The Effectiveness of Differentiated Instruction in Developing English Reading Skills for Vocational School Students in Jinan, China

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ABSTRACT

In the context of China's vocational education, English reading competence is crucial for accessing technical materials, safety protocols, and digital resources. However, students exhibit wide disparities in proficiency, motivation, and learning needs, making traditional "one-size-fits-all" instruction inadequate. This study investigates the effectiveness of Differentiated Instruction (DI) in enhancing English reading skills among first-year vocational students in Jinan, China. Employing a mixed-methods design, quantitative data from pre- and post-tests were combined with qualitative insights from semi-structured interviews to capture both performance outcomes and learner experiences. Results indicate that DI significantly improves reading comprehension compared to traditional instruction, with low- and medium-proficiency students showing the greatest gains. High-proficiency students achieved modest improvements, highlighting the need for upward differentiation. Qualitative findings reveal that appropriately leveled tasks, scaffolded support, and collaborative learning enhanced confidence, motivation, and engagement across proficiency levels. The study demonstrates that DI is not merely a remediation tool but a comprehensive instructional approach addressing cognitive, motivational, and social dimensions of learning. Implications include the importance of teacher training, tiered materials, and flexible grouping to foster equitable and effective vocational English education. Limitations and directions for future research, including long-term retention and skill transfer, are discussed.

Keywords: Differentiated Instruction, Vocational Education, English Reading Skills

INTRODUCTION

In today's globalized and technology-driven world, English language proficiency has become an essential competency not only for academic advancement but also for employability in internationalized labor markets (Taufik, 2024). Within China's vocational education system, English reading competence is particularly significant because it enables students to access technical manuals, safety regulations, and digital resources that are often presented in English (Chea & Lo, 2022). The rapid integration of technology and international trade into vocational industries has heightened the demand for workers who can comprehend professional texts, interpret instructions accurately, and communicate effectively in English-mediated environments. Despite the national emphasis on English for practical use, vocational students in China continue to display substantial disparities in English proficiency, motivation, and learning needs (Chuane et al., 2023). This heterogeneity presents a persistent challenge to the traditional "one-size-fits-all" pedagogy still prevalent in many vocational classrooms, which often assumes a uniform level of readiness and background knowledge among learners

(Zhang, 2024).

Unlike students in academic senior high schools, vocational learners typically enter with uneven educational backgrounds and relatively low English proficiency. Many have experienced repeated academic setbacks or disengagement during earlier schooling, resulting in limited vocabulary, underdeveloped reading strategies, and low self-efficacy (Ma et al., 2024). Some students may have relied primarily on rote memorization rather than developing critical reading skills, leaving them unprepared for the analytical and inferential demands of vocational texts. Consequently, uniform instruction tends to overload struggling students while leaving advanced ones under-stimulated, creating a classroom environment where learning outcomes vary widely and only a minority benefit fully. In addition, motivational factors play a crucial role: students who encounter repeated failure often develop negative attitudes toward English learning, while more capable learners may experience boredom and disengagement. Addressing such diversity requires an instructional approach that is flexible, inclusive, and responsive to differences in students' readiness, interests, and learning profiles. Differentiated Instruction (DI), a pedagogical model grounded in learner diversity, provides a theoretically robust and practically feasible framework to meet this challenge, promoting both skill development and learner motivation.

Although Differentiated Instruction has been widely recognized internationally as an effective approach for promoting equity and engagement in heterogeneous classrooms (Feng et al., 2025; Matiyenga & Ajani, 2024), its implementation in Chinese vocational education remains minimal and under-theorized. Several contextual factors—such as the persistence of exam-oriented teaching, large class sizes, limited teacher preparation in DI methods, and insufficient access to differentiated teaching materials—constrain teachers' ability to tailor instruction effectively (Kaziya, 2025). Moreover, most empirical studies on DI in China have been conducted in general education settings, with few addressing the unique characteristics of vocational English teaching. Vocational English instruction, oriented toward employability and practical communication, differs fundamentally from the academic English focus found in high schools or universities. It is primarily concerned with reading comprehension, functional writing, and communication skills that students will apply in industry-specific contexts. Yet, little is known about how DI can be adapted to this skill-based context, where students' needs range from basic comprehension to domain-specific reading for technical subjects.

Another underexplored issue concerns the differential impact of DI across proficiency levels. While many studies have demonstrated its overall effectiveness, relatively few have examined how DI benefits learners of varying proficiency within the same classroom. Without such disaggregated analysis, it remains unclear whether DI equally supports all students or tends to favor particular subgroups. This issue is particularly salient in vocational settings, where proficiency levels often range from near-beginner to intermediate or higher. Ensuring that struggling students receive sufficient scaffolding without limiting the learning opportunities of high-level learners is critical to achieving equitable outcomes and fostering both competence and confidence across the cohort.

The present study addresses these gaps by systematically investigating the impact of Differentiated Instruction on English reading skills among vocational school students in Jinan, China. It aims not only to assess measurable gains in reading performance but also to capture learners' subjective experiences of DI-based instruction, thereby providing a more holistic view of its pedagogical value. To achieve this, a mixed-methods design was employed, combining quantitative pre- and post-tests with qualitative interviews. This dual approach allows for both statistical validation of DI's effectiveness and an in-depth understanding of how students with different proficiency levels perceive and respond to differentiated teaching practices. The study is guided by two central research questions: (1) To what extent does Differentiated Instruction significantly improve the English reading comprehension of vocational school students compared with traditional

instruction? (2) How do students of low, medium, and high proficiency levels perceive and perform under a Differentiated Instruction model in their reading classes? These questions are designed to capture both the measurable and experiential dimensions of differentiation in the vocational EFL classroom, providing insights into instructional efficacy, learner engagement, and equity.

This research contributes to the growing body of literature on differentiated pedagogy in several important ways. First, it extends the application of DI to a previously underrepresented domain—vocational English reading—by providing empirical evidence from China's rapidly evolving technical education system. Whereas earlier studies have focused mainly on general secondary or tertiary education, this research situates DI in the pragmatic, task-oriented environment of vocational schools, where English learning is closely tied to future employment and industry communication. Second, the study demonstrates how DI principles can be effectively implemented in resource-constrained classrooms. Through the use of tiered reading materials, scaffolded support, flexible group work, and choice-driven activities, it offers a replicable instructional model that vocational English teachers can realistically apply without excessive preparation or specialized technology. Third, by analyzing outcomes across proficiency levels, the study contributes to a more nuanced understanding of educational equity. It highlights how differentiation can narrow achievement gaps by empowering low- and medium-level learners while also identifying the need for upward differentiation to ensure continued growth among high-level students. Finally, by integrating quantitative and qualitative data, the study offers a model for evaluating both learning outcomes and learner experiences, reinforcing the practical relevance of DI for teaching in real-world vocational contexts

LITERATURE REVIEW

Theoretical Foundations: ZPD and Differentiated Instruction

The theoretical foundation of this study is grounded in concept of the Zone of Proximal Development (ZPD) and framework of Differentiated Instruction (DI) (Karimi & Nazari, 2021; Mais & Yaum, 2025). The ZPD posits that effective learning occurs when instruction targets the gap between what a learner can do independently and what they can achieve with appropriate guidance. This sociocultural perspective highlights the interactive and scaffolded nature of learning, suggesting that knowledge construction is socially mediated and context-dependent. Within this framework, teachers act as facilitators who adapt their instructional input according to learners' developmental levels and readiness. Differentiated Instruction operationalizes this theoretical principle by advocating for systematic variation in instructional content, process, and assessment to accommodate diverse learner needs. Tomlinson et al. (2003) emphasizes that differentiation does not mean individualizing every task, but rather designing learning experiences that are flexible enough to respond to varied student readiness, interests, and learning profiles. The synergy between ZPD and DI thus bridges theory and practice: ZPD provides the cognitive foundation for understanding individual learning potential, while DI provides the pedagogical strategies to actualize that potential in real classrooms (Reis & Renzulli, 2018).

In English language education, this integration is particularly relevant because students often exhibit diverse linguistic competencies and affective orientations. For example, a teacher may provide scaffolded vocabulary support for low-proficiency learners while offering analytical discourse tasks to advanced students, ensuring that all operate within their respective ZPDs. In the context of Chinese vocational education, where learners' English proficiency varies dramatically, this combined framework offers a way to balance standardization and personalization. It empowers teachers to design inclusive instruction that supports both struggling and proficient learners, aligning educational equity with effectiveness. The theoretical linkage between ZPD and DI therefore underpins this study's inquiry into adaptive teaching strategies that enhance both language development and learner motivation in vocational English classrooms.

Empirical Studies on Differentiated Instruction in English Language Teaching

A growing body of empirical research has demonstrated the positive impact of Differentiated Instruction on learner engagement, motivation, and achievement in English language teaching. Internationally, El-Henawy (2025) synthesized multiple classroom-based studies and concluded that differentiation fosters inclusivity and learner-centered environments, particularly in linguistically diverse classrooms. Similarly, Bernard et al. (2019) found that differentiated strategies in ESL contexts promote student autonomy and participation by allowing learners to engage with content at their own cognitive and linguistic levels. Ismail and Al Allaq (2019) further reported that teachers who implemented differentiated activities observed improved student confidence and communicative competence, as instruction was more responsive to individual needs. In East Asian EFL settings, DI has been shown to reduce learner anxiety and promote collaborative learning, creating more supportive classroom dynamics. In the Chinese context, several studies have examined the application of DI at different educational levels. Suprayogi et al. (2017) found that differentiated teaching improved students' self-regulated learning behaviors and academic performance, especially when combined with formative assessment.

However, despite these encouraging findings, most existing research has focused on general or university-level English learners, leaving vocational education relatively underexplored. Vocational college students often approach English learning with instrumental motivations—focusing on employability rather than academic mastery—and may benefit more from task-based and context-oriented differentiation (Ojong, 2023). Moreover, teachers frequently encounter structural barriers such as large class sizes, limited resources, and rigid curricula that make consistent differentiation difficult. These constraints highlight the gap between theoretical advocacy and classroom feasibility. Although the empirical evidence consistently supports DI's pedagogical value, further research is needed to investigate how differentiation can be adapted to vocational classrooms, where instructional goals are often practical, time-bound, and skill-oriented. Thus, understanding how teachers negotiate these constraints to implement DI effectively is essential for sustaining its long-term impact in English language teaching.

Vocational Education Context and English Learning Characteristics

English teaching in vocational education settings is shaped by distinctive institutional contexts and learner characteristics. Unlike students in general academic programs, vocational learners enter with highly diverse proficiency levels, learning experiences, and professional aspirations. Their motivation to learn English is typically driven by pragmatic goals—such as workplace communication or professional certification—rather than by intrinsic linguistic interest (Ojong, 2023). Consequently, effective instruction must emphasize communicative competence, contextual application, and job-related language functions rather than abstract grammar or literary content. Studies of Chinese vocational education has shown that aligning English instruction with students' professional fields significantly enhances learning motivation and retention (Jendli & Albarakati, 2024). However, in practice, English teaching in vocational colleges remains dominated by teacher-centered instruction and standardized textbooks that fail to address the heterogeneity of learners. This uniform approach often leads to disengagement among both advanced and struggling students.

Differentiated Instruction offers a promising alternative by allowing flexible grouping, scaffolded materials, and tiered assignments tailored to vocational contexts. For instance, hospitality management students may benefit from role-play simulations related to customer service, while engineering students may engage in technical documentation and report writing exercises. These differentiated practices not only make learning more relevant but also cultivate employability skills aligned with each student's vocational identity. Integrating Vygotsky's ZPD further strengthens this approach, as it encourages teachers to identify learners' potential performance levels and provide targeted support to move them forward. Implementing such practices, however, requires institutional backing in the form of professional development, curriculum flexibility, and assessment

reforms that value progress over uniformity. When these elements align, vocational English classrooms can become dynamic environments where differentiation drives both language growth and occupational competence. Therefore, vocational education not only provides a fertile ground for applying DI but also tests its adaptability and resilience under real-world teaching constraints.

Research Gaps

Despite the growing body of literature on Differentiated Instruction, several significant research gaps persist, particularly concerning its application in vocational education. Many existing studies focus on theoretical or general education contexts, offering limited insight into how DI functions within the specific institutional and cultural realities of vocational colleges. Furthermore, previous research tends to overlook how teacher beliefs, workload, and institutional culture mediate the adoption and sustainability of differentiated practices. In China's vocational system, English is often positioned as a secondary subject, valued primarily for its instrumental utility rather than as an academic discipline. This positioning creates unique pedagogical tensions: teachers must meet standardized curricular requirements while responding to learners' diverse skill levels and occupational goals. Few empirical investigations have explored how teachers balance these competing demands through differentiation.

Additionally, there is a need to understand students' perceptions of differentiated strategies—whether they experience them as supportive, equitable, and motivating, or as inconsistent and confusing. Addressing these questions is crucial for translating DI from theory to sustainable classroom practice. The present study therefore seeks to fill this gap by examining how Differentiated Instruction, informed by the principles of ZPD, can enhance the effectiveness of vocational English teaching in China. Its practical relevance extends beyond academic interest: by identifying effective differentiation strategies, this research provides actionable insights for curriculum designers, teacher educators, and policymakers seeking to modernize vocational language education. Moreover, it underscores the potential of DI to reframe English instruction as a tool for professional empowerment and lifelong learning. In this sense, the study contributes not only to the refinement of DI theory but also to the advancement of equitable, practice-oriented pedagogy in the rapidly evolving landscape of vocational education.

RESEARCH METHODOLOGY

Research Design

This study employed a convergent mixed-methods design to investigate the effects of Differentiated Instruction (DI) on English reading skills in a vocational school context. The convergent design allowed for the simultaneous collection of quantitative and qualitative data, enabling the triangulation of findings to provide a comprehensive understanding of the research problem (Bhana, 2024). The quantitative component utilized a quasi-experimental approach with a pre-test/post-test control group design, which permitted an objective assessment of the efficacy of DI-based reading interventions. By comparing the performance of an experimental group receiving DI with a control group following traditional whole-class instruction, the study was able to isolate the effects of the differentiated instructional strategies on reading comprehension outcomes.

Concurrently, the qualitative component involved semi-structured interviews with a purposively selected subset of students from the experimental group. These interviews were designed to capture rich, detailed insights into students' subjective experiences, perceptions of task difficulty, and their reflections on the usefulness of learning materials and collaborative activities. Integrating the two data strands during the interpretation phase allowed for a more nuanced understanding of both the measurable outcomes and the underlying processes contributing to those outcomes, thereby enhancing the validity and applicability of the

research findings in vocational English classrooms. The mixed-methods design also facilitated the exploration of differential effects across proficiency levels, addressing both the "what" and the "how" of DI's impact.

Participants and Setting

The study was conducted at Jinan No. 2 Vocational Secondary School, a public institution that enrolls students in technical and professional programs. A purposive sample of 80 first-year students was selected from two intact classes, with 40 students assigned to the experimental group and 40 to the control group. Assignment was based on prior semester English performance to ensure comparable proficiency levels between groups, thereby controlling for initial differences that could confound the results. The students ranged in age from 15 to 17 years and represented diverse academic backgrounds, reflecting the heterogeneous nature of vocational education in China. To control for teacher-related effects, a single English teacher with over five years of teaching experience and a demonstrated interest in student-centered pedagogies instructed both groups. This approach ensured that any observed differences in reading outcomes could be attributed primarily to the instructional model rather than teacher variability. Participants' demographic and proficiency information was documented to enable stratified analysis, allowing the study to examine the impact of DI across low, medium, and high proficiency subgroups. This careful sampling and assignment process enhanced the internal validity of the study while maintaining ecological validity within the vocational school context.

Instruments and Intervention

A combination of quantitative and qualitative instruments was employed to gather comprehensive data on reading performance and learner perceptions. For the quantitative component, parallel forms of a reading comprehension test were administered as pre- and post-tests. The tests were derived from the first three units of the standard textbook published by Higher Education Press and comprised three passages accompanied by multiple-choice questions targeting main idea identification, detail location, inference, and vocabulary-in-context. To ensure content validity, the tests were reviewed and validated by two experienced English teachers and piloted on a small sample for clarity and reliability. For the qualitative component, semi-structured interviews were conducted in Chinese with six students selected from the experimental group, representing low, medium, and high proficiency levels as determined by pre-test scores. The interview protocol included open-ended questions about students' experiences with DI lessons, perceived task appropriateness, material suitability, collaborative learning experiences, and overall satisfaction.

The intervention itself was carefully structured to operationalize DI principles. The control group received traditional whole-class instruction, including uniform reading texts, standardized exercises, and teacher-led discussions. In contrast, the experimental group participated in a four-week DI program, consisting of three 45-minute sessions per week. Differentiation strategies included tiered assignments based on pre-test performance, flexible grouping for homogeneous and heterogeneous tasks, scaffolded support such as graphic organizers and vocabulary banks for lower-level learners, and more challenging analytical tasks for advanced learners. Students were occasionally provided with choices in learning activities, such as creating storyboards, writing summaries, or recording podcast-style discussions, aligning assessments with student interests and abilities.

Data Analysis

Quantitative analysis involved multiple stages. Pre-test scores were compared using independent samples t-tests to ensure equivalence between the experimental and control groups at baseline. Within-group progress from pre- to post-test was analyzed using paired samples t-tests for both groups, and independent samples t-tests were used to compare gain scores between groups. Further, stratified analyses were conducted by proficiency level within the experimental group to examine differential effects, highlighting how low, medium, and high proficiency students responded to the DI intervention. For qualitative analysis, interviews were

transcribed verbatim and translated into English. Thematic analysis followed Braun and Clarke's six-phase framework, including familiarization with the data, generating initial codes, identifying themes, reviewing and refining themes, defining and naming themes, and producing the final report (Ahmed et al., 2025). Credibility and trustworthiness were enhanced through peer debriefing and member checking. The integration of quantitative and qualitative results provided a holistic understanding of DI's impact on reading skills, capturing both measurable outcomes and learners' subjective experiences. This mixed-methods analytical approach ensured that the study not only assessed performance gains but also illuminated the mechanisms through which DI influenced learner engagement, confidence, and comprehension in a vocational English classroom setting.

RESULT AND DISCUSSION

Group Equivalence and Baseline Performance

Prior to the intervention, establishing equivalence between the experimental and control groups was essential to ensure that subsequent differences in outcomes could be attributed to the instructional approach rather than pre-existing disparities. An independent samples t-test on pre-test scores revealed no significant difference between the control group (M = 69.39, SD = 4.61) and the experimental group (M = 69.59, SD = 4.47), t(78) = -0.197, p = .844. Table 1 presents these baseline data, showing that both groups started at comparable proficiency levels.

Table 1: Pre-test scores showing equivalence

Group	N	Pre-test Mean	SD	t-value	p-value
Control	40	69.39	4.61	-0.197	.844
Experimental	40	69.59	4.47	—	—

This equivalence is particularly important in vocational education contexts, where heterogeneous backgrounds and prior academic experiences often result in wide proficiency gaps (Bell Sebastián et al., 2025). By ensuring similar starting points, the study mitigates confounding factors, allowing a clearer assessment of the differentiated instruction (DI) intervention. Moreover, establishing baseline comparability lends credibility to subsequent findings, especially when evaluating differential effects across low, medium, and high proficiency learners. This step reinforces the study's methodological rigor and aligns with best practices in quasi-experimental research design (Rausch et al., 2024). Practically, the equivalence demonstrates that DI can be tested in real-world vocational classrooms without selective bias, enhancing the external validity of the results.

Overall Effectiveness of Differentiated Instruction

The intervention produced significant gains in reading comprehension for both the control and experimental groups, with the latter showing substantially higher improvement. Table 2 summarizes pre-test, post-test, and gain scores.

Table 2: re-test and post-test scores and gain scores

Group		N	Pre-test Mean (SD)	Post-test Mean (SD)	Gain	t-value	p-value
Control		40	69.39 (4.61)	73.75 (4.74)	4.36	-4.176	<.001
Experimental		40	69.59 (4.47)	75.63 (4.92)	6.04	-6.120	<.001

The experimental group's greater gain (6.04 points vs. 4.36 points for the control) indicates that DI provides a measurable advantage over traditional, whole-class teaching methods. This aligns with international findings that differentiation enhances learning outcomes by targeting students' readiness, interests, and learning profiles (Gheyssens et al., 2022). Beyond raw scores, DI fosters active engagement through tiered assignments, scaffolded supports, and flexible groupings, which collectively reduce anxiety and increase learner confidence. For vocational students, these improvements have practical implications: higher reading proficiency enhances comprehension of technical manuals, safety protocols, and industry-specific texts, directly impacting future employability. The findings emphasize that DI is not merely a pedagogical novelty but a practical tool for addressing diverse learner needs in vocational classrooms.

Differential Effects by Proficiency Level

Stratified analysis within the experimental group highlighted pronounced differences in outcomes based on students' initial proficiency. Low-proficiency students achieved the largest gains, improving from 63.00 (SD = 1.69) to 75.88 (SD = 6.53), $t(7) = -6.071$, $p = .001$. Medium-level learners also showed substantial improvement (70.35 to 75.28, $t(23) = -4.823$, $p < .001$), whereas high-proficiency students displayed only modest gains (76.00 to 77.10, $t(7) = -2.269$, $p = .086$). Table 3 presents these findings.

Table 3: Experimental group performance by proficiency level

Proficiency Level	N	Pre-test Mean (SD)	Post-test Mean (SD)	Gain	t-value	p-value
Low	8	63.00 (1.69)	75.88 (6.53)	12.88	-6.071	.001
Medium	24	70.35 (2.67)	75.28 (4.86)	4.93	-4.823	<.001
High	8	76.00 (1.17)	77.10 (2.07)	1.10	-2.269	.086

These results suggest that DI is particularly beneficial for students who might otherwise struggle in traditional classrooms, aligning tasks with their Zone of Proximal Development (ZPD) and providing scaffolded support. Medium-level learners also benefit from increased challenge and collaborative learning opportunities. However, high-proficiency learners' limited gains reveal the need for upward differentiation and enrichment activities to maintain engagement. Practically, this finding underscores that DI is most effective when designed to balance accessibility for struggling learners and intellectual challenge for advanced students.

Qualitative Insights: Task Appropriateness, Materials, and Collaboration

Thematic analysis of semi-structured interviews provided insights into the mechanisms behind quantitative gains. Low and medium-level students emphasized that task difficulty aligned with their ZPD, fostering confidence and reducing learning anxiety. Chen Yu (Low) noted, "With short passages and easy words, I could understand most of the story." Medium-level learners appreciated tasks that required active thinking without being overwhelming. Collaborative learning was valued across all proficiency levels: low-level students felt supported, medium-level students benefited from idea exchange, and high-level students gained from peer-teaching roles. Appropriately leveled materials facilitated comprehension, though high-level learners expressed a desire for more complex and intellectually stimulating tasks.

The qualitative findings illustrate that DI enhances learning not only through measurable gains but also by promoting a positive and inclusive classroom culture. The combination of tiered tasks, scaffolded supports, and structured collaboration contributes to both skill development and increased learner motivation, demonstrating DI's holistic impact. For educators, these insights emphasize the importance of carefully designing

differentiated activities that cater to varied proficiency levels while fostering collaborative engagement.

Unmet Needs and Implications for Practice

Despite the overall success of DI, high-proficiency learners reported unmet advanced needs. Students like Liu Qin expressed a desire for open-ended questions and higher-order thinking tasks to maintain engagement. These findings highlight a critical caveat: effective DI must include vertical differentiation to challenge advanced learners while still supporting struggling students.

Integrating quantitative and qualitative evidence, it is clear that DI significantly improves reading comprehension, particularly for low- and medium-level students, while fostering confidence, collaboration, and motivation. For vocational education practitioners, this underscores the need for teacher training in DI strategies, development of tiered materials, and systematic implementation of scaffolded learning and flexible grouping. Successfully balancing accessibility and challenge ensures that DI is inclusive, equitable, and impactful across the full spectrum of learner proficiency.

CONCLUSION

This study investigated the effectiveness of Differentiated Instruction (DI) in enhancing English reading skills among first-year vocational school students in Jinan, China. The integration of quantitative and qualitative methods allowed for a comprehensive understanding of how DI impacts students across varying proficiency levels. The findings provide clear evidence that DI is a potent pedagogical strategy in mixed-ability vocational classrooms, offering both measurable learning gains and improvements in learner engagement, confidence, and collaboration.

The quantitative data indicated that students in the experimental group, who received DI-based instruction, achieved significantly greater improvement in reading comprehension compared to the control group receiving traditional instruction. Stratified analysis revealed that low-proficiency students benefited the most, showing dramatic gains in comprehension, vocabulary acquisition, and task completion confidence. Medium-proficiency students also demonstrated significant improvement, reinforcing DI's broad applicability for the majority of learners. High-proficiency students experienced modest gains, which were marginally significant, highlighting that standard DI practices may inadequately challenge advanced learners unless extended with vertical differentiation.

Qualitative analysis provided a nuanced understanding of these outcomes. Low- and medium-level students reported increased confidence and reduced anxiety due to tasks aligned with their Zone of Proximal Development (Vygotsky, 1978). Collaborative learning emerged as a universally valued component, fostering peer support, idea exchange, and peer-teaching opportunities. Appropriately leveled materials facilitated comprehension for most learners, while high-proficiency students voiced the need for more intellectually stimulating tasks, emphasizing the necessity of balancing accessibility with challenge. Collectively, these findings confirm that DI is not merely a remediation tool but a comprehensive instructional philosophy that addresses cognitive, motivational, and social dimensions of learning.

For educators, the study underscores the importance of robust DI implementation. Teachers should receive targeted training in designing tiered tasks, scaffolding instruction, and structuring flexible grouping that accommodates all proficiency levels. Incorporating choice-based activities and differentiated assessments can further enhance engagement and mastery. Curriculum developers and educational authorities should provide leveled reading resources and differentiated lesson plans aligned with vocational training requirements, reducing preparation burdens and ensuring consistency in DI practice. School administrators should support

professional development, facilitate team teaching, and consider smaller instructional groups to enable effective differentiation. These measures collectively create an inclusive and challenging learning environment, promoting equitable access to learning and supporting vocational students' academic and professional development.

Several limitations warrant consideration. The study was conducted in a single vocational school in Jinan, which may affect the generalizability of the findings to other vocational contexts in China or internationally. The intervention lasted only four weeks, capturing short-term gains but not long-term retention or transfer of reading skills. Additionally, the study focused exclusively on reading comprehension; other English language domains such as writing, speaking, and listening remain unexplored. The high-proficiency group's limited improvement suggests that further refinement in task design and differentiation strategies is necessary to fully meet the needs of advanced learners. Future studies should examine the long-term effects of DI on learner motivation, self-efficacy, and sustained academic performance. Investigating the impact of DI on additional language skills—such as writing, listening, and speaking—would provide a more comprehensive view of its efficacy. Research could also explore the development and evaluation of specific upward differentiation strategies to engage high-proficiency learners effectively. Finally, scaling up DI interventions across multiple schools or districts would yield insights into implementation challenges, sustainability, and systemic impact, informing policy and practice in vocational English education.

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