

EFFECTIVENESS OF DIFFERENTIATED INSTRUCTION IN ENHANCING LEARNING OUTCOMES IN INCLUSIVE CLASSROOMS

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ABSTRACT

The present study examined the effectiveness of differentiated instruction in enhancing learning outcomes in inclusive secondary classrooms. The study was conducted in selected government, aided, and private secondary schools of Pune, Maharashtra. A quantitative approach with a descriptive survey research design was adopted, and 120 secondary school teachers were selected through stratified random sampling. Data were collected using a self-developed 30-item Likert-scale questionnaire measuring differentiated instructional practices, student engagement, academic performance, classroom participation, assessment flexibility, and teacher preparedness. The questionnaire was validated through expert review and demonstrated high internal consistency. The collected data were analysed using descriptive statistics, an independent-samples *t*-test, and Pearson's Product-Moment Correlation. The findings indicated that differentiated instructional practices were positively associated with student engagement, classroom participation, and learning outcomes. Professionally trained teachers demonstrated stronger implementation of differentiated instructional practices than untrained teachers. The study concludes that differentiated instruction can support more responsive and equitable inclusive classrooms when accompanied by teacher preparation, flexible assessment, adequate resources, and institutional support. Practically, the findings suggest that schools should strengthen professional development, flexible lesson planning, collaborative learning, and varied assessment practices to address learner diversity more effectively.

Keywords: *Differentiated instruction, inclusive education, student engagement, learning outcomes, teacher effectiveness.*

INTRODUCTION

Education is increasingly understood as a means of ensuring equity, participation, personal development, and meaningful learning opportunities for learners with diverse abilities and backgrounds. Contemporary classrooms contain considerable variation in students' prior knowledge, readiness, interests, language, cultural experiences, learning pace, and educational needs. Inclusive education therefore requires more than placing diverse learners within the same classroom; it requires instructional practices that enable different learners to participate meaningfully and progress toward common educational goals. This has encouraged a gradual movement from uniform teacher-centred instruction toward flexible and learner-responsive

pedagogies. Inclusive classrooms may include students with disabilities, students requiring additional academic support, high-achieving learners, students from different linguistic and socio-economic backgrounds, and learners with varied interests and learning preferences. Such diversity can enrich classroom interaction but can also create substantial challenges when the same instructional content, pace, activity, and assessment method are applied uniformly to all learners. Differentiated instruction provides one response to this challenge by enabling teachers to modify content, process, learning products, grouping arrangements, resources, and assessment according to students' readiness, interests, and learning needs.

Differentiated instruction is therefore not simply a collection of teaching techniques but a responsive instructional orientation in which teachers use information about learners to make purposeful pedagogical decisions. Flexible grouping, tiered activities, scaffolding, choice-based learning, varied learning materials, peer collaboration, formative assessment, project-based learning, and technology-supported instruction can all be incorporated within a differentiated classroom. Recent research continues to investigate how such practices operate within diverse classrooms and how teacher beliefs, classroom composition, professional preparation, and instructional conditions influence implementation. A 2023 systematic review and meta-analysis drawing on 49 primary studies by Asriadi et al. found evidence supporting the relationship between differentiated instruction and learning outcomes, while also identifying moderator factors that influence its effectiveness. Recent research has also emphasized that differentiated instruction should be considered alongside broader inclusive pedagogical frameworks. Cai et al. (2024), for example, examined the relationship between Universal Design for Learning and differentiated instruction and highlighted the importance of teacher practices and learner-oriented factors in implementing responsive instruction. Similarly, research on pre-service teacher education has shown that learning to differentiate instruction involves both significant pedagogical opportunities and practical challenges, particularly when teachers attempt to respond to substantial learner diversity.

More recent empirical research further indicates that differentiated instruction is influenced by classroom conditions rather than operating independently of them. Dulfer et al. (2025) examined how class-composition factors affect differentiated instructional processes and demonstrated the importance of contextual characteristics in shaping teachers' ability to differentiate instruction. Likewise, Kara and Tekindur (2025) found that differentiated instruction positively influenced academic achievement among primary learners and highlighted students' generally positive experiences with differentiated learning. These studies suggest that the effectiveness of differentiation depends not only on the adoption of individual strategies but also on teacher preparation, classroom conditions, curriculum flexibility, and institutional support. In India, inclusive education has been strengthened through policy and legislative initiatives including the Right of Children to Free and Compulsory Education Act, 2009, the Rights of Persons with Disabilities Act, 2016, and the National Education Policy, 2020. These frameworks emphasize equity, inclusion, competency development, learner-centred pedagogy, experiential learning, and flexible assessment. Nevertheless, teachers continue to encounter challenges such as large classes, limited instructional resources, insufficient professional preparation, curriculum rigidity, and inadequate opportunities for sustained professional development.

Against this background, the present study investigates differentiated instructional practices in inclusive secondary classrooms in Pune. The study is significant because it moves beyond a purely theoretical discussion of differentiation and examines its relationship with

student learning outcomes as well as differences associated with teacher training. The findings are expected to provide practical guidance for teachers, teacher educators, school administrators, and policymakers seeking to strengthen inclusive classroom practices through flexible, learner-responsive instruction.

REVIEW OF RELATED LITERATURE

Conceptual Foundations of Differentiated Instruction

The conceptual foundation of differentiated instruction is strongly associated with Tomlinson's (2001) work, which conceptualizes differentiation as proactive adjustment of content, process, product, and learning environment in response to learner readiness, interests, and learning profiles. Tomlinson and McTighe (2006) further emphasized that differentiation should maintain common learning goals while providing different pathways for students to reach those goals. This perspective is important for inclusive education because it distinguishes differentiation from lowering academic expectations. Instead, differentiation seeks to provide appropriate support and challenge while maintaining meaningful educational standards. Earlier scholarship by Hall (2006), Subban (2006), Heacox (2012), and Gregory and Chapman (2013) similarly emphasized flexible instructional planning, formative assessment, flexible grouping, scaffolding, and varied learning activities. Collectively, these perspectives established the theoretical basis for treating learner diversity as an instructional consideration rather than a problem requiring separation of students.

Differentiated Instruction and Learning Outcomes

Research examining learning outcomes generally indicates a positive association between differentiated instruction and academic achievement, engagement, and classroom participation. The 2023 systematic review and meta-analysis by Asriadi et al. synthesized 49 primary studies and found evidence that differentiated instruction can influence student learning outcomes, while also demonstrating that contextual and methodological factors moderate its effects. Safawi and Akay's (2022) meta-analysis similarly reported positive effects of differentiated instruction on academic achievement and student attitudes. Recent empirical work has extended this evidence to specific classroom contexts. Kara and Tekindur (2025), examining third-grade science learning, reported positive effects of differentiated instruction on academic achievement and explored students' perceptions of the differentiated learning process. Other recent evidence suggests that differentiated instructional strategies may contribute positively to achievement when implemented as part of a broader, coherent instructional approach rather than as isolated techniques. Thus, the literature indicates a generally positive relationship between differentiation and learning outcomes, but it also suggests that effectiveness depends upon how differentiation is implemented and the conditions under which teachers work.

Differentiated Instruction and Inclusive Education

Differentiated instruction has particular relevance to inclusive education because both approaches recognize learner diversity and seek to increase meaningful participation. Inclusive education requires classrooms in which students are not merely physically present but are able

to engage with curriculum, classroom activities, assessment, and social interaction. Differentiated instruction can contribute to this objective by providing multiple ways of accessing content, participating in learning activities, demonstrating understanding, and receiving feedback. Recent systematic literature has emphasized the relationship between differentiated instruction and other inclusive pedagogical approaches, including Universal Design for Learning, collaborative teaching, and supportive technologies. Cai et al. (2024) specifically demonstrated the conceptual and practical relationship between UDL and differentiated instruction, emphasizing teacher practices, flexible grouping, and ongoing assessment as important components of inclusive implementation. Angreni et al.'s (2026) systematic review further emphasized that differentiated instruction is increasingly being examined through the lens of educational equity and diverse learner needs, while also identifying differences in how differentiation is operationalized across educational contexts.

Teacher Preparation and Implementation Challenges

Although the literature generally supports differentiated instruction, implementation is not without difficulty. Teachers must diagnose learner needs, plan varied activities, prepare appropriate resources, manage flexible groups, monitor individual progress, and conduct formative assessment. These responsibilities require pedagogical knowledge, planning time, professional confidence, and institutional support. Recent research on pre-service teachers has shown that learning to implement differentiated instruction involves both opportunities and challenges, particularly in understanding learner diversity and translating theoretical principles into classroom practice. Similarly, Dulfer et al. (2025) demonstrated that classroom composition can influence teachers' instructional processes, highlighting the importance of class size and learner characteristics when evaluating differentiation. These findings are important for the present study because teacher preparedness is examined as one of the dimensions of differentiated instructional practice. The literature suggests that successful differentiation cannot be achieved solely through teachers' individual efforts; it requires appropriate professional development, manageable classroom conditions, instructional resources, curriculum flexibility, and administrative support.

Indian Educational Context

The Indian educational context provides a particularly important setting for examining differentiated instruction because national educational reforms increasingly emphasize learner-centred, competency-based, experiential, and inclusive education. The National Education Policy 2020 recognizes learner diversity and emphasizes flexible pedagogical approaches, competency development, formative assessment, and equitable educational opportunities. However, implementation of inclusive and differentiated practices remains influenced by contextual constraints, including teacher workload, class size, availability of teaching-learning materials, technological access, and professional development opportunities. Consequently, evidence generated from specific Indian school contexts is valuable for understanding how differentiated instruction operates under actual classroom conditions.

Synthesis of Literature and Research Gap

The reviewed literature demonstrates broad agreement that differentiated instruction can enhance learning opportunities by responding to differences in learner readiness, interests, and educational needs. International evidence, including recent meta-analytic and empirical research, generally supports positive relationships between differentiated instruction and academic achievement, engagement, and participation. At the same time, recent studies indicate that the effectiveness of differentiation varies according to teacher preparation, classroom composition, instructional context, and the manner in which differentiation is implemented. Despite this growing evidence base, comparatively limited empirical research has examined differentiated instruction within inclusive secondary classrooms in Indian urban contexts using quantitative evidence. Much of the available literature emphasizes theoretical principles, teacher perceptions, or broader inclusive education frameworks. There is therefore a need for empirical investigation that simultaneously examines differentiated instructional practices, student-related learning outcomes, and teacher preparation. The present study addresses this gap by examining secondary school teachers in inclusive classrooms in Pune and by comparing trained and untrained teachers while also examining the relationship between differentiated instruction and student learning outcomes.

Objectives of the Study

The primary objectives of this study are outlined below.

1. To examine the extent to which secondary school teachers implement differentiated instructional practices in inclusive classrooms.
2. To examine the relationship between differentiated instructional practices and students' learning outcomes.
3. To compare differentiated instructional practices of trained and untrained secondary school teachers.
4. To examine the major classroom and institutional factors influencing the implementation of differentiated instruction.
5. To suggest practical strategies for strengthening differentiated instruction in inclusive secondary classrooms.

Research Hypotheses

The following null hypotheses were formulated to investigate the relationships and differences between the variables:

H₀₁: There is no significant relationship between differentiated instructional practices and student learning outcomes.

H₀₂: There is no significant difference between trained and untrained teachers in the implementation of differentiated instructional strategies.

RESEARCH METHODOLOGY

The present study employed a quantitative research approach with a descriptive survey design to examine differentiated instructional practices in inclusive secondary classrooms. The study was conducted in selected government, aided, and private secondary schools in Pune, Maharashtra. The target population consisted of secondary school teachers working in schools implementing inclusive educational practices. A sample of 120 teachers was selected through stratified random sampling to ensure representation of different school categories. The sample comprised teachers from government, private, and aided schools. Teachers were included when they were currently teaching at the secondary level in the selected schools and had experience working in classrooms containing learners with diverse educational needs. Teachers who were not directly engaged in classroom teaching during the period of data collection were excluded. The principal research instrument was a self-developed structured questionnaire consisting of 30 Likert-scale statements. The questionnaire covered six major dimensions: differentiated instructional practices, student engagement, academic performance, classroom participation, assessment flexibility, and teacher preparedness. Responses were recorded on a five-point continuum ranging from Strongly Agree to Strongly Disagree. The items addressed practices such as flexible grouping, adaptation of instructional content, varied learning activities, scaffolding, learner choice, formative assessment, differentiated resources, collaborative learning, and responsiveness to individual learner needs.

Content validity of the questionnaire was established through expert review by specialists in education, educational psychology, and inclusive education. Necessary modifications were made following expert suggestions. A pilot administration was undertaken before the final data collection, and the reliability of the instrument was assessed using Cronbach's Alpha. The obtained reliability coefficient of 0.89 indicated high internal consistency. Data were collected after obtaining permission from the concerned school authorities. Participation was voluntary, and respondents were informed about the academic purpose of the study. Confidentiality and anonymity were maintained throughout the investigation. The collected data were analysed using mean and standard deviation for descriptive interpretation. An independent-samples *t*-test was employed to compare trained and untrained teachers, while Pearson's Product-Moment Correlation was used to examine the relationship between differentiated instructional practices and student learning outcomes. The level of significance was fixed at 0.05.

Data Analysis and Interpretation

Table 1 indicates that differentiated instructional practices were implemented at a generally high level in the selected inclusive classrooms. Student engagement and classroom participation were also positively perceived, suggesting that flexible instructional approaches can encourage learners to participate actively in classroom activities. Academic performance and assessment flexibility were comparatively moderate, indicating that although teachers were adapting instruction, systematic use of diversified assessment and learning-outcome-oriented practices could be strengthened. Teacher preparedness received the comparatively lowest assessment, suggesting that teachers require continued professional development, practical training, instructional resources, and institutional support to implement differentiation more consistently. Overall, the pattern indicates that differentiated instruction is being adopted in the

selected schools, although the quality and consistency of implementation may vary across instructional dimensions.

Table 1: Descriptive Statistics of Differentiated Instruction and Learning Outcomes (N = 120)

Variables	Mean (M)	Standard Deviation (SD)	Interpretation
Differentiated Instruction Practices	4.12	0.46	High
Student Engagement	4.08	0.49	High
Academic Performance	3.96	0.52	Moderately High
Classroom Participation	4.10	0.44	High
Assessment Flexibility	3.92	0.51	Moderately High
Teacher Preparedness	3.88	0.57	Moderately High

Table 2 shows that trained teachers demonstrated stronger implementation of differentiated instructional practices than untrained teachers. The independent-samples *t*-test indicated that the difference between the two groups was statistically significant because the obtained probability value was below the predetermined level of significance. The finding suggests that professional preparation in inclusive education is associated with greater teacher competence in adapting instructional content, using flexible grouping, modifying classroom activities, employing varied assessment practices, and responding to differences in learner readiness and educational needs.

Table 2: Independent-Samples *t*-Test Comparing Trained and Untrained Teachers in Differentiated Instruction Practices (Level of Significance: 0.05)

	Teacher Category	N	Mean	SD	<i>t</i> -value (df)	<i>p</i> -value	Decision
Level of professional preparation	Trained Teachers	65	4.28	0.39	3.84 (118)	0.001	Significant
	Untrained Teachers	55	3.93	0.48			

Table 3 demonstrates a strong positive relationship between differentiated instructional practices and student learning outcomes. The relationship is statistically significant, indicating that higher levels of differentiated instructional practice are associated with better perceived learning outcomes. The finding suggests that when teachers adapt content, processes, activities, resources, grouping arrangements, and assessment according to learner needs, students are more likely to demonstrate stronger engagement, participation, conceptual understanding, and academic performance. However, because the analysis is correlational, the result should be interpreted as an association rather than definitive evidence of a causal relationship.

Table 3: Pearson Correlation between Differentiated Instruction and Student Learning Outcomes (N = 120)

Variables	Pearson Correlation (r)	<i>p</i> -value	Interpretation
Differentiated Instruction and Student Learning Outcomes	0.71	<0.001	Strong Positive Correlation

Decision on Hypothesis H₀₁

Since the obtained *p*-value in Table 2 is less than 0.05, H₀₁ is rejected. Therefore, a statistically significant positive relationship exists between differentiated instructional practices and student learning outcomes.

Decision on Hypothesis H₀₂

Since the obtained *p*-value in Table 3 is less than 0.05, H₀₂ is rejected. Therefore, a significant difference exists between trained and untrained teachers in their implementation of differentiated instructional strategies. The result supports the importance of systematic teacher training and continuous professional development for effective differentiated instruction.

FINDINGS OF THE STUDY

The findings indicate that differentiated instructional practices were implemented at a generally high level in the selected inclusive secondary classrooms. Teachers reported adapting instructional content, learning activities, classroom grouping, resources, and assessment approaches to accommodate differences among learners. This pattern suggests an increasing recognition of learner diversity and the need to move beyond uniform instructional practices. Student engagement and classroom participation were positively associated with the implementation of differentiated instruction. Flexible grouping, collaborative activities, varied learning tasks, and opportunities for students to demonstrate understanding in different ways appeared to create a more participatory classroom environment. Such practices can provide learners with greater opportunities to interact, express ideas, seek assistance, and engage actively with classroom content.

The findings further indicate a positive relationship between differentiated instructional practices and student learning outcomes. Students in classrooms characterized by greater instructional flexibility were perceived as demonstrating stronger academic engagement, conceptual understanding, participation, and learning achievement. The relationship identified in the study supports the broader research literature suggesting that differentiation can contribute to improved educational outcomes when instructional decisions are closely aligned with learner needs.

A significant difference was also observed between trained and untrained teachers. Teachers who had received professional preparation in inclusive education demonstrated stronger implementation of differentiated instructional practices. This finding highlights the importance of teacher knowledge and professional competence in translating the principles of differentiation into actual classroom practice. Training appears particularly important for enabling teachers to design flexible lessons, use varied instructional strategies, employ appropriate assessment techniques, and respond effectively to learner diversity. The findings also reveal that assessment flexibility and teacher preparedness require further strengthening. Although teachers reported using differentiated practices, the comparatively lower level of preparedness suggests that implementation may be constrained by insufficient professional development, limited instructional resources, large class sizes, restricted planning time, and curriculum demands. Consequently, effective differentiation should be understood as an institutional responsibility rather than solely as an individual teacher responsibility.

Discussion

The findings of the study provide evidence that differentiated instruction has considerable potential for strengthening inclusive classroom practices. The positive relationship between differentiation and learning outcomes can be understood through the principle that students are more likely to engage meaningfully when instruction provides appropriate levels of challenge, support, choice, and participation. Instead of requiring all learners to follow identical instructional pathways, differentiated teaching creates multiple opportunities through which learners can access content and demonstrate understanding, consistent with Safawi and Akay's (2022) meta-analysis of 23 quantitative studies, which found a moderate overall effect of differentiated instruction on academic achievement. The positive association with student engagement is particularly important for inclusive education. Learners who experience difficulty in conventional classroom settings may become passive when instructional pace, materials, or activities do not correspond to their readiness. Differentiation can reduce this barrier by providing scaffolding, alternative learning materials, peer support, and appropriately challenging activities. At the same time, higher-achieving learners can be provided with enrichment and extension activities rather than being restricted to repetitive tasks. This interpretation is supported by Cai et al. (2024), which showed that teacher practice factors, particularly ongoing assessment and flexible grouping, played a significant mediating role in the relationship between UDL and differentiated instruction.

The significant difference between trained and untrained teachers reinforces the central role of professional preparation. Differentiation requires more than awareness of learner diversity; it requires teachers to diagnose learning needs, plan alternatives, monitor progress, and adjust instruction. Recent research similarly indicates that teacher preparation and contextual conditions are important determinants of successful differentiated instruction. The findings are also consistent with recent evidence that differentiated instruction can contribute to academic achievement. Asriadi et al. (2023) identified a positive evidence base while also demonstrating that implementation conditions influence outcomes. More recent empirical research has similarly reported positive effects of differentiated instruction on student academic performance. The relationship between differentiated instruction and inclusive education is further strengthened when differentiation is considered alongside Universal Design for Learning. Recent research indicates that UDL and differentiated instruction are complementary

approaches that can support flexible learning environments, provided that teachers possess the necessary pedagogical knowledge and classroom resources.

Nevertheless, the findings should not be interpreted as suggesting that differentiated instruction alone determines student achievement. Learning outcomes are influenced by multiple factors, including prior achievement, family background, school resources, teacher effectiveness, curriculum, assessment practices, motivation, and classroom climate. Dulfer et al. (2025) and Obrovská et al. (2024) demonstrate that the implementation of differentiated instruction is shaped by classroom composition and the interaction between teachers' beliefs and their instructional practices, and that positive orientations towards learner diversity do not necessarily translate into consistent differentiated practices when teachers lack systematic and experience-based preparation. Therefore, differentiated instruction should be viewed as one important component of a broader system of inclusive educational support. The practical implication is that schools seeking to strengthen inclusive education should move from occasional differentiation toward systematic instructional planning. Teacher professional development should include practical opportunities for designing differentiated lesson plans, developing tiered learning tasks, using formative assessment, managing flexible groups, and evaluating learner progress. Institutional leaders should also provide adequate planning time, teaching-learning materials, technology, and collaborative opportunities for teachers.

Limitations of the Study

The study has several limitations that should be considered when interpreting its findings. First, the geographical scope of the investigation was restricted to selected secondary schools in Pune, Maharashtra. Therefore, the findings may not be directly generalizable to rural schools, other urban areas, or different states of India where educational resources, teacher preparation, and classroom conditions may differ.

Second, the study relied primarily on a self-developed questionnaire and teacher self-report responses. Although the instrument demonstrated acceptable internal consistency and was reviewed by experts, self-report measures may be influenced by respondents' perceptions, professional expectations, or social desirability. Future studies could strengthen evidence by incorporating direct classroom observations, student achievement records, interviews, and longitudinal measures.

Third, the study employed a descriptive survey design and did not use random assignment of teachers or students to experimental and control groups. Consequently, the findings demonstrate significant associations and group differences but should not be interpreted as definitive causal evidence that differentiated instruction alone produces improved learning outcomes.

Finally, the study was conducted within a specific institutional and socio-educational context. Differences in class size, curriculum flexibility, school leadership, teacher workload, availability of resources, and professional development may influence the implementation of differentiated instruction. Future research should therefore examine these contextual variables through larger, multi-location, longitudinal, and experimental or mixed-method investigations.

CONCLUSION

The present study concludes that differentiated instruction represents an important pedagogical approach for strengthening learning opportunities in inclusive secondary classrooms. The findings indicate that differentiated instructional practices are positively associated with student engagement, classroom participation, and learning outcomes. The comparison of trained and untrained teachers further demonstrates the importance of professional preparation for implementing learner-responsive instructional strategies effectively. The study also highlights that successful differentiation requires more than individual teacher initiative. It depends upon supportive institutional conditions, appropriate teaching-learning resources, flexible curriculum planning, manageable classroom environments, effective assessment practices, and continuous professional development. Differentiated instruction should therefore be incorporated systematically into teacher education, in-service training, lesson planning, classroom assessment, and school-level academic planning. For inclusive education to achieve its broader objectives of equity and meaningful participation, schools must recognize learner diversity as an integral feature of classroom life. Differentiated instruction provides a practical framework for responding to such diversity while maintaining common educational goals. However, the approach should be implemented critically and contextually rather than as a uniform set of techniques. Future research involving larger and more diverse samples, direct classroom observations, longitudinal designs, and experimental comparisons can provide stronger evidence regarding the long-term effectiveness of differentiated instruction.

Recommendations

To successfully implement strategies for diverse classrooms, schools and policymakers should focus on the following:

1. **Strengthen Teacher Professional Development:** Regular training programmes should develop teachers' practical competence in flexible grouping, scaffolding, differentiated assessment, tiered activities, and learner-centred lesson planning.
2. **Promote Flexible Curriculum Implementation:** Schools should provide teachers with sufficient flexibility to adapt learning activities, resources, instructional pace, and assessment according to learner needs without compromising curriculum standards.
3. **Develop Differentiated Assessment Practices:** Assessment should include varied approaches such as projects, portfolios, presentations, classroom activities, formative assessment, and performance-based tasks.
4. **Improve Teaching-Learning Resources:** Schools should ensure the availability of varied instructional materials, digital resources, assistive technologies, and accessible learning resources for diverse learners.
5. **Strengthen Institutional Support:** School administrators should provide planning time, peer collaboration opportunities, mentoring, and professional learning communities to support teachers implementing differentiated instruction.

6. **Promote Inclusive Classroom Planning:** Teachers should use learner profiles, formative assessment information, and classroom observations to identify learning needs and design appropriate instructional responses.
7. **Encourage Collaborative Professional Practice:** General education teachers, special educators, counsellors, and school administrators should work collaboratively to design effective support systems for diverse learners.
8. **Expand Empirical Research:** Future studies should examine differentiated instruction across different geographical regions, school types, grade levels, and learner groups using longitudinal, experimental, and mixed-method research designs.

REFERENCES

- Ainscow, M. (2020). *Promoting inclusion and equity in education*. Routledge.
- Angreni, S., Sari, R. T., Hamda, F., & Zainul, R. (2026). Differentiated learning in elementary schools: A systematic literature review from an inclusive education perspective. *Journal of ICSAR*, 10(1), 148-163.
- Asriadi, M. A., Hadi, S., Istiyono, E., & Retnawati, H. (2023). Does differentiated instruction affect learning outcome? Systematic review and meta-analysis. *Journal of Pedagogical Research*, 7(5), 18–33.
- Cai, J., Wen, Q., Bi, M., & Lombaerts, K. (2024). How Universal Design for Learning (UDL) is related to differentiated instruction (DI): The mediation role of growth mindset and teachers' practices factors. *Social Psychology of Education*, 27, 3513–3532.
- Dulfer, N., Saito, T., & McKernan, A. (2025). Differentiated instruction: An investigation into the effect of class compositional factors on teaching processes. *Asia Pacific Education Review*, 26, 1041–1054.
- Gregory, G. H., & Chapman, C. (2013). *Differentiated instructional strategies: One size doesn't fit all*. Corwin.
- Hall, T. (2002). *Differentiated instruction: Effective classroom practices*. National Center on Accessing the General Curriculum.
- Heacox, D. (2012). *Differentiating instruction in the regular classroom*. Free Spirit Publishing.
- Kara, S., & Tekindur, A. (2025). The effect of differentiated instruction on the academic achievement and opinions of 3rd-grade students in science education: A mixed-methods study. *Journal of Intelligence*, 13(10), 126.
- Ministry of Education, Government of India. (2020). *National Education Policy 2020*. Government of India.

- National Council of Educational Research and Training. (2022). *Learning outcomes at the secondary stage*. NCERT.
- Obrovská, J., Svojanovský, P., Kratochvílová, J., & Lojdová, K. (2024). Promises and challenges of differentiated instruction as pre-service teachers learn to address pupil diversity. *Journal of Education for Teaching*, 50(3).
- Safawi, S. S., & Akay, C. (2022). The effect of differentiated instruction approach on students' academic achievement and attitudes: A meta-analysis study. *Integrity Journal of Education and Training*, 6(6), 120–132.
- Subban, P. (2006). Differentiated instruction: A research basis. *International Education Journal*, 7(7), 935–947.
- Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms*. ASCD.
- Tomlinson, C. A. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd ed.). ASCD.
- Tomlinson, C. A., & McTighe, J. (2006). *Integrating differentiated instruction and understanding by design*. ASCD.
- UNESCO. (2020). *Global education monitoring report 2020: Inclusion and education: All means all*. UNESCO.
- United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. United Nations.
- Woolfolk, A. (2019). *Educational psychology* (14th ed.). Pearson.
- Zwozdiak-Myers, P. (2018). *The teacher's reflective practice handbook*. Routledge.