



An Investigation of Teachers' Attitudes and Beliefs towards Differentiated Instruction for Students with Disabilities

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Abstract

This study aimed to examine the attitudes and beliefs of teachers towards differentiated instruction for students with disabilities, assess the level of support required for its effective implementation, and explore factors influencing these attitudes. A descriptive research design was employed, and data were collected using an adapted version of the *Attitudes towards Differentiated Instruction Scale (ADIS)* originally developed by Letzel, Pozas, and Schneider (2020). The modified instrument consisted of 31 items. The findings revealed that teachers demonstrated moderately positive attitudes towards differentiated instruction, with overall mean scores indicating a neutral to slightly favorable stance. While respondents acknowledged the importance of addressing diverse learning needs, some misconceptions persisted, such as the belief that all students learn similarly. Teachers also reported concerns regarding time constraints and challenges in individualizing instruction. Analysis across the domains of content, process, and product showed moderate agreement, with some variability in responses, indicating differences in perceptions and experiences among teachers. Furthermore, no significant gender-based differences were found in teachers' attitudes and beliefs. The study highlights the need for targeted professional development, institutional support, and collaborative practices to enhance the effective implementation of differentiated instruction. Addressing practical challenges and promoting evidence-based strategies can strengthen teachers' capacity to meet the diverse needs of students with disabilities and improve inclusive classroom practices.

Keywords; Differentiated Instructions, Teacher Attitude, Teacher Beliefs, Students with Disabilities

Introduction

Differentiated instruction involves tailoring teaching methods, curriculum objectives, and opportunities for demonstrating knowledge gained to match the learning styles of individual students (Spencer-Waterman, 2014). According to Tucker (2011), differentiation is the process of adjusting and customizing instruction, course materials, content, student projects, and

assessments to meet the specific learning needs of each student. It provides students with various alternatives for comprehending information (Tomlinson & Imbeau, 2010). Differentiated instruction involves a teacher's observation and understanding of individual differences among students and the use of that information to plan instruction (Koeze, 2007; Landrum & Mcduffie, 2010; Onyishi, 2017; Thakur, 2014; Walton, 2017). This instructional approach provides students with multiple options, alternatives, and avenues for learning content, process, product, and learning environment. It allows teachers to accommodate different challenges and abilities in the classroom and has been shown to improve student achievement (Abdullah et al., 2014; Chamberlin & Powers, 2010; Flaherty & Hackler, 2010; Thakur, 2014; Garba, 2015; Kreitzer, 2016; Vaughn & Linan, 2003). Through differentiation, teachers offer diverse ways for students to access the curriculum, which can improve engagement, interest, and overall learning experiences (Wiselby, 2014). Ignoring students' preferred learning styles can hinder their learning, but differentiation can address this issue (Smit & Humpert, 2012; Benneth, 2003). Teachers face numerous challenges in their attempt for inclusive education, but they also come across chances for revolutionary transformation. Drawing insights from Mitiku, Alemu, and Mengsitu (2014), it highlighted how difficult it is to put inclusive teaching techniques into reality. The achievement of inclusive goals is severely constrained by issues like scarce resources, poor teacher preparation, and social stigma (Mitiku et al., 2014). The authors also stress the necessity of institutional support and extensive policy frameworks to overcome the multiple challenges that inclusive education efforts face. In the field of inclusive education, there are, however, opportunities for creativity, cooperation, and advocacy among all these challenges. According to Mitiku, Alemu, and Mengsitu (2014), inclusive education can promote academic success, equality, and cohesiveness within society, all of which can aid in the overall development of Diverse students. Using inclusive pedagogies, educators may capitalize on each student's unique talents and advantages, fostering an environment in educational communities that values acceptance, respect, and a sense of belonging. Therefore, even while the path to inclusive education may be paved with challenges, it also offers a rich environment for group effort and revolutionary change, driven by the values of social justice, diversity, and equality. Robinson's significant study highlights the complex opportunities and challenges involved in implementing differentiated instruction successfully by examining the inclusive education environment. The study explains the crucial role teachers play in forming inclusive educational practices by highlighting the complex relationships between their attitudes, beliefs, and perceptions. Despite challenges like differences in teacher readiness and institutional support, chances for creative teaching strategies and collaborative partnerships arise. Understanding the dynamic complexities of inclusive education is aided by Robinson's research, which directs teachers towards transformational methods that promote diversity, equity, and student-centered learning environments (Robinson, 2013). According to Aldossari (2018), differentiated instruction faces several challenges including those related to students, the school environment, the differentiated instruction itself, and teachers. To fully implement DI, teachers require professional development that defines what DI is, how to implement it, and how to get to know their students better. Additionally, teachers need time to observe other teachers implementing DI and support to overcome the challenges of implementing it. DI is a flexible approach that requires training, a positive attitude towards implementation, preparation time, and organizational support (Acosta-Tello & Shepherd, 2014). Lunsford (2017) emphasized the need for supporting teachers to enhance their involvement in DI, particularly in mixed-ability classrooms.

Literature Review

The teaching philosophy of differentiated instruction (DI) places the student at the center and is complex and time-consuming. Teachers' understanding of DI is influenced by their beliefs about teaching and learning. Research has shown that teachers' attitudes and thinking have a significant impact on their actions and practices (Hall, 2005). The perception and belief about DI vary across countries due to differences in student diversity. Santangelo and Tomlinson (2012) further argue that teachers' effective implementation of DI depends on their attitudes and perception. Merawi (2018) conducted a sequential mixed methods study on primary teachers in Ethiopia to understand their perceptions of differentiated instruction (DI). The study found that teachers had varied ideas about DI and that those who attended a five-day intensive training had more positive attitudes towards DI implementation. Female teachers were found to be more responsive to student needs, and some teachers expressed that low pay and low esteem in the teaching profession affected their motivation. The study concluded that professional development, support, and motivation are crucial for successful DI implementation. (Merawi, 2018)

Role of teacher in meeting diverse need of students

Teachers have an essential role in creating an inclusive classroom environment by understanding the diverse needs, abilities, and strengths of their students and using this knowledge to tailor their instruction. This involves differentiating instruction through strategies such as varying the level of difficulty, modifying assignments or assessments, and providing additional support or challenge. Teachers should also use a variety of teaching strategies and materials, incorporate technology, and communicate and collaborate effectively with students and their families. Ongoing professional development and reflective practice are necessary for effective teaching of diverse learners. By meeting the needs of all students, teachers can promote equity and create a supportive and inclusive classroom environment. Teachers have a vital role to play in creating a classroom environment that is inclusive and values diversity. This includes building positive relationships with students and families, understanding the cultural and linguistic backgrounds of their students, and fostering a safe and welcoming classroom culture (Gay, 2018). Teachers can utilize various strategies to promote inclusivity, such as incorporating diverse perspectives and experiences into their teaching, implementing culturally responsive teaching practices, and providing opportunities for students to share their own experiences and perspectives (Gay, 2018). Moreover, teachers can provide support and resources to students who require additional assistance or services. This may involve collaborating with special education teachers, counselors, and other professionals to identify and address learning challenges and provide appropriate interventions (Tomlinson, 2014). Teachers can also facilitate connections between students and families with community resources and services that can support their learning and well-being (Gay, 2018).

Effective Strategies for Implementing DI for Students with Disabilities

Implementing differentiated instruction for students with disabilities can be a difficult task, but there are proven strategies that educators can utilize to ensure that all students have access to the curriculum and are making progress towards their learning objectives. The following are some of the effective strategies for implementing differentiated instruction for students with disabilities.

Universal Design for Learning (UDL): UDL is an approach to instruction that aims to make learning accessible to all students, regardless of their learning needs or abilities. It involves

providing multiple means of representation, expression, and engagement to support diverse learners. UDL can be particularly effective for students with disabilities, as it provides flexibility and choice in how they access and engage with the curriculum. (Rose & Meyer, 2002)

Assistive Technology (AT): AT can be an effective tool for supporting students with disabilities in accessing the curriculum and engaging in learning activities. Examples of AT include text-to-speech software, alternative keyboards, and screen readers. AT can help to remove barriers to learning and enable students to participate more fully in the classroom. (Bouck & Flanagan, 2019)

Flexible Grouping: Flexible grouping involves grouping students based on their learning needs, rather than their age or grade level. This can enable teachers to provide more targeted and differentiated instruction, as students are grouped based on their strengths and areas of need. Flexible grouping can be particularly effective for students with disabilities, as it allows teachers to provide more individualized support. (Tomlinson, 2014)

Multi-tiered Systems of Support (MTSS): MTSS is a framework for providing support and intervention to students who are struggling academically or behaviorally. It involves providing different levels of support based on student need, with the goal of preventing academic and behavioral problems from escalating. MTSS can be effective for students with disabilities, as it provides a structured and comprehensive approach to supporting their learning needs. (National Center on Intensive Intervention, 2018)

Co-Teaching: Co-teaching involves two or more teachers working together to provide instruction to a group of students. This can be effective for students with disabilities, as it enables teachers to provide more individualized support and address the diverse needs of students. Co-teaching can involve a range of models, such as one teacher providing instruction while the other provides support, or both teachers providing instruction simultaneously. (Friend & Cook, 2013).

Differentiated instruction through choice boards: Choice boards provide students with a range of options for how they can engage with content. Choice boards can support the implementation of differentiated instruction by allowing students to choose activities that are tailored to their individual learning needs and preferences (Tomlinson, 2017).

Differentiated instruction through project-based learning: Project-based learning involves students working on extended, real-world projects that allow for deep exploration of content. Project-based learning can support the implementation of differentiated instruction by allowing students to work on projects that are tailored to their individual interests and strengths (Buck Institute for Education, 2015).

Graphic organizers: Graphic organizers are visual tools that can be used to organize information and support comprehension. Graphic organizers can support the implementation of differentiated instruction by providing a visual representation of content that can be tailored to meet the needs of individual students (Ellis & Friend, 2013).

Cooperative learning: Cooperative learning involves students working together in small groups to achieve a common goal. Cooperative learning can support the implementation of differentiated instruction by allowing students to work together and support each other based on their individual strengths and needs (Kagan, 1994).

Peer tutoring: Peer tutoring involves pairing students of different abilities to work together on academic tasks. Peer tutoring can be an effective strategy for implementing differentiated instruction because it allows for individualized support and can promote social and academic integration (Hughes & Agran, 2010).

Challenges in Implementing DI

Challenges in Implementing DI Though teachers recognized the importance of differentiated instruction, the challenges in implementing these strategies prevented them from using them effectively in the classroom. A study by Aldossari (2018) aimed to identify these challenges by surveying 275 teachers in Dammam city, Saudi Arabia. The survey, consisting of 51 paragraphs divided into five sections, measured the obstacles faced by teachers during the implementation of differentiated instruction. The author found that these obstacles included resistance to change, lack of understanding among students about the significance of differentiated instruction, large class sizes, inconsistent teacher training, and the unavailability of necessary equipment required for differentiation. To overcome these challenges, Aldossari (2018) recommended providing professional development programs for teachers, school leaders, and administrative staff to explore and implement practical educational solutions that are suitable for the school environment. Moosa and Shareefa (2019) conducted a survey on 130 elementary school teachers in Maldives to examine the impact of their knowledge, perception, and sense of efficacy on the implementation of DI. They found that knowledge and self-efficacy had a positive influence on DI implementation, while perception did not show a significant correlation. The authors suggested that professional development programs could improve educators' knowledge and self-efficacy, leading to successful implementation of DI.

Use of Differentiated Instructions in Pakistan

According to Manzoor, Nawaz, & Munir (2022), Pakistan's education system includes regular schools, special schools for children with disabilities, and non-formal literacy schools for marginalized groups, but more than 22 million children are out of school. Inclusive education, including differentiated instruction, has gained popularity as a strategy to address this challenge. However, many teachers in Pakistan use flexible teaching methods that fall under the umbrella of differentiated instruction unknowingly, particularly at the primary level. While teachers view differentiated instruction as having a positive impact on student learning, many are not aware of the term and lack pre-service or in-service training to use it effectively in their classroom. The authors suggest that assessing pre-service teachers' perceptions and understanding may help teacher educators design and revise the curriculum and content on pedagogies and instructions. The National Education Policy (2017) emphasizes that regular schools are responsible for providing inclusive education and making learning accessible to all learners.

Research Objectives:

The research objectives of this study are as follows:

1. To understand the attitudes and beliefs of teachers towards differentiated instruction of students with disabilities.
2. To assess the level of support that teachers need to implement differentiated instruction effectively for students with disabilities.
3. To explore the factors that influence teacher's attitude and beliefs towards differentiated instructions for students with disabilities.

Research Questions:

1. What are the attitudes and beliefs of teachers towards differentiated instruction for students with disabilities?

2. What level of support do teachers need to effectively implement differentiated instruction for students with disabilities?
3. What factors influence teachers' attitudes and beliefs towards differentiated instruction for students with disabilities?

Method & Procedure

This was a descriptive study with a focus on examining the attitudes and beliefs of teachers towards differentiated instruction for students with disabilities. For this purpose, "The 'Attitudes towards Differentiated Instruction Scale' (ADIS) developed by Letzel, Pozas, and Schneider (2020) was adapted for use in this study. The original scale consisted of 20 items designed to assess teachers' attitudes towards differentiated instruction. The scale was modified by adding eleven items and revising the wording of some items to better reflect the study's context. The adapted scale consisted of 31 items rated on a 5-point Likert scale, ranging from 1 (strongly agree) to 5 (strongly disagree). The original authors' permission was obtained before making these modifications." It consists of two parts; part 1 is about demographics, and part 2 is the scale of 31 items in total.

Validity of Instrument

The research instrument was presented to five specialists who worked in the special education departments of different institutions. They were asked to give their feedback on the instrument, and based on their comments, it was concluded that the questions in the instrument were relevant to measuring "attitude and beliefs of teachers towards differentiated instructions for students with disabilities in special schools of Punjab. The supervisor and experts' recommendations were then incorporated into the instrument to improve its validity.

Pilot Testing

Following the validation of the research instrument, a pilot study was conducted to assess its reliability. A group of 30 teachers who worked in special schools of Lahore and Kasur, located in the Punjab region, were selected to participate in the pilot project. The instrument was administered to them, and the data collected was analyzed to evaluate the reliability of the research instrument. The reliability of the scale was measured by using Cronbach's alpha which turned out to be .892, which was better than 0.70 and considered good

Population and sample of study

All teachers working in the Department of Special education, Punjab comprised the population of this research. In this study, the researcher employed a convenient sampling method to choose the participants. This method involves selecting individuals who are readily available and accessible to the researcher. The sample consisted of 200 teachers who are teaching students with disabilities in Punjab. To collect data for the study, the researcher visited school and center and administered questionnaires to the participants. For distant colleagues the researcher administered questionnaire through an online Google survey distributed through email, and Whatsapp using a convenience sampling method.

Data collection

To collect data for the study, the researcher personally visited each school and center and administered questionnaires to the participants. For distant colleagues the researcher

administered questionnaire through an online Google survey distributed through email, and Whatsapp using a convenience sampling method.

Data Analysis and interpretation:

The data was presented in tabulation form on SPSS, analyzed and interpreted.

Variable	Category	Frequency (f)	Percentage (%)
Gender	Female	125	62.5
	Male	75	37.5
Qualification	M.A	89	44.5
	M.Ed.	34	17.0
	M.Phil.	70	35.0
	Ph.D. Scholar	7	3.5
Teaching Experience	0–5 years	62	31.0
	6–10 years	78	39.0
	11–15 years	45	22.5
	16–20 years	15	7.5
Age	25–30 years	75	37.5
	31–35 years	85	42.5
	36–40 years	30	15.0
	41–45 years	8	4.0
	46–50 years	2	1.0
Designation	JSET	102	51.0
	SSET	98	49.0
Disability Taught	HIC	87	43.5
	VIC	33	16.5
	PD	36	18.0

Variable	Category	Frequency (f)	Percentage (%)
	IDD	44	22.0

The table summarizes the demographic characteristics of the respondents (N = 200). Most teachers were female (62.5%) and held an M.A. degree (44.5%), followed by M.Phil. (35.0%). The majority had 6–10 years of teaching experience (39.0%) and were aged 31–35 years (42.5%). Nearly equal proportions were JSET (51.0%) and SSET (49.0%). In terms of disabilities taught, the largest group of teachers (43.5%) were teaching Hearing Impaired Children, followed by Intellectual and Developmental Disabilities (22.0%), Physical Disabilities (18.0%), and Visually Impaired Children (16.5%). Overall, the sample was predominantly female with moderate experience, mainly teaching students with hearing impairments.

Descriptive statistics

Factors	Mean	Std. Deviation
Content	3.39	1.03
Product	2.92	1.26
Process	2.91	1.27

Content: On average, participants in the survey expressed relatively high agreement (mean > 3) with statements such as "All students learn in a similar way" and "All students can be taught in the same way to get the same outcome." However, there was slightly lower agreement (mean < 4) with statements suggesting that differentiated instruction is less important in a teacher education program or incompatible with students' achievement in a specific school track. Participants also expressed concerns about time constraints for differentiated teaching and had mixed views on individualizing instruction. Overall, the findings suggest a need to consider the importance of differentiated instruction and address potential challenges in implementing it effectively.

Product: The average mean 2.9178 indicates that the participants in the survey have a relatively neutral stance when it comes to their confidence in preparing differentiated lessons and their awareness of the effectiveness of differentiated instruction. They also express a moderate level of agreement that it is important to reach every student and that their teaching practices align with student needs. The average standard deviation of 1.26 suggests that there is some variability in the perceptions and experiences of the respondents regarding differentiated instruction. While some teachers feel confident and motivated to prepare differentiated lessons, there seems to be a range of opinions regarding the effectiveness of differentiated instruction, the need to reach every student, and the alignment of teaching practices with student needs.

Process: The average mean values for the statements related to differentiated instruction in teaching range from 2.6500 to 3.6200, with an overall average mean of 2.9104. These values suggest that, on average, the respondents' opinions and experiences regarding differentiated

instruction fall within a moderately positive range. While some statements indicate a favorable perception and belief in the benefits of differentiated instruction, others highlight potential challenges or limitations, such as time constraints and feeling overwhelmed. The average standard deviation is 1.272, indicating that the responses to the statements related to differentiated instruction vary by an average of approximately 1.272 units from the mean rating. This suggests that there is some degree of variability or disagreement among the respondents in their opinions and perceptions of differentiated instruction.

Independent sample t-test

Dimension	Gender	N	Mean	t	p
Content	Female	125	3.26	-0.938	0.349
	Male	75	3.34		
Product	Female	125	2.83	-1.152	0.131
	Male	75	3.06		
Process	Female	125	2.86	-1.240	0.215
	Male	75	3.05		

The independent samples t-test results show that there are **no statistically significant differences** between female and male teachers in their attitudes towards differentiated instruction across all three dimensions: content ($t = -0.938$, $p = 0.349$), product ($t = -1.152$, $p = 0.131$), and process ($t = -1.240$, $p = 0.215$). Although slight variations in mean scores were observed, these differences were not statistically meaningful. Overall, the findings indicate that male and female teachers share similar attitudes and perceptions regarding differentiated instruction for students with disabilities.

Results

- Teachers demonstrated a moderately positive overall attitude towards differentiated instruction across the three dimensions: content ($M = 3.39$, $SD = 1.03$), product ($M = 2.92$, $SD = 1.26$), and process ($M = 2.91$, $SD = 1.27$).
- In the content dimension, teachers showed relatively higher agreement with traditional beliefs (e.g., students learn in similar ways), indicating the presence of some conventional instructional perceptions.
- Teachers expressed a neutral to moderately positive stance regarding the product dimension, reflecting mixed confidence in preparing differentiated lessons and varying awareness of its effectiveness.
- The process dimension revealed a moderately positive perception, although responses indicated concerns such as time constraints and challenges in implementing individualized instruction.
- Considerable variability in responses ($SD \approx 1.03$ – 1.27) suggests differences in teachers' experiences and perceptions of differentiated instruction.
- The independent samples t-test revealed no statistically significant differences between male and female teachers across all dimensions: Content ($t = -0.938$, $p = 0.349$), Product ($t = -$

1.152, $p = 0.131$), Process ($t = -1.240$, $p = 0.215$) Although minor differences in mean scores were observed between genders, these differences were not statistically meaningful. Overall, both male and female teachers demonstrated similar attitudes and perceptions towards differentiated instruction for students with disabilities.

- The findings suggest a need for professional development and institutional support to strengthen effective implementation of differentiated instruction in classrooms.

Conclusion:

The study examined the attitude and beliefs of teachers towards differentiated instruction for students with disabilities. The results of the study indicate that, on average, participants expressed moderately positive attitudes and perceptions towards differentiated instruction. While there were some concerns and mixed views on specific aspects, such as time constraints and individualizing instruction, overall, the importance of differentiated instruction was acknowledged. Additionally, there were no significant differences between the attitudes and perceptions of male and female teachers regarding the content, product, and process of differentiated instruction. These results suggest that both male and female teachers have similar attitudes and perceptions regarding the implementation of differentiated instruction.

The study suggests that Offer workshops and training programs that focus on the benefits and strategies of differentiated instruction. This can help both female and male teachers enhance their understanding and implementation of differentiated teaching methods. Despite mixed views on individualizing instruction, it is crucial to emphasize the significance of tailoring teaching approaches to meet students' diverse needs. Share success stories and evidence of improved student outcomes resulting from differentiated instruction to encourage its adoption. Regularly assess the effectiveness of differentiated instruction within the school or district and seek feedback from teachers to identify areas for improvement. Use this feedback to refine professional development offerings and support structures, ensuring they address the specific needs and challenges faced by teachers.

Recommendations

- **Increase awareness and understanding:** Offer opportunities for professional development that focus on enhancing comprehension and understanding of differentiated instruction. Provide training courses, seminars, or workshops on the advantages, tactics, and evidence-based practices of differentiated instruction.
- **Address concerns about time constraints:** Acknowledge the concerns expressed by participants regarding time constraints for implementing differentiated teaching. Emphasize the long-term benefits of investing time in planning and implementing differentiated lessons.
- **Foster collaboration and sharing of best practices:** Encourage teachers to collaborate and share their experiences, strategies, and success stories related to differentiated instruction. This collaborative environment can enhance teachers' confidence and competence in implementing differentiated instruction.
- **Provide ongoing support and mentorship:** Offer continuous support to teachers through coaching, mentoring, or peer observation programs. Experienced teachers can serve as mentors to guide their colleagues in implementing differentiated instruction effectively.
- **Promote research and evidence-based practices:** Encourage teachers to stay informed about current research and evidence-based practices related to differentiated instruction.

Provide access to scholarly articles, books, and online resources that highlight the benefits and effectiveness of differentiated instruction.

- **Advocate for institutional support:** Work with administrators and policymakers to ensure that resources, such as instructional materials and technology, are available to support differentiated instruction.

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