Teachers' Attitude Towards the Use of Differentiated Instruction (DI) and its Impact on Teaching

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Abstract

A single-paced method of instruction does not benefit diverse learners, which is why "one size fits all" teaching has been severely criticized. Thus, it is essential to differentiate instruction to meet the diverse needs of learners. The existing literature on DI extensively examines its utilization and impact on teaching; however, it lacks a comprehensive exploration of how teachers effectively use DI to address the diverse needs of learners in our specific context. Using mixed methods, this study examined teachers' use of DI and their attitudes toward using DI in the classroom. Additionally, the study examined the impact of teachers' attitudes on the practice of DI and the challenges associated with it. Closed-ended survey questionnaires, classroom observations, self-administered open-ended questionnaires, and student feedback were used to collect data. Teachers' attitudes toward DI seem positive, and they understand it well. In the classroom, content, process, and product are typically differentiated, with the product being the least differentiated. Teachers' attitudes and DI implementation also exhibit a statistically significant positive correlation ($r_s(22) = .75$, $p \leq .001$). In addition, teachers' attitudes influence DI implementation. Moreover, DI implementation is hampered by crowding, high student-teacher ratios, time constraints, and the rule that prohibits students from using their mobile phones in school. This study raises awareness about DI in the school system in order to meet the needs of diverse learners, who may not benefit from a single-paced teaching approach.

Keywords: *Differentiated instruction, Flexible grouping, Learning preferences Respectful task*

Introduction

Bhutan is known for its richness and diversity in terms of culture (Duba et al., 2013). A diverse population results in a wide range of learning styles. Currently, general education has become a popular form of education besides monastic education and non-formal education (Ministry of Education [MoE], 2020a). Bhutanese education adopted the concept of student-centeredness in 1985 with the introduction of the New Approach to Primary Education [NAPE], leading to the development of curricula, the revision of teaching-learning methods, and the development of user-friendly infrastructures (Namgyel & Rinchhen, 2016). Over time, the Ministry of Education has taken initiatives to provide nationwide transformative pedagogy workshops for all teachers in order to promote academic equity by closing achievement gaps, promoting social skills, and developing students as individuals and team members (Wangdi, 2016). Additionally, a nationwide workshop on effective communication was conducted for teachers to enhance the effectiveness of teaching by elevating communication skills (Rinzin, 2017).

Lately, several policies and guidelines have been implemented to ensure that education is inclusive and universal. For instance, the Bhutan Professional Standards for Teachers [BPST] mandate that teachers address the diversity of learners (MoE, 2020b). Similarly, the draft national education policy emphasized, that "the curriculum and pedagogy shall take into account gender, special educational needs, socio-economic circumstances, and geographical location" (MoE, 2019, p. 10). However, Dorji et al. (2020) found that some school leaders and teachers still favor conventional lecture methods. Despite numerous reform initiatives, such as revising the curriculum and providing professional development on various pedagogies, no significant transformation in the education process has yet occurred. No conscious efforts and ignorance of the teachers' need-based pedagogical approaches have possibly led to a stagnancy in the quality of education to a certain extent. In all situations, there is no one-size-fits-all approach that works for all learners (Pokhrel,2021).

Drukpa et al. (2020) noted that Bhutan's classrooms are becoming more culturally and academically diverse as every student has their background, interests, personalities, and learning styles. Teachers, on the other hand, teach and expect them to perform in the same manner. DI stands out among many strategies for addressing today's classrooms with increasing diversity (Suprayogi et al.,2017). Additionally, DI allows all learners to achieve the same educational outcomes regardless of ability, interest, need, orientation, intellect, or learning patterns (Al-Shaboul et al.,2021).

It is apparent, however, from the study by Drukpa et al. (2020), that the diversity of learners is not well addressed. A problem appears to exist in that learners do not meet the mandated requirements set by the BPST, which mandates to address the diversity of students (MoE, 2020b). Meanwhile, after teaching in a school setting for nearly a decade, the researcher observed teachers unconsciously use many DI components to cater to the diversity of learners. However, no studies have been conducted to confirm how effectively teachers use DI. Thus, this study attempted to answer the research question "How does the attitude of teachers affect the use of differentiated instruction?" The study's objectives included assessing teachers' knowledge and use of DI in their teaching; examining teachers' attitudes towards DI and how they impact its implementation, and examining the challenges associated with implementing DI as an instructional approach to teaching.

Literature review

Differentiated Instruction (DI) is a teaching philosophy that claims that students learn better when teachers effectively address differences in students' readiness levels, interests, and learning profile preferences (Burkett, 2013; Tomlinson, 2005). Kotob and Arnouss (2019) defined DI as "a teaching approach based on the evidence that instructional approaches and strategies should vary and differ according to the different needs of the diverse learners in a classroom" (p. 62).

DI has a positive and significant impact on student learning (Dosch & Zidon, 2014; Kotob & Arnouss, 2019). A study conducted by Kado et al. (2021) to determine the effect of differentiated strategies on grade eleven mathematics concluded a statistically significant difference between the experimental group and the control group. Besides, DI helps improve reading performance, reading comprehension, and reading fluency (Firmender et al., 2013), math performance (Chamberlin & Powers, 2010), motivation, improved relationships between learners and teachers, and narrowed attainment gaps among learners (Ginja & Chen, 2020).

Flexible grouping and respectful tasks are two key principles of effective differentiation (Tomlinson, 2000; Tomlinson & Moon, 2013). Flexible grouping involves ensuring that students work regularly with a variety of peers in groups either chosen by teachers or on their own (Tomlinson, 2000). On the other hand, respectful tasks ensure that every student's work is equally engaging, appealing, and focused on fundamental knowledge and abilities (Tomlinson, 2000). Further, a teacher can differentiate components such as content, process, product (Bondie & Zusho, 2018; Santangelo & Tomlinson, 2012) learning environment (Tomlinson, 2000; Tomlinson &

Moon, 2013) according to a student's readiness, interest, and learning profile (Bondie & Zusho, 2018; Santangelo & Tomlinson, 2012; Tomlinson, 2000).

First of all, the term "content" describes what a student needs to learn or how he or she will obtain the information (Leballo et al., 2021; Tomlinson, 2000). It is possible to differentiate content according to student readiness by using text materials with varying levels of complexity, small group instruction, supplemental oral presentations with videotapes, and visual demonstrations (Tomlinson, 2005). In the same way, content can be differentiated according to students' interests by allowing them to select an area of interest, focusing on student-generated topics and questions, and providing examples relevant to the students' interests and experiences (Santangelo & Tomlinson, 2009).

Secondly, "process" refers to the activities a student engages in to understand or master the content (Leballo et al., 2021; Tomlinson, 2000). Processes can be differentiated by offering varying degrees of support, changing the pace of work, allowing students to express themselves in multiple ways, and creating activities that are in line with their preferred learning styles (Santangelo & Tomlinson, 2009). Similarly, the third component "product" reinforces, applies, and extends what students have learned (Tomlinson, 2000; Leballo et al., 2021). Differentiating products effectively requires a clear and appropriate success criterion, encouraging critical thinking, and providing multiple means of expression (Santangelo & Tomlinson, 2009). Furthermore, the fourth component, the learning environment, is the way the classroom works and feels (Leballo et al., 2021; Tomlinson, 2000), as well as its physical, social, and psychological arrangement (Tomlinson & Moon, 2013).

Apart from these, teachers need to consider student readiness, interest, and learning profile as important aspects of their instruction (Joseph et al., 2013). Readiness refers to how close a learner is to achieving specific learning goals. The use of strategies such as small-group instruction, reading materials of various readability levels, flexible work periods, and the use of technology to assist students with reading and writing can meet the readiness needs of students (Tomlinson & Moon, 2013). On the other hand, interest is defined as a skill or topic that relates to a student's talents, experiences, or dreams. The use of independent studies, interest centers, anchor activities, expert groups, and jigsaws are some strategies that allow students to relate material to their interests (Tomlinson & Moon, 2013). Using interest-based differentiation can also play a part in encouraging students to discover new interests (Santangelo & Tomlinson, 2009).

A person's learning profile, preferences, or preferred approaches to learning are

shaped by their gender, culture, environment, biology, and particular learning contexts (Tomlinson & Moon, 2013). Adapting learning strategies to students' contexts can be achieved by using different types of work groups and a range of tools and expression options for assignments, homework, and assessments. (Tomlinson & Moon, 2013).

Studies that specifically examined teachers' knowledge of DI have found varying degrees of understanding of DI (Mengistie, 2020). Mengistie's (2020) study, found that teachers had a general knowledge of DI, however, they did not know specific strategies for managing mixed-ability classes in a way that involved each group simultaneously in the lesson. Similarly, Zegeye (2019) reported that teachers are generally aware of DI, but concerns such as content differentiation, methodological differentiation, objective differentiation, and assessment differentiation are less understood.

Effective implementation of DI relies on teachers' knowledge of the concept of DI (Zegeye, 2019) and attitudes towards DI (Njagi, 2014). Zegeye (2019) mentioned that the teacher's willingness, commitment, preparation, and support are critical to the success of DI. Further, Zegeye (2019) added that developing a positive attitude towards DI is an essential element of supporting student learning and meeting their diverse needs. Similarly, Owusu-Fordjour (2021) found that a positive attitude in the classroom influences both the teacher's instruction and the student's achievement. Maintaining such an attitude will ensure an environment conducive to positive learning. Teachers who valued DI were more inclined to implement it at their schools (Letzel et al., 2020).

The attitude of teachers determines the success of DI (Njagi, 2014). The results of multiple studies indicate that teachers have positive attitudes toward DI (Melese, 2019) and are optimistic that DI will be helpful in addressing student diversity (Zegeye, 2019). Similarly, a study that assessed the knowledge, attitudes, and practices of primary school teachers towards DI revealed a positive attitude toward DI (Mengistie, 2020). In line with this, Rubie-Davies et al. (2012) claimed that a teacher's attitude can influence his or her behavior in the classroom. Furthermore, Mengistie (2020) discovered a moderately positive correlation ($r = .446$; $p = .01$) between the practice of DI and attitude, indicating the existence of a relationship between attitude and practice.

Apart from the attitude of teachers, the implementation of DI is also influenced by several factors, including a lack of resources (Mengistie, 2020; Moosa & Shareefa, 2019), overcrowded classes (Al-Shaboul et al., 2021; Ginja & Chen, 2020; Moosa & Shareefa, 2019), a lack of support at different levels (Mengistie, 2020), and a heavy workload (Al-Shaboul et al., 2021). In addition, DI is also limited by a lack of teacher

engagement, a lack of coordination, a lack of willingness among students to share their thoughts (Zegeye, 2019), and a misconception about DI (Ginja & Chen, 2020).

Methodology

The study was guided by a constructivist paradigm, prioritizing qualitative data over quantitative data, in alignment with constructivist principles. Additionally, the researcher observed participants in a natural setting to gain a genuine understanding of their experiences and real-life situations. The study was conducted at one of the higher secondary schools in Chhukha Dzongkhag, employing a convergent mixed methods approach. Teachers and students at the school were the target population. For quantitative purposes, data was gathered using a survey created in a Google Form using simple random sampling techniques. All the teachers at the school were given the survey to complete. Nevertheless, only 23 participants voluntarily responded. In addition to the four classroom observations, qualitative data were gathered from four teachers and six students using a non-probability purposive sampling technique.

Instrumentation and Data Collection Procedure

Data was collected after receiving approval from the Dzongkhag Education Office and school administration. Furthermore, participants were informed about the purpose, risks, benefits, and confidentiality limits of a particular study. Informed consent was obtained by having participants countersign the agreement form. In reports, the names of participants have been kept confidential, and the research site is kept anonymous.

Quantitative data were collected using a survey questionnaire administered through a Google Form. The survey questionnaire consisted of 35 closed-ended items, adapted with modifications from Mengistie (2020) and Whipple (2012). A pilot test was performed to ensure reliability by determining the Cronbach's alpha value. The items were found to be very reliable (Table 1).

Table 1

Reliability Statistics of Different Themes

Themes	Cronbach's Alpha
Teachers' knowledge of DI	0.83
Teachers' attitude towards DI	0.87
Teachers' practice of DI	0.92

Impact of teachers' attitude towards implementing DI	0.90
Challenges faced by teachers' in implementing DI	0.86

On the other hand, qualitative data were gathered through classroom observation, self-administered open-ended questionnaires, and student feedback gathered through group-administered closed-ended questionnaires. The observation form was modified from the Teaching Methods Handbook: Postgraduate Diploma in Education (Samtse College of Education, 2020, p. 143–144). To further understand how teachers use DI, four lessons were observed through non-participant observation. Similarly, open-ended questionnaires were physically handed to teachers and then collected. The questions covered five major themes: teachers' knowledge of DI, teachers' practices of DI, teachers' attitudes toward DI, the impact of teachers' attitudes toward implementing DI in teaching, and the challenges teachers encounter when implementing DI. Six teachers responded to these questions in writing. Student feedback was obtained by distributing a set of closed-ended questionnaires to a group of six students from class XII, and the responses were used to validate the findings. The students responded in writing in front of the researcher, who clarified any questions that were not clear.

Furthermore, a member-check of the findings was performed to make sure that the researcher adequately portrayed their meaning and way of thinking in order to ensure the reliability and credibility of the study. A codebook was maintained to prevent a change in the definition of the codes, and the codes generated were shared and discussed with the co-researcher. Additionally, an expert with extensive research experience reviewed the research tools.

Data Analysis

The Statistical Package for the Social Sciences (SPSS) version 25 was used to analyze quantitative data. The mean and standard deviation were calculated as descriptive statistics. The correlation between teachers' attitudes toward the implementation of DI was examined using inferential statistics, such as Spearman's rank correlation. When interpreting mean scores and ranges, Pimentel's (2019) proposed level of measurement for the Likert scale is followed (Table 2).

Table 2

Criteria for Interpreting Level of Likert Scale

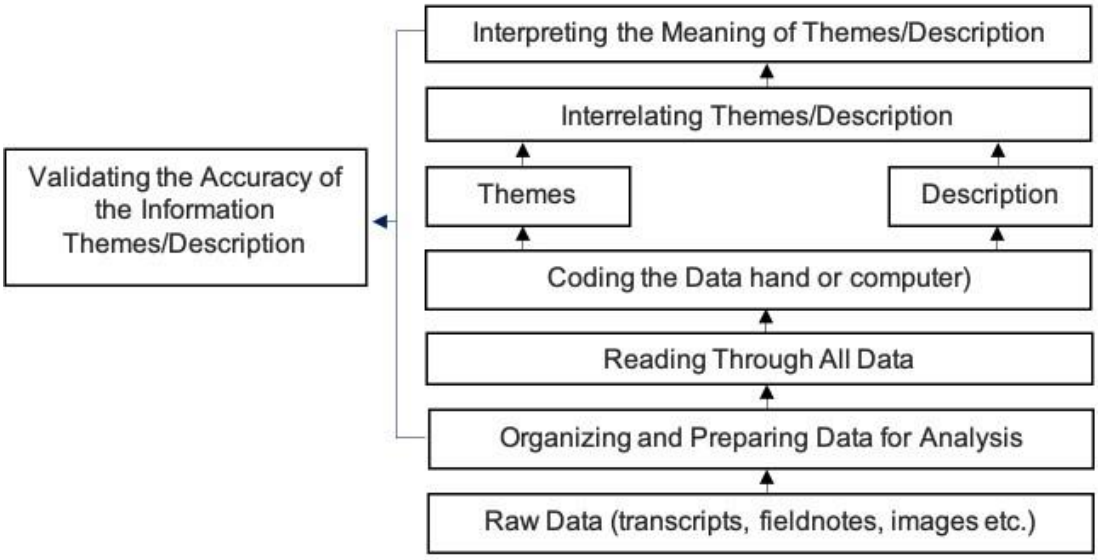
Range	Level of Interpretation
1.00 – 1.79	Very low
1.80 – 2.59	Low
2.60 – 3.39	Moderate
3.40 – 4.19	High
4.20- 5.00	Very High

Source: Adapted from Pimentel (2019, p.188).

Figure 1

Steps of Data Analysis in Qualitative Research by Creswell and Creswell (2018)

The qualitative data were thematically analyzed following the sequential steps suggested by Creswell and Creswell (2018), as shown below.



Results and Discussion

Teachers Knowledge of Differentiated Instruction (DI)

In general, teachers' knowledge of DI was rated 'very high' (M = 4.47, SD = 0.42) (Table 3). Additionally, an analysis of the qualitative data shows that all respondents

recognize the diverse needs of their learners and know how to adapt their teaching accordingly. The results indicate that teachers see every student has a unique learning style, learning preferences, and learning profile when implementing lessons for diverse learners. Furthermore, teachers cited the use of multiple instructional strategies, flexible grouping, and providing students with a variety of product alternatives as evidence of adapting teaching to different learning styles. Thus, it can be concluded that teachers have a good understanding of DI, which was also supported by Ako et al. (2019) and Mengistie (2020).

Moreover, the study findings support the claim that teachers adapt teaching to the learning styles by using multiple instructional strategies, flexible grouping, and providing students with a variety of product options (Rodriguez, 2012; Santangelo & Tomlinson, 2012; Tomlinson, 2005). Rodriguez (2012) reached a similar conclusion, saying that teachers were familiar with flexible grouping, independent investigations, different resources, and questions. Additionally, literature indicates that DI is characterized by multiple instructional strategies (Tomlinson, 2005) and a variety of modes of expression (Santangelo & Tomlinson, 2012). Consequently, this study's findings, which are in line with previous research findings, indicate that teachers have a good understanding of DI.

Table 3

Mean and Standard Deviation across Different Themes

Serial	Items	N	Mean	SD	Interpretation
1	Teachers' knowledge of DI	23	4.47	.42	Very High
2	Teachers' practice of DI	23	4.17	.30	High
3	Attitude of teachers towards DI	23	4.27	.38	Very High
4	Impact of teachers' attitude towards implementation of DI	23	4.17	.35	High

Scale: 1.00 – 1.79 (Very low); 1.80 – 2.59 (Low); 2.60 – 3.39 (Moderate); 3.40 – 4.19 (High); 4.20- 5.00 (Very high). Adapted from Pimentel (2019, p.188).

Teachers' Practice of Differentiated Instruction (DI)

Teachers' use of DI in the classroom is discussed under three sub-themes: differentiation of content, differentiation of process, and differentiation of product.

Table 4

Summary Score of Teachers' Practices of Differentiated Instruction

	N	Mean	SD	Interpretation
Teachers' practice of differentiating content	23	4.22	.38	Very High
Teachers' practice of differentiating process	23	4.22	.30	Very High
Teachers' practice of differentiating product	23	4.06	.34	High
Grand Mean	23	4.17	.30	High

Scale: 1.00 – 1.79 (Very low); 1.80 – 2.59 (Low); 2.60 – 3.39 (Moderate); 3.40 – 4.19 (High); 4.20- 5.00 (Very high). Adapted from Pimentel (2019, p.188).

Differentiation of Content: Teachers' practice of differentiating content is 'very high' (M = 4.22, SD = 0.38) (See Table 4). Qualitative findings indicated that teachers differentiate content by modifying textbook content, using a variety of instructional resources, creating respectful tasks, assessing students' readiness for lessons, and adapting lessons to accommodate slow learners. For example, when observed in the classroom, it became evident that teachers modify content using various instructional resources like video clips, PowerPoint, and printed handouts. They assess students' readiness for the lessons by posing questions and adapting lessons for slow learners by allowing extra time. However, it was noted that the lessons did not sufficiently cater to the needs of fast learners. A student, S1, expressed, "Sometimes my teacher allows us to be free if we finish our tasks before our classmates."

Teachers' Practice of differentiating process: Differentiating processes by teachers is categorized as 'very high' (M = 4.22, SD = 0.298) (Table 4). A higher composite mean score indicates that teachers differentiate the process meaningfully. Meanwhile, qualitative findings revealed that teachers offer flexible grouping options and incorporate multiple modes of delivery into one lesson, such as audio, visual, and audio-visual materials. The claim that teachers make regarding membership choices for flexible grouping conflicts with observations and student feedback. In contrast, observation and student feedback revealed that teachers do not offer a choice in membership for flexible groupings, and activities are restricted to predefined groups. The majority of student respondents said that their teachers do not allow them to choose a group for collaborative learning. For example, S3 said, "The teacher rarely lets us choose or make our own group during group activities…'. The observational findings also showed that learners' strengths, preferences, and interests were not taken into account.

In conclusion, both quantitative and qualitative findings demonstrate that

teachers do not provide students with flexible group membership options or consider their strengths, preferences, and interests. Teachers' practices are inconsistent, resulting in discrepancies in findings that are nearly impossible to detect within a short period. It is possible, however, that teachers' inconsistent practices are due to other factors, such as time constraints. For instance, Mengistie (2020) found that teachers did not differentiate their classes often due to a lack of understanding, time constraints, and inadequate resources.

Differentiation of Product: Teachers' practice of differentiating products falls in the 'high' category (M = 4.06, SD = 0.34) (Table 4). Despite its high rating, product differentiation is the least differentiated area. Qualitative findings indicated that teachers differentiate products using a variety of assessment methods, including presentations, quizzes, project assignments, tests, debates, and project-based and practical work. However, during class hours, the oral mode of assessment is more common. A constrained number of possibilities, including visual, kinesthetic, musical, textual, spatial, creative, and practical, were provided for students to demonstrate their progress. It was also clear that teachers expect their learners to exhibit their work primarily in writing or practically.

A curriculum with rigid assessment modalities accounts for limited possibilities for product choices such as oral, visual, kinesthetic, musical, written, spatial, creative, and practical. In Bhutanese classroom education, summative assessment still dominates formative assessment. Due to the high student-to-teacher ratio, large class sizes, and heavy workloads for teachers, diversifying assessment practices is almost impossible. For instance, Utha (2015) noted that Bhutan's education system places a great deal of emphasis on summative assessment and a lot of emphasis on examinations. Moreover, Mengistie (2020) agrees that teachers do not have enough time to plan their work and reflect on it due to large class sizes, work requirements, and extra responsibilities that come with being a teacher.

Overall, the results were consistent with Kyeremeh et al. (2021) and Maeng and Bell (2015), who found that products were the least differentiated area among content, process, and product. Conversely, the current findings contradict Mengistie (2020) and Siam and Al-Natour (2016) who reported that DI implementation was low and content was least differentiated. Thus, the present study results claim that differentiation of products was the least practiced among content, process, and product.

Attitude of Teachers towards Differentiating Instruction (DI)

Teachers' attitudes toward DI are rated as 'very high' (M = 4.27, SD = 0.83) (Table 4), which suggests that teachers have a positive attitude towards DI. In support of this, qualitative findings also indicate that teachers are optimistic about meeting the needs of diverse learners. Teachers believe that adapting lessons based on student's learning styles and rates is essential, which indicates their positive attitude towards DI. The current finding is consistent with other studies that found teachers had a positive attitude toward DI, such as those published in (Melese, 2019; Mengistie, 2020; Zegeye, 2019).

Relationship between teachers' attitude and teachers' practice of DI

Regarding the attitudes of teachers toward DI implementation, this study hypothesized that teachers' attitudes have a significant impact on DI implementation. A statistically significant, strong positive correlation has been found between teachers' attitudes and DI implementation in teaching (r_s (22) =.75, $p \leq .001$) (Table 5). Therefore, the current findings support the hypothesis that the implementation of DI is correlated with teachers' attitudes. In comparison to the Mengistie (2020) study, this survey's findings were significantly better, showing that teachers had better attitudes and were implementing DI. Mengistie's (2020) study discovered only a moderately positive association (r =.446; p =.01) between attitudes and practice. As a result, the study concludes that there is a statistically significant, positive association between such attitudes and DI implementation.

Table 5

Correlation Between Teachers' Attitude Towards DI and Teachers' Practice of DI

Correlation	R	Sig.
Attitude towards DI and Teachers' practice of DI	0.75	.000

Note: $p \leq 0.001$, Correlation is significant at the 0.01 level (2-tailed).

Impact of Teachers' Attitude Towards the Implementation of DI in Teaching

The impact of teachers' attitudes toward the implementation of DI in teaching falls under the 'high' category (M = 4.17, SD = 0.35), suggesting that teachers' commitment, perseverance, positive disposition, optimistic beliefs, and intrinsic motivation play an important role in DI implementation. Further, qualitative data suggested that the adoption of DI is closely tied to teachers' willingness to adapt their instruction to fit the needs of different learners. There was a strong consensus among

respondents that attitudes influenced their decisions in varying instruction based on individual readiness, learner profile, interests, cultural background, and differing intelligence levels. Teachers who are mindful of learners' diversity are likely to adapt their instruction accordingly. For instance, T3 stated, "... if a teacher is mindful of the diversity of learners in his or her class, he or she would adjust teaching accordingly to meet the needs of all types of learners."

Zegeye (2019) arrived at a similar conclusion, stating that a facilitator's willingness, commitment, preparation, and support are essential to DI's success. According to Letzel et al. (2020), teachers who valued DI were more inclined to put it into practice. The same holds true for the classroom, where a positive attitude influences both the teacher's instruction and the student's performance (Owusu-Fordjour, 2021).

Challenges faced by teachers in implementing DI

This finding shows that DI implementation is hampered by a variety of factors related to classrooms, school administration, curriculum, and policy (Table 6).

Table 6

Challenges Faced by Teachers in Implementing DI

Categories	Challenges
Classroom related challenges	Overcrowded classes and class size.
School administration challenges	Resources (mobile phone especially for boarder, ICT infrastructures)
Curriculum related challenges	Instructional time limit and design of the curriculum requirements.
Policy related challenges	High student teacher ratio and policy of not allowing students to use mobile phone.

There are several challenges including small class sizes and crowded classrooms that limit the use of DI in the classroom. The workload burden on the teacher in terms of assessments increases when there are many students in a classroom. There is evidence that assessing student learning (Shareefa, 2020), having a lot of work to do (Al-Shaboul et al., 2021; Zegeye, 2019), and having crowded classes are major obstacles to implementing DI (Al-Shaboul et al., 2021; Ginja & Chen, 2020). The absence of ICT tools and infrastructure was also mentioned as a hindrance to the adoption of DI. Similar to this, past studies have demonstrated that a lack of resources

hinders the application of DI (Mengistie, 2020; Moosa & Shareefa, 2019).

Time constraints have been identified as one of the main obstacles to implementing DI (Al-Shaboul et al., 2021; Mengistie, 2020). The current study also showed that it is difficult to meet the diverse needs of students due to the limited instructional time and curriculum requirements. Leballo et al. (2021) noted that inadequate time set aside for planning and implementing inclusive strategies into practice makes it difficult to implement them. A high student-teacher ratio and a policy that prohibits students from using mobile phones also emerged as policy-related challenges. Mobile phones are inaccessible, which makes it difficult to present lesson materials via audio, video, and audio-visual means. Mobile phones allow learners to express their tasks in a variety of ways, such as verbally, visually, kinesthetically, musically, visually, spatially, and creatively. In addition, high student-to-teacher ratios create more work for teachers in terms of modifying lessons to accommodate diversity and assessment. There have been significant barriers to DI implementation cited as high learner-to-teacher ratios (Leballo et al., 2021), poor coordination (Zegeye, 2019), and inadequate support at various levels (Mengistie, 2020). Therefore, the current study asserts that a number of these obstacles make it difficult for DI to be successfully implemented in Bhutanese schools.

Conclusion

The present study indicates that teachers have an understanding of DI and a positive attitude toward it. Teachers recognize that each student has a unique learning style, preferences, and learning profile. Also, teachers differentiate content, processes, and products in the classroom. Across all areas, the product was the least differentiated, with learners having to choose between limited options for product alternatives, such as oral, visual, kinesthetic, musical, written, spatial, creative, and practical. In spite of this, it indicates that their teachers rarely adapt content to accommodate fast learners. Additionally, teachers are less concerned with providing students with flexible group membership options and taking into account their strengths, preferences, and interests. Teachers' attitudes and DI implementation in the classroom had a statistically significant relationship ($r_s(22) = .75$, $p \leq .001$). Furthermore, teachers' attitudes also play a significant role in DI implementation, as do obstacles like crowding, high student-to-teacher ratios, time constraints, and a rule prohibiting students from using mobile phones.

Accordingly, the following recommendations are proposed to encourage the adoption of strategies that cater to student's diverse needs:

- **Ministry of Education and Skills Development (MoESD):** The study indicates that teachers are aware of DI and are positive about using DI as an instructional strategy to cater to diversity. However, overcrowded classrooms, high student-to-teacher ratios, and policies that prohibit students from using their phones pose serious barriers to meeting the needs of diverse learners. To facilitate learning and teaching, it is recommended to have a comfortable teacher-student ratio and to allow students to bring their smartphones to class.
- **Teachers:** DI practices are strongly correlated with teachers' attitudes, and teachers' attitudes toward DI directly affect its implementation. The report recommends that teachers devote themselves in a variety of ways to their profession. It is essential to use a variety of instructional strategies in a single lesson to allow students to represent their tasks in multiple ways. The adaptation of lessons must continue so that all students may benefit from an inclusive learning environment.
- Finally, the study was limited to a single high school with a relatively small sample size. Findings cannot be generalized to other schools in the same district or to those in other districts. Future studies could involve more teachers and students from different schools within the region or across districts to have more generalizability.

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