



REVIEW

Implementation of and challenges in differentiated L2 language instruction: A systematic literature review (2014-2023)

Implementación y desafíos en la enseñanza diferenciada de la lengua L2: una revisión sistemática de la literatura (2014-2023)

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ABSTRACT

In the realm of second language (L2) education, differentiated instruction (DI) has garnered significant attention as an adaptive approach to meeting diverse learner needs. This study systematically reviews the 2014-2023 research on the implementation and related challenges of DI in L2 instruction. Through a comprehensive analysis of empirical studies, the review highlights key DI strategies, and the obstacles faced in practical application. Findings suggest that while DI can foster more inclusive and effective L2 learning environments; however, challenges persist, such as resource constraints, teacher preparedness, and varying student motivation levels. This review synthesizes current knowledge to provide educators, policymakers, and researchers with valuable insights, ultimately aiming to enhance the efficacy of DI in L2 education.

Keywords: Differentiated Instruction; L2 Education; Implementation; Educational Challenge.

RESUMEN

Este estudio revisa sistemáticamente la investigación 2014-2023 sobre la implementación y los desafíos relacionados del DI en la instrucción L2. A través de un análisis exhaustivo de estudios empíricos, la revisión destaca las estrategias clave de DI y los obstáculos que enfrentan en la aplicación práctica. Los resultados sugieren que, si bien el DI puede fomentar entornos de aprendizaje de L2 más inclusivos y efectivos; Sin embargo, los desafíos persisten, como las limitaciones de recursos, la preparación de los maestros y los diferentes niveles de motivación de los estudiantes. Esta revisión sintetiza el conocimiento actual para proveer a educadores, diseñadores de políticas e investigadores con valiosos conocimientos, con el objetivo final de mejorar la eficacia de la DI en la educación de L2.

Palabras clave: Instrucción Diferenciada; Educación L2; Implementación; Desafío Educativo.

INTRODUCTION

Students' varied English proficiency levels indeed present significant challenges to instructors. These challenges are multifaceted, encompassing linguistic, academic and cultural dimensions, various ages, gender, family status, and other diversity.⁽¹⁾ Diverse learning needs in L2 classrooms are a multifaceted challenge that also requires a nuanced approach to address effectively. Differentiated instruction (DI) has emerged as a compelling approach for tackling diverse learning needs in L2 classrooms, where students often vary

significantly in their language proficiency, learning styles, interests, and backgrounds.⁽²⁾

DI aims to provide personalized learning experiences that accommodate different learning needs, interests, and abilities of students, thereby optimizing educational outcomes for all learners. Tomlinson describes differentiation as altering classroom activities to provide students with various ways to absorb information, understand concepts, and demonstrate their learning.⁽³⁾ By grouping students according to their individual needs, abilities, and skills, DI improves each student's potential and overcomes barriers in the learning process.^(4,5) DI is not about individualizing instruction for each student but instead, differentiating instruction for groups based on their unique characteristics.⁽⁶⁾ Educators play an essential role in executing DI as a pedagogical model that addresses individual learning needs and promotes inclusive classrooms.⁽⁷⁾

DI begins with analyzing students' needs and understanding each student's characteristics through pre-assessments or individual interviews between the teacher and the student.^(8,9) Teachers should also foster a feeling of belonging in the classroom, encouraging students to generate an encouraging atmosphere by involving them in group activities. Finally, appropriate methods and strategies should be utilized to address the needs of students in the classroom.⁽¹⁰⁾

DI has become an essential approach in language education, especially in L2 contexts, to address the diverse needs, abilities, and backgrounds of educands, challenging the traditional 'one-size-fits-all' approach.⁽¹¹⁾ By incorporating diverse teaching media, DI encompasses a range of activities and content tailored to students' needs, such as games and cooperative learning strategies, allowing them to express themselves freely.⁽¹²⁾

However, despite its apparent benefits, the implementation of DI in L2/foreign language (FL) education faces multifaceted and complex challenges. Challenges include time-consuming implementation, the need for continual monitoring of individual student learning styles, and pressure on teachers.⁽¹³⁾ Inspired by industrial psychology, DI emphasizes setting clear and achievable goals to break down complex tasks into manageable components, as mentioned by Mardhatillah and Suharyadi (2023). Misperceptions about unfair treatment and concerns about class size also pose challenges. Additionally, there are issues with teachers' conceptual understanding and differences in application of differentiated instruction between language and science subjects.⁽¹⁴⁾ The need for professional training among teachers to effectively implement differentiated instruction is emphasized, along with the importance of stakeholder commitment and support in overcoming these challenges.⁽¹⁵⁾

Despite these challenges, DI is recognized for its potential to create inclusive learning environments, promote equality, and improve academic achievement. Implementing DI involves understanding students' preferences, skills, and proficiency levels, and utilizing various approaches to accommodate diverse learners effectively. Over the past decade, from 2014 to 2023, an increasing body of research has explored the implementation of differentiated L2 language instruction, as well as the multifaceted challenges associated with it.

Accordingly, the study aims to (1) systematically pinpoint an outstanding strategic approach to the operationalization in the creation and delivery of DI in L2 education, and (2) uncover any documented obstacles and challenges teachers encounter while formulating and implementing DI in L2 education. To this end, the research systematically reviews previous studies to inform educators, policymakers, and researchers about the current state of DI in L2 learning, offering insights for future improvements and research directions.

The concept of DI has evolved significantly over time, although its formalization as a pedagogical model is relatively recent. Differentiated instruction, as we understand it today, is rooted in the recognition that each learner has unique needs, a theme that has been a persistent theme in educational theory and practice. This recognition succinctly yet effectively captures the essence of DI, which meets the learning needs of students with different characteristics, as outlined by Tomlinson (2002).⁽¹⁶⁾ Although no educational scholar or teacher maintains a monopoly on differentiation, the name "Carol Ann Tomlinson" deserves special attention as she is a prominent figure known for her extensive work on differentiated instruction. Her differentiated instructional model, which focuses on "content, process, product, and learning environment" adaptations, has been widely applied in various educational settings, including rural classrooms, to cater to diverse learner needs and maximize their potential.⁽¹⁷⁾ Tomlinson's work aligns with the concept of differentiation, which aims to address individual differences among learners by providing varied learning experiences based on readiness levels, interests, learning styles, and motivations.⁽¹⁸⁾ Additionally, the theoretical basis of differentiated instruction, rooted in learner-centered educational theories like readiness, multiple intelligences, and zone of proximal development, further underscores the importance of Tomlinson's contributions to inclusive education through differentiated instruction.⁽¹⁹⁾

The modern framework of DI aims to address these varied learning needs by adjusting content, processes, and outcomes according to students' readiness, interests, and learning profiles.⁽²⁰⁾ This approach has gained traction, particularly in inclusive educational settings, where the goal is to enhance learning opportunities for every student, irrespective of their backgrounds or abilities. The implementation of DI has shown positive effects on student engagement and motivation, although its impact on academic performance can vary depending on the context and subject matter.⁽²¹⁾ During the COVID-19 pandemic, DI strategies were adapted for online

learning environments, demonstrating that technology can be leveraged to support diverse learners, even in virtual settings. Despite its benefits, the adoption of DI requires a shift in teachers' philosophies and substantial professional development for effective implementation.⁽²²⁾ Research has shown that DI can significantly improve learning outcomes when teachers are well-prepared and committed to its principles.⁽²³⁾ Overall, while the formal history of DI as a structured educational model may not date back to the 1600s in the USA, its underlying principles of catering to individual learning needs have long been part of educational discourse, evolving into the comprehensive and inclusive approach we see today.

Differentiation in education transcends being merely a tactic and embodies a comprehensive educational philosophy that seeks to meet the varied needs of students in a heterogeneous classroom environment. This approach is rooted in the belief that education should cater to the individual learning profiles, readiness, interests, and talents of each student, thereby fostering an inclusive and supportive learning atmosphere. Differentiated learning is not just about modifying the curriculum; it involves a systemic transformation of educational practices, cultures, and values to ensure that all students, regardless of their backgrounds, have fair access to learning opportunities. It is a method of refining classroom instruction to maximize each pupil's potential by recognizing their unique needs and providing them with choices about what and how to learn, thereby enhancing their achievements and overcoming learning barriers. This philosophy is significant in diverse classrooms that accommodate students' diverse backgrounds and skill levels vary widely, necessitating a variety of instructional methods to ensure effective learning for all. By focusing on individual learning needs and maximizing students' learning opportunities, differentiation helps develop well-rounded individuals who can achieve their highest potential, aligning with the broader educational goal of preparing young people for the greatest common good. Thus, differentiation is a holistic educational philosophy that seeks to guide each student towards achieving their best, both academically and personally, by accommodating their unique characteristics and learning styles.⁽²⁴⁾

DI has received considerable attention in educational research because of its potential to address diverse learning needs within the classroom. One major advantage of DI is its adaptability to individual student profiles, which promotes an inclusive learning environment. Policymakers advocate for and mandate the implementation of DI in educational settings to maintain a high standard of education in classrooms with mixed ability levels.^(25,26) By employing varied teaching strategies and materials, DI helps pace-setting to coincide with different learning speeds, ensuring that each student can achieve effective learning at their own rate. Additionally, effective integration of DI into instruction and learning has the capability to yield numerous positive results.⁽²⁷⁾ Furthermore, DI has been linked with enhanced student engagement and motivation, as students are more likely to invest in learning activities that are aligned with their personal interests and learning styles.⁽²⁸⁾

While DI holds a significant place in the realm of education, teachers often grapple with uncertainties about effectively integrating it in the classroom and how to address potential challenges that may arise. Effectively integrating DI into teaching has the potential to produce many positive outcomes.⁽²⁹⁾ Hence, the obstacles encountered by educators must be carefully examined and addressed to guarantee the effective implementation of DI in L2 classrooms.

RQ 1: What are the most effective strategies for operationalizing DI in L2 education?

RQ 2: What obstacles and challenges do teachers face when developing and implementing DI in L2 education?

METHOD

Literature search procedure

For this study, a systematic literature review was carried out to assess and examine all available evidence pertinent to our research goal.⁽³⁰⁾ The research utilized the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure rigorous reporting standards in systematic reviews.⁽³¹⁾ PRISMA aids in selecting articles for review, promoting credibility and reliability.⁽³²⁾ By following PRISMA, scholars can enhance the transparency and quality of their systematic reviews, ultimately improving the reliability and trustworthiness of the findings. Figure 1 depicts the systematic review process, including identification, screening, eligibility, and inclusion phases.⁽³³⁾ The identification phase involved database searches in reputable sources such as Web of Science, Scopus, and ProQuest.

In the initial step of identifying articles for review, a systematic search strategy was employed to target multidisciplinary databases using specific keywords related to differentiated instruction and foreign language education. This search included terms like "differentiated instruction," "individualized instruction," "curriculum differentiation," "differentiated curriculum," in conjunction with terms such as "foreign language education," "second language teaching," and "English teaching" to ensure a comprehensive selection of relevant literature. The aim was to gather a diverse range of studies that address the intersection of differentiated instruction and language education, highlighting the significance of customizing teaching approaches to address the varied learning requirements of students in classrooms. This systematic approach ensured a focused review of articles that examine the advantages and difficulties of implementing DI in language education settings.

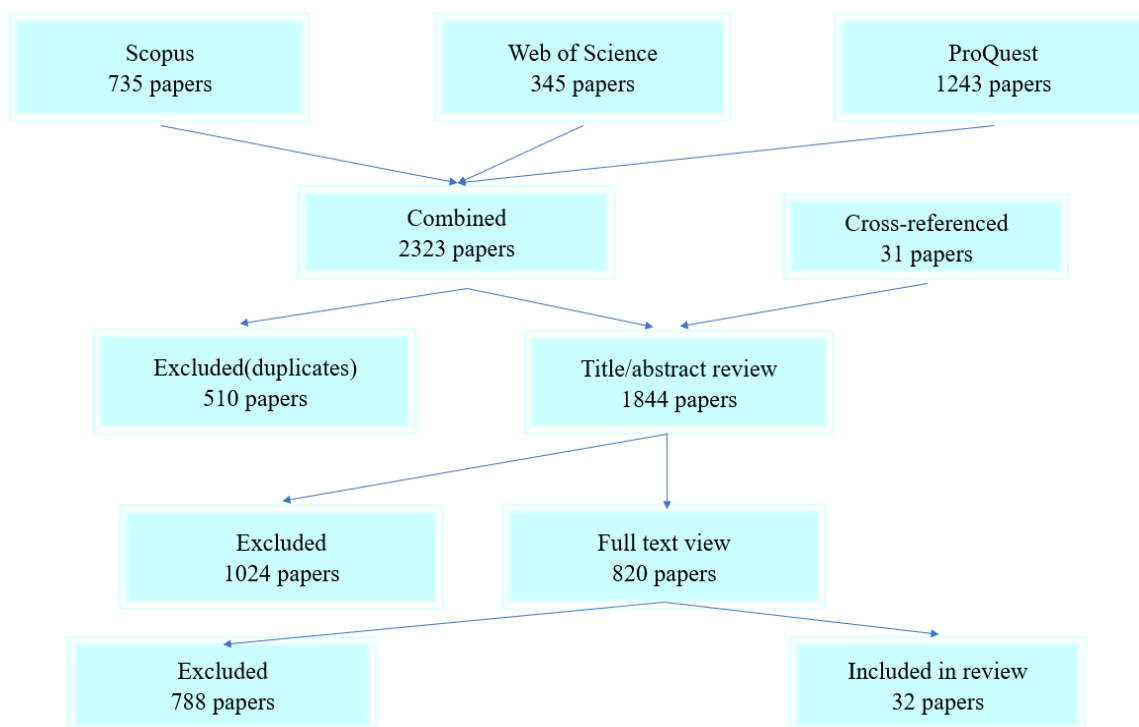


Figure 1. PRISMA workflow

Inclusion and exclusion criteria

During the screening phase, articles underwent evaluation according to their titles and abstracts, and specific criteria were utilized to eliminate irrelevant articles. Studies considered for the review met the following criteria: (1) were published in English-language, peer-reviewed journals; (2) explicitly described DI utilized in FL/L2 classroom; and (3) referenced both DI and FL/L2. To obtain a relevant and up-to-date perspective on our research question, we included articles published from 2014 onwards.

The exclusion criteria were carefully defined. First, non-empirical studies, such as position papers, conceptual papers, and review articles, were excluded because they generally do not involve empirical investigation of learners or data collection on learners' use of DI in language education. These studies often discuss DI from a theoretical angle or by summarizing past research, lacking original data on DI. Second, conference proceedings, books, book chapters, and non-journal publications were excluded due to potential quality discrepancies. Initially, some of these works were considered, but a subsequent review identified missing critical research design details, data analysis issues, or other concerns. To maintain high quality, only select peer-reviewed journal articles were included. Additionally, studies not using DI for language teaching were excluded to ensure relevance to our key criteria. In the third step, eligibility assessment involved a comprehensive full-text review of the remaining articles. Ultimately, the review incorporated the research findings from the final 32 articles that met the eligibility criteria.

Table 1. Inclusion/Exclusion Criteria

No.	Inclusion Criteria	Exclusion Criteria
1	English papers	Non-English papers
2	Full-text accessible	Full-text not accessible
3	Articles are journal papers	Book chapters, conference papers, reports, etc.
4	Articles are at least three pages long	Posters, short papers, abstracts, etc. less than three pages long
6	Article titles appear only once	Duplicate titles
5	Study includes clear research questions, methods, and conclusions	Study does not present clear research questions, methods, and conclusions
6	Study mainly focuses both on the DI and language teaching	Study does not simultaneously focus on DI and language teaching

Synthesis

This synthesis will not only highlight effective differentiated instruction practices and their outcomes but also identify potential areas for further research and practical applications in foreign language education. Through adhering to these methodological steps, the systematic literature review aims to offer a rigorous and insightful overview of DI within the context of foreign language education, contributing valuable perspectives to educators and policy-makers in this field.

DEVELOPMENT

After removing duplicates, a total of 1,844 papers were reviewed, as shown in Figure 1. Papers presenting the same data and findings were treated as a single study, leading to 18 unique studies incorporated in the review. For instance, Chin-Wen Chien's papers (2012, 2015) include the same items, hence considered as one study.^(34,35) Out of these, 32 papers fulfilled the eligibility criteria for inclusion in the study. Therefore, the final analysis included 32 unique studies after this consolidation process. DI in L2 classrooms has garnered significant attention in educational research, particularly in North America, Europe, and Asia, over the past decade, as evidenced by a comprehensive review of 50 studies. The studies primarily focus on K-12 students, with a smaller portion dedicated to adult learners, highlighting the widespread application of DI across various age groups. DI, a teaching approach that caters to individual student needs, poses both advantages and challenges. While it enhances student motivation, participation, and teacher-student relationships, it also presents difficulties such as being time-consuming and facing misperceptions about fairness.⁽³⁶⁾

The research emphasizes the significance of customizing teaching methods to meet the diverse students, showcasing the global relevance of DI in enhancing language acquisition and promoting inclusive education.⁽³⁷⁾ Despite the growing body of literature on DI in language classrooms, there remains a need for more empirical evidence and a modal approach to effectively incorporate differentiation practices, pointing towards avenues for future research and professional development opportunities for language teachers.

DI implementation

DI approach includes a range of strategies designed to address the diverse learning needs of students. An effective method involves utilizing a variety of learning resources beyond standard textbooks, such as audiovisual materials, infographics, and pertinent articles, which accommodate different learning styles and preferences.⁽³⁸⁾ In addition, the concept of universal design from architecture, which advocates for initial universal access, can be applied to education by incorporating multiple modalities in instruction, thus addressing various cognitive functions and learning styles from the outset. In the context of L2 classrooms, differentiated reading materials are crucial, as many students enter university without adequate reading strategies, making it essential to tailor reading tasks to individual strengths and weaknesses.⁽³⁹⁾ Moreover, inclusive curriculum design, which incorporates principles like Universal Design for Learning (UDL) and culturally responsive teaching, is vital to fostering educational equity and ensuring that every student has access to premium learning opportunities. These strategies collectively highlight the importance of adaptability, flexibility, and a comprehensive understanding of students' varied needs, thereby enhancing educational outcomes and satisfaction. By integrating these diverse approaches, teachers can foster a more inclusive and efficient learning atmosphere that promotes the academic and personal development of every student. In the implementation of DI, three key principles closely related to students come into play: students' readiness, interests, and learning preferences, which form the foundation for how teachers develop and apply the DI approach within their classrooms.⁽⁴⁰⁾

Implementing DI in a foreign language classroom often involves grouping students strategically. This can be based on their proficiency levels, learning preferences, or specific linguistic skills that they need to develop.⁽²³⁾ For example, some students may work better in pairs or small groups for conversational practice, while others might benefit from individualized grammar exercises or reading assignments designed to cater to their personal interests.⁽⁴¹⁾ Teachers may also offer different levels of challenge within the same lesson, providing advanced supplementary materials for faster learners, while offering more structured guidance for those who need additional support.⁽⁴²⁾ This kind of adaptive grouping helps to ensure that each student can progress at a suitable pace without feeling overly challenged or insufficiently stimulated. Also, according to Sun (2023), DI in foreign language education is an instructional approach that customizes teaching to address the varied needs, learning styles, and abilities of students. This practice acknowledges that students learn languages in varied ways and at different paces, necessitating a flexible and adaptive teaching approach. In a differentiated classroom, the instructor might employ a range of instructional methods, including visual aids, interactive activities, and technology tools to engage all learners. By diversifying teaching methods, students are provided with multiple pathways to acquire the language, which can enhance their motivation and improve outcomes.

Assessment is another crucial component of differentiated instruction in L2 education. Through ongoing, formative assessments, teachers can gain insights into students' progress and identify areas requiring more focus. Instead of relying solely on standard tests, teachers might utilize a range of assessment tools, including

portfolios, presentations, or self-assessments, to measure students' language abilities in a more holistic and personalized manner. These assessments not only provide critical information for adjusting instructional approaches but also help students become more aware of their learning processes and achievements. By continuously adapting instruction based on assessment data, L2 educators can better address the varied learning needs of their students.

Furthermore, differentiation aims to optimize each student's potential by adapting instruction to their unique needs, abilities, and learning styles and preferences.⁽⁴³⁾ Understanding the complexities of instructional differentiation and supporting teachers in embedding these practices through professional development is crucial for successful implementation.

DISCUSSION

Obstacles and challenges in DI

Differentiated instruction, while beneficial, does pose challenges as highlighted in the research.

Firstly, implementing DI in L2 education requires teachers to possess extensive knowledge and skills. Many teachers may not have been trained in the principles and practices of DI during their initial certification or education programs. This lack of preparation can make it difficult for them to design and deliver lessons that effectively address the varied needs of their students.⁽⁴²⁾

Secondly, DI often necessitates various teaching materials and resources to address the varying levels of student readiness, interests, and learning profiles. However, many schools and educators are constrained by tight budgets. This can result in insufficient access to necessary resources, such as diverse reading materials, technology tools, and language learning software. Even when resources are available, teachers may have to dedicate a considerable amount of time to collecting and organizing them to effectively support different instructional strategies.

Thirdly, keeping up with the latest research on language acquisition, differentiation strategies, and instructional technologies is critical for the effective execution of DI. However, the time commitment required for ongoing research can be a major challenge for teachers who already carry heavy workloads.

Lastly, continuous professional development is essential for teachers to effectively implement DI in FL education. However, accessing high-quality professional development opportunities can be challenging. Schools might lack the funds to provide these opportunities, or they may fail to prioritize them. Additionally, professional development programs that focus specifically on DI strategies tailored to L2 education might not be readily available.

Furthermore, inconsistent definitions and practices of differentiated instruction have been noted, with some teachers focusing on individualization rather than differentiated instruction, leading to varied practices within classrooms.⁽⁴⁴⁾

Addressing these challenges through proper planning, training, and support can help maximize the benefits of differentiated instruction for student learning and outcomes. A transdisciplinary approach recommends several strategies: drawing from the discipline of architecture, it advocates for universal design principles to be initially integrated into teaching practices; leveraging insights from neuro-psychology, it suggests incorporating multiple modalities in teaching to cater to diverse learning styles; and influenced by social psychology, it promotes self-regulation through technology to enhance student self-assessment and self-improvement.⁽⁴⁵⁾ By adopting these innovative strategies, instructors can address the challenges linked to DI and foster a more inclusive and effective learning environment for students.

Limitations

While this systematic literature review provides valuable insights into the implementation of and challenges in differentiated L2 instruction from 2015 to 2023, several limitations exist. First, the scope of this review is confined to studies published in English, thereby introducing a potential bias toward English-speaking contexts. Second, the review predominantly draws on empirical studies sourced from specific academic databases, potentially overlooking valuable insights from grey literature, unpublished studies, or conference proceedings. Third, the heterogeneity of study designs, contexts, and methodologies across the reviewed literature complicates the synthesis of findings and the drawing of systematic conclusions. Additionally, variations in the definition and implementation of differentiated instruction across different studies may affect the consistency and comparability of results. Furthermore, the review does not thoroughly analyze the long-term impacts of differentiated instruction due to the scarcity of longitudinal studies in the field. Lastly, this review acknowledges that the rapidly evolving nature of pedagogical strategies and educational technologies implies that some recent advancements may not be fully captured within the covered period. Future research should aim to address these limitations by incorporating a broader linguistic and geographical scope, exploring diverse data sources, and emphasizing longitudinal and meta-analytic methods to offer a more comprehensive understanding of differentiated L2 instruction.

CONCLUSIONS

This systematic literature review provides a holistic examination of the implementation and challenges associated with differentiated L2 language instruction from 2014 to 2023. Effective DI practices identified in the literature include flexible student grouping, adaptive content delivery, and formative assessments. However, the review also highlights significant challenges in applying of DI. Key issues include insufficient educator training and professional growth, limited resources, and the complexity of effectively managing a differentiated classroom. Additionally, there is a persistent struggle to balance standardized curriculum demands with the individualized approach inherent to DI.

This review calls for continued exploration and innovation in DI practices, emphasizing that students, parents, and school administration ought to grasp the principles of differentiated learning to effectively assist its planning, execution, and evaluation. To advance the efficacy of DI in enhancing L2 education, future research should focus on developing robust training programs for educators, exploring technological tools and remote learning that can assist in differentiation, and investigating long-term impacts on learner outcomes.

In conclusion, while differentiated L2 instruction presents certain challenges, it remains a vital and promising approach to accommodating diverse learner needs. By fostering an adaptive learning environment, educators can better support students' language learning and ultimately contribute to the broader goal of educational equity.

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