel freer to contribute.” But there were also difficulties described: “I attempt to provide choices, but in big classes it is difficult to control.” The other participant said that he finds it challenging to accommodate multiple needs with fewer resources. Overall, even though UDL promoted engagement, its effective implementation required assistance, planning time, and a small class size.

Theme 3: Challenges in Using UDL for Diverse Learners

When discussing the main challenges in the implementation of the UDL principles, many participants mentioned such barriers as a lack of training, time, and resources. One participant said, “She wanted to implement UDL, but strict curriculum guidelines and large classes make it difficult for her.” Some of them stated that they needed additional institutional support and collaborative planning to implement UDL effectively in the classroom. Also, others pointed out the lack of administrative support or appreciation, which made their work seem lonely or unsustainable. Overall, they found it hard

to balance UDL with traditional teaching demands, especially in large classes.

The majority of the participants identified time constraints, rigid curriculum, and lack of resources as key barriers to using UDL. Some have made a short attempt to incorporate easy UDL techniques despite the busy schedules, like viewing short videos or providing choices of assignments. However, it was widely observed that highly demanding curricula and few tools make implementation difficult. One teacher said, “I want to offer different ways to engage students, but we don’t have projectors or internet,” while another added, “I don’t have enough time to personalize content for each student.”

Theme 4: Reflections and Suggestions

The participants stressed that school leaders and policymakers should support UDL implementation strongly and on a consistent basis. They suggested that regular training, access to resources, and reduced workload would help. Although workshops came in handy, participants emphasized the necessity of constant assistance, technology tools, and teaching supplies. They also highlighted the importance of collaboration time for co-planning, saying it makes UDL more manageable. Many wanted UDL to be included in school policies and assessments, and hoped leaders would model inclusive practices. Overall, teachers called for reliable, long-term support to sustain UDL in their classrooms.

Participants shared practical and encouraging guidance for new teachers adopting UDL. They suggested beginning with small steps, such as offering different ways for students to interact with content using visuals, hands-on activities, or digital tools, and emphasized the importance of first understanding each student’s strengths and needs. One participant said, “I always provide assignment choices like posters, presentations, or essays,” while another encouraged the teachers to “experiment and adjust.” Collaboration with colleagues,

ongoing professional growth, and reflecting on student feedback were also recommended. Overall, they emphasized that minor modifications under UDL could contribute to the development of much higher levels of involvement and acquisition in diverse classrooms, where flexibility and choice should be essential.

Discussion and Conclusion

This study examined the UDL competency of prospective teachers in terms of their theoretical knowledge level, practicum knowledge, real-life implementation obstacles and access to sources of support. The study revealed that the female prospective teachers have a higher level of competency in student management (SM) than their male counterparts. Furthermore, a similar level of competency was found among B.A. B.Ed. and B.Sc. B.Ed. students. Prospective teachers mean both programmes have a similar level of UDL competency. Results reveal that the prospective teachers of both programmes have a superficial understanding of UDL principles and practical knowledge. The study found a theory-practice gap within the institution. The institutional challenges remain because prospective teachers first visit the school internship programme (SIP) before the theoretical and practical exposure to inclusive education. Besides, the curriculum of inclusive education reveals that they have the provision to visit special schools for observing the behaviour of the diverse students and their needs, but the university does not take any efforts to provide exposure to inclusive curriculum-adapted schools or special schools. Therefore, this indicates the institutional flaws that affect the alignment between curriculum instructions and practical implementation.

The results of the study reflect the complex challenges faced by prospective teachers relative to the introduction of Universal Design for Learning (UDL) in real classrooms. The situational test and focus group responses indicated both systemic and skill-based

barriers. The biggest challenge identified is that prospective teachers have a basic level of awareness and content knowledge but fail to implement UDL because they lack the pedagogical knowledge and skills to teach diverse types of learners. In line with the present study, Bedir (2022) revealed the lack of conceptual knowledge about UDL among the prospective teachers. Although many teachers had heard of UDL, few teachers demonstrated deep knowledge of its core principles or knew how to transform them into everyday teaching. This shortcoming is reflected in the past studies that indicate that although UDL is philosophically acceptable at the theoretical level, at the practice level, it has been widely accepted erroneously (Rao, Ok, & Bryant, 2014). There were also problems regarding the ability to reconcile curriculum requirements with the free play of UDL, which has been found earlier in studies that tried to uncover tensions in inclusive pedagogies in the standardized educational apparatus (Edyburn, 2010).

The study revealed few prospective teachers consistently reported that they somehow practice in the domain of multiple means of expression. They further stated that they offer multiple means of expression, but it takes significant time to assess due to the large class size. However, prospective teachers' abilities were restricted to accommodate diverse learners' needs due to the large class size. Additionally, they face significant challenges while designing UDL because of the time-consuming and often impractical with the given existing workloads (Katz & Sugden, 2013). This limitation was further aggravated by the lack of availability of resources and technology, especially in under-resourced schools, which hampered the possibility of teachers applying UDL successfully (Al-Azawei et al., 2016).

The shortage in skills of the teachers and the lack of resources could be found in the realms of assessment design, technology integration, and proactive anticipating the variability of the learners. There was a preponderance of reactive planning, instead of proactive,

as teachers attempted to respond to the needs of students, resulting in the need to have a long-term process of professional learning and action in place. Contrarily, when conducting situational tests and FGD, different levels of competency counts were observed, and some teachers prospered on adapting planning, and others failed, demonstrating the necessity of scenario-based tests as suggested by Basham et al. (2020). According to Spooner et al. (2007), successful UDL training requires more than a workshop held to learn theory; it should proceed to the next level (practicum or scenario-based workshop).

Although aspiring teachers show a great desire to adopt UDL, their competency is constrained due to the three elements, i.e., pedagogical knowledge, resource factor and the institutional factor. To address such

constraints, teacher education curricula should focus more on practical experience of teacher-in-training before entering the school internship programme, in line with Meo (2008) advocating reflective iterative training that liberates teachers so that they become flexible in integrating strategies of UDL across the learning experience of different learners. Teachers are also required to instil a good inclusive practices culture, and therefore, school leadership and teacher education institutions must create the time, resources and recognition needed to achieve this. The prospective policies must be directed to empower those who are going to become teachers by providing scaffold training and offering tools and assistive technologies that can be adapted. It is only in this case that UDL can transition to generalizable and lasting classroom work.

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