The Model to Enhance English Reading Ability of Chinese High School Students in Linyi, Shandong

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Abstract

Background and Aim: English reading remains a challenge for many Chinese high school students due to varied proficiency levels and rigid teaching methods. Stratified homework, which differentiates tasks based on student ability, may help address these issues. This study examines its effectiveness in improving reading skills—specifically vocabulary, comprehension, critical thinking, and fluency—among Grade 10 students in Linyi, Shandong.

Materials and Methods: Using a quasi-experimental mixed-methods design, 80 students were divided into experimental and control groups. Over 22 weeks, the experimental group received homework tailored to three proficiency levels, while the control group followed standard assignments. Pre- and post-tests assessed vocabulary, reading speed, comprehension, and critical thinking. Statistical analysis included t-tests and ANOVA. Qualitative data were collected from teacher interviews and student surveys.

Results: The experimental group showed a 24.3% improvement in reading scores, compared to 6.1% in the control group. They also gained more in vocabulary (+315 words vs. +127) and reading speed (+10.5 vs. +3.4 words/min). Students reported higher engagement and reduced frustration; teachers noted greater participation and confidence, especially among lower-level learners.

Conclusion: Stratified homework effectively supports diverse learners by aligning tasks with ability levels and cognitive goals. It enhances key reading skills, increases motivation, and reduces learning barriers. This model offers a practical solution for improving reading instruction and aligns with China's "Double Reduction" policy, offering guidance for future curriculum reform.

Keywords: Stratified Homework; English Reading Ability; Chinese High School Students; Vocabulary Acquisition; Reading Comprehension; Differentiated Instruction; Bloom's Taxonomy

Introduction

The ongoing progress of urbanization, along with enhanced ecological civilization initiatives, makes landscape design essential for improving urban spaces and public health by creating visually attractive environments. It merges aesthetic elements with functional design while
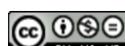
functioning as a medium for urban culture expression and ecological consciousness, along with historical preservation (Zhao & He, 2024). The national priorities for sustainable development and educational modernization require enhancements in vocational education through digital innovation which are guided by the Outline of the National Medium- and Long-term Education Reform and Development Plan (2010–2020) and the 14th Five-Year Plan for Digital Economy Development (Ministry of Education of the People's Republic of China, 2010; National Development and Reform Commission, 2021). Chinese universities face ongoing obstacles in landscape design education despite policy initiatives, which include antiquated teaching methods and insufficient digital tool integration alongside low student engagement levels. Traditional teaching methods struggle to develop interdisciplinary design professionals because digital tools like CAD, GIS, and VR have become essential in the design industry (Jin & Yang, 2021; Jiawei & Mokmin, 2023). The field of landscape design education requires immediate development and application of structured project-based teaching models that integrate digital technologies to maintain educational relevance and quality.

The current research focuses on landscape design educational programs across universities in Hubei Province as a response to these challenges. The research undertakes a thorough evaluation of the requirements and views of students and faculty, alongside academic administrators, to establish a training program management model that combines practical application with theoretical foundations. The research starts with an examination of current teaching methods to pinpoint essential areas that need enhancement. The study develops an integrated teaching management framework, which it evaluates for effectiveness through the use of empirical methods, including literature review, structured questionnaires, and structural equation modeling (SEM). The comprehensive approach maintains strict academic standards while preserving contextual applicability. The new model offers considerable promise for improving educational planning through optimized curriculum design and better resource distribution, which results in strategically organized teaching methods and more durable educational achievements. The model resolves systemic shortcomings in landscape design education and outlines evidence-based reform strategies. The framework delivers specific recommendations to educational leaders that empower them to make decisions based on data that promote innovative teaching methods and quality enhancement.

This study holds significant theoretical and practical value. Theoretically, it integrates digital technology, project management theory, and landscape design education, offering a new research perspective and methodological framework for curriculum innovation. Practically, the proposed project management model strengthens the systematic implementation and controllability of courses, enhances teaching efficiency, and improves student learning outcomes. Furthermore, it promotes school-enterprise collaboration by aligning talent training with industry needs. The research findings not only serve as a reference model for similar universities in Hubei and across

China, but also contribute to the development of a forward-looking talent cultivation system for landscape design. As universities increasingly prioritize education quality, this study provides a strategic tool for refining curriculum systems, enhancing teaching governance, and ensuring the efficient allocation of educational resources—ultimately facilitating the alignment between talent supply and industry demand, and supporting the national strategy of building an education powerhouse.

Objectives

This study aims to evaluate the effectiveness of stratified homework in improving English reading ability among Chinese high school students. Aligned with the study's title and findings, the objectives are structured to reflect both practical impact and theoretical contribution. Specifically, the study seeks to:

Assess the Effectiveness of Stratified Homework on English Reading Skills.

Literature review

The effectiveness of educational strategies, particularly in the field of English language acquisition, has been an area of considerable academic inquiry. Within this context, stratified and differentiated instructional approaches have emerged as significant tools for addressing the diverse proficiency levels of students. This literature review critically examines key research studies related to homework design, Bloom's Taxonomy, differentiated instruction, and their implications for enhancing English reading ability, particularly in the Chinese educational context. It also explores the cultural and policy-related factors influencing these approaches, offering a comprehensive foundation for this study.

1. Theoretical Foundations: Bloom's Taxonomy and Cognitive Skill Development

Bloom's Taxonomy continues to serve as a cornerstone in educational theory, offering a hierarchical framework for understanding cognitive skill development. Its application has been instrumental in designing differentiated instructional strategies that cater to varying levels of student ability. Benjelloun and Allame (2019) demonstrated the efficacy of Bloom's Taxonomy in developing Moroccan children's vocabulary and critical thinking skills, highlighting its relevance in fostering higher-order cognitive processes like analysis, synthesis, and evaluation. Similarly, Pikhart and Klimova (2019) emphasized its utility in blended learning environments, where the taxonomy facilitated more structured and effective instructional design, leading to enhanced student engagement and satisfaction.

In the Chinese context, Bloom's Taxonomy provides a theoretical foundation for implementing stratified homework, as it enables educators to design tasks that progressively build students' cognitive and linguistic capabilities. By aligning assignments with the taxonomy's levels,
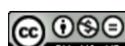
teachers can ensure that students at different proficiency levels are appropriately challenged, promoting both academic growth and critical thinking.

2. Differentiated Homework: A Response to Diverse Learning Needs

Differentiated homework has gained significant attention as a pedagogical strategy that tailors learning tasks to meet the unique needs of students. Differentiated homework aligns with the principles of student-centered learning, as advocated by the English Curriculum Standards for Compulsory Education in China (Ministry of Education of the People's Republic of China, 2022). By recognizing individual differences in linguistic ability, such approaches create more inclusive learning environments, ensuring that all students have equitable opportunities to achieve their academic potential.

3. The Role of Homework Design in Enhancing Learning Outcomes

Homework design has been the subject of extensive research, with scholars emphasizing its critical role in reinforcing classroom learning. Cooper and Valentine (2020) argued that the effectiveness of homework lies not in its quantity but in its quality, emphasizing the need for meaningful and purposeful assignments. This perspective is particularly relevant in the context of Chinese education, where traditional homework practices often prioritize rote memorization over critical thinking and application.

The integration of Bloom's Taxonomy into homework design further enhances its effectiveness. Hui, Mansoor, and Sibbald (2020) demonstrated that simulation learning objectives grounded in Bloom's Taxonomy significantly improve educational outcomes by promoting active engagement and deeper comprehension. Such insights highlight the potential of stratified homework to transform traditional practices by fostering a more holistic approach to learning.

4. Cultural and Policy Contexts: Challenges and Opportunities

The implementation of stratified homework in China must be understood within the broader cultural and policy frameworks that shape the country's educational landscape. The "Double Reduction Policy," introduced to alleviate academic pressure on students, has significantly influenced homework practices. Chen (2023) examined the policy's impact on English homework in primary schools, finding that it encouraged more balanced and meaningful assignments. However, the study also noted challenges in implementation, particularly in aligning tasks with students' diverse needs.

Wan Xin (2022) explored the phenomenon of "involution" in Chinese education, which refers to the intense competition and academic pressure faced by students. This cultural context underscores the importance of strategies like stratified homework, which can reduce cognitive overload by providing appropriately challenging tasks. By focusing on quality rather than quantity, stratified homework aligns with the policy's goals, fostering both academic achievement and student well-being.

5. Cross-Cultural Insights and Global Comparisons

Cross-cultural studies offer valuable insights into the effectiveness of differentiated instructional strategies. Nakamura et al. (2020) conducted a comparative analysis of children's time use and educational achievement in China, Japan, and the United States. The study highlighted the role of parental involvement and socio-economic status in shaping academic outcomes, emphasizing the need for context-specific approaches to homework design.

6. Research Gaps and Future Directions

While existing studies provide a robust foundation for understanding the impact of differentiated and stratified homework, several gaps remain. For instance, Wenling (2022) highlighted the need for more empirical research on the long-term effects of stratified homework in improving English reading proficiency. Additionally, there is limited research on how stratified homework influences students' critical thinking and problem-solving skills, particularly in non-Western contexts.

Further studies are also needed to explore the role of technology in facilitating stratified homework. Digital platforms, which allow for adaptive learning and instant feedback, could play a significant role in enhancing the effectiveness of differentiated assignments. This area remains underexplored and represents a promising direction for future research.

7. Synthesis and Implications

The literature review highlights the transformative potential of stratified homework in addressing the diverse needs of students and enhancing their English reading abilities. By integrating theoretical frameworks like Bloom's Taxonomy with practical strategies for differentiated instruction, educators can create more inclusive and effective learning environments. However, the successful implementation of these strategies requires careful consideration of cultural, policy, and contextual factors.

The insights gained from this review will inform the development of a hierarchical model of stratified homework, aimed at fostering both academic achievement and critical thinking among high school students in Linyi, Shandong. This study seeks to bridge the gap between theory and practice, contributing to the broader discourse on educational innovation and equity.

In conclusion, the literature underscores the importance of stratified homework as a tool for transforming English language education. By addressing existing challenges and leveraging best practices, educators can create a more equitable and effective system that prepares students for both academic and real-world success.

Conceptual Framework

This study is anchored in differentiated instruction and Bloom's Taxonomy to explore the impact of stratified homework on improving English reading proficiency. Differentiated instruction ensures that tasks are tailored to students' varying proficiency levels, fostering equitable learning opportunities. Bloom's Taxonomy provides the hierarchical structure for designing assignments,

progressing from foundational skills such as vocabulary acquisition to higher-order tasks like critical analysis and evaluation.

The stratified homework model aligns tasks with students' cognitive abilities, optimizing cognitive load by balancing task complexity. Foundational learners focus on basic comprehension, intermediate learners on application and analysis, and advanced learners on critical thinking and synthesis. This approach ensures engagement, reduces frustration, and promotes gradual skill development.

By integrating these theories, the framework addresses the diverse needs of students, enabling equitable progress in English reading proficiency. The framework is operationalized through a quasi-experimental design, using pre-test and post-test assessments to measure improvement. This conceptual foundation not only supports academic growth but also fosters inclusivity and effectiveness in language learning.

Methodology

This study adopts a mixed-methods, quasi-experimental design to evaluate the impact of stratified homework on English reading proficiency among Grade 10 students in Linyi, Shandong.

1. Research Design

Two groups were involved: an experimental group receiving stratified homework based on student ability levels (A, B, C), and a control group using traditional homework. Pre- and post-tests assessed gains in vocabulary, reading comprehension, critical thinking, and fluency. Qualitative data were collected via interviews and surveys to complement quantitative findings.

2. Participants and Setting

Eighty students from Linyi Alice High School were divided equally into the two groups. Both were taught by the same teacher to control for instructional bias. Student stratification was based on initial reading test scores.

3. Stratified Homework Model

Homework was differentiated into three levels:

Level A (Advanced): Analysis, synthesis, and extended reading.

Level B (Intermediate): Comprehension and vocabulary application.

Level C (Foundational): Word recognition, sentence reading, and basic Q&A.

Design followed Bloom's Taxonomy to match tasks with cognitive levels.

4. Research Instruments and Procedures

Pre-Test: All students took a standardized English reading test measuring vocabulary, speed, comprehension, and critical thinking.

Homework Intervention: Over 22 weeks, the experimental group received differentiated tasks aligned with their stratified levels; the control group received identical traditional assignments.

Post-Test: The same test was administered to measure improvements.

Surveys: Distributed to all students post-intervention to collect feedback on engagement and motivation.

Semi-structured interviews: Conducted with 15 teachers and selected students to explore perceptions and classroom implementation.

5. Data Analysis

Quantitative:

Paired t-tests assessed gains within groups.

Independent t-tests compared outcomes between groups.

ANOVA evaluated differences among proficiency levels.

Qualitative:

Thematic analysis identified student and teacher insights.

Content analysis explored practical issues in implementation.

6. Ethical Considerations

Informed consent was obtained from students and guardians. Anonymity and confidentiality were ensured. The study adhered to ethical guidelines from Shinawatra University.

7. Limitations

Sample Size: Limited generalizability, mitigated by student diversity.

Duration: A 22-week window may not reflect long-term effects.

Teacher Bias: Single-teacher design may influence outcomes, addressed via standardized materials.

8. Justification

The mixed-methods design enables both statistical validation and contextual understanding, offering a comprehensive evaluation of stratified homework in real classroom settings.

Results

The findings of this study are presented in two parts: quantitative data analysis to evaluate the impact of stratified homework on students' English reading proficiency and qualitative insights from teacher and student feedback. The results demonstrate a significant improvement in reading performance among students in the experimental group, highlighting the effectiveness of the stratified homework model.

1. Quantitative Results

1.1 Pre-Test and Post-Test Comparison

The pre-test and post-test scores of students in both the experimental and control groups were analyzed to assess the impact of stratified homework. Table 1 summarizes the average reading scores of both groups before and after the intervention.

Table 1 Comparison of Pre-Test and Post-Test Scores

Group	Pre-Test Average Score	Post-Test Average Score	Improvement (%)
Experimental	23	28.6	24.30%
Control	22.8	24.2	6.10%

The experimental group showed a significant improvement of 24.3% in their post-test scores, compared to only 6.1% in the control group. This indicates that stratified homework had a meaningful impact on improving reading proficiency.

1.2 Monthly Progress in Reading Scores

Throughout the 22-week intervention, reading scores were tracked across five monthly assessments. Table 2 and Figure 1 illustrate the average scores for each group over time.

Table 2 Monthly Reading Scores

Group	Initial Score	Month 1	Month 2	Month 3	Month 4	Month 5
Experimental	23	24.7	25.8	27.3	28.1	28.6
Control	22.8	23.1	23.5	23.9	24.1	24.2

The experimental group exhibited consistent growth across all months, with notable acceleration in the second half of the intervention. The control group, however, showed only marginal improvements.

1.3 Vocabulary and Reading Speed

Vocabulary growth and reading speed were also analyzed as key indicators of reading proficiency. Table 3 presents the changes in vocabulary size and reading speed for both groups.

Table 3 Vocabulary and Reading Speed Growth

Group	Vocabulary Growth (Words)	Reading Speed Increase (Words/Minute)
Experimental	315	10.5
Control	127	3.4

The experimental group demonstrated a significantly greater increase in both vocabulary size and reading speed compared to the control group, further affirming the effectiveness of the stratified homework model.

2. Qualitative Results

2.1 Teacher Feedback

Interviews with 15 teachers revealed that stratified homework improved student engagement and reduced frustration, particularly for lower-proficiency students. Teachers noted that students in the experimental group were more motivated and displayed greater confidence in reading tasks.

2.2 Student Feedback

Survey results indicated that 67% of students in the experimental group found the stratified homework format more engaging and manageable than traditional assignments. Many students reported feeling a sense of accomplishment as tasks aligned with their proficiency levels.

3. Summary of Results

The findings demonstrate that stratified homework significantly enhances English reading proficiency. The experimental group outperformed the control group in reading scores, vocabulary growth, and reading speed. Both qualitative and quantitative data underscore the value of tailoring assignments to individual student needs, providing a strong foundation for implementing differentiated instruction in English education.

Discussion

The research demonstrates that stratified homework significantly improves English reading skills in Chinese high school students. Students in the experimental group who were given reading assignments adjusted to their reading levels demonstrated superior performance compared to the control group in vocabulary growth, reading speed, and comprehension tests. According to Bloom's Taxonomy, hierarchical task design enhances cognitive development, which aligns with these study results as demonstrated by Benjelloun & Allame (2019). The model facilitated meaningful learning and skill advancement by matching tasks with students' existing abilities and progressively enhancing task difficulty.

Students in the experimental group demonstrated a 24.3% increase in reading test scores while the control group showed only a 6.1% improvement. The distinction illustrates the educational importance of tailoring tasks to individual student requirements, which educational research frequently endorses (Cooper & Valentine, 2020). Students who received stratified homework displayed notable improvements in vocabulary development and reading speed, which serve as essential markers of reading fluency. The progress shown by students demonstrates better academic results while indicating increased reading confidence and self-directed learning abilities, which benefits lower-level students who typically face challenges in standard classroom settings (Wang & Guthrie, 2016).

According to teacher interviews, students exhibited greater participation and self-assurance in foundational reading groups. The stratified tasks enabled teachers to reduce frustration and boost student motivation, which matches Chen's (2023) findings about China's "Double Reduction Policy" promoting fair and valuable homework practices. The study results back this policy approach by showing how customized homework assignments reduce student stress and

improve learning results. Curriculum designers and policymakers can use this approach to create a scalable model that supports the implementation of quality-focused education policies.

Student feedback also reinforced the model's effectiveness. Students in the experimental group reported greater engagement and satisfaction with stratified homework methods than traditional approaches, according to 67% of the participants. Hui, Mansoor, and Sibbald's (2020) research showed that tasks based on cognitive theory, which have a structured approach, help students achieve better understanding and motivation. The stratified model resolves the educational issue known as "involution," which describes intense academic competition and pressure in Chinese schools by establishing suitable challenge levels while supporting student well-being (Wan Xin, 2022).

Although the research shows positive results, it recognizes specific limitations that will direct the direction of future studies. This 22-week program shows immediate advantages yet fails to evaluate how skills persist over time or transfer across different contexts. Additional research that follows participants over time must be conducted to evaluate lasting effects. Although the single-teacher design achieved consistent instruction delivery, it also posed the risk of subjective bias. Implementing future studies with various instructors across different settings will improve research applicability while decreasing the likelihood of confounding variables (Wenling, 2022).

The research presents substantial evidence for differentiated instruction in EFL environments through its empirical validation of stratified homework as an effective approach for meeting diverse student needs. The integration of Bloom's Taxonomy into homework development alongside student feedback enables this model to advance reading proficiency while supporting inclusive and equitable educational practices. The model's alignment with national educational reforms strengthens its relevance while offering schools a practical route to update their English courses.

Conclusion

This study demonstrates the significant potential of stratified homework in enhancing English reading proficiency among high school students by addressing diverse learning needs through differentiated tasks. By aligning assignments with students' proficiency levels and incorporating principles from Bloom's Taxonomy, the stratified model fosters measurable improvements in vocabulary, reading comprehension, and critical thinking skills while promoting engagement and reducing cognitive overload. The findings highlight the value of tailored instructional strategies in achieving equitable learning outcomes, aligning with contemporary educational goals and policies such as China's "Double Reduction Policy." As a practical and scalable approach, stratified homework offers a promising pathway for improving English language education, providing both theoretical and practical insights for educators and policymakers seeking to create inclusive and effective learning environments.\

Recommendation

Based on the findings of this study, several comprehensive recommendations are proposed to enhance the implementation and long-term effectiveness of stratified homework in English reading instruction.

Firstly, schools should integrate stratified homework as a standard practice within the English curriculum. The research demonstrates that this approach significantly improves vocabulary acquisition, reading speed, and comprehension across varying proficiency levels. By aligning tasks with students' abilities, stratified homework fosters academic growth, engagement, and learner confidence, ultimately enhancing instructional outcomes.

Secondly, professional development for teachers is essential to ensure the effective design and delivery of stratified assignments. Training programs should focus on differentiated instruction techniques, particularly those informed by Bloom's Taxonomy, equipping teachers with the skills necessary to stratify homework tasks and continuously assess student progress. Given that teachers in the study reported increased preparation time as a challenge, a third recommendation is the integration of digital tools and adaptive learning platforms. These technologies can streamline the development, distribution, and evaluation of differentiated tasks, thereby improving efficiency and reducing teacher workload.

Regular monitoring and adjustment of homework content based on students' evolving proficiency levels is also recommended. The 22-week intervention in this study showed sustained progress, highlighting the importance of dynamic homework design that evolves with student development. Additionally, policymakers should consider incorporating stratified homework into broader educational reform efforts, especially under China's "Double Reduction Policy." This model not only addresses concerns of academic overload but also enhances learning quality and equity, supporting national education goals.

Finally, it is crucial to incorporate student feedback into the refinement of stratified homework practices. As reflected in the study, a majority of students found stratified tasks both manageable and motivating. By actively involving students in evaluating homework content and difficulty, educators can further optimize task relevance and improve learner satisfaction. Together, these recommendations provide a practical roadmap for leveraging stratified homework as an inclusive and effective instructional strategy in diverse classroom settings.

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