

# **A Research on Needs Analysis on English Speaking Instruction in the Stratified Teaching in Chinese Higher Vocational College in the Context of Digital Intelligence**

**Xiaolian Duan and Prannapha Modehiran**

Assumption University, Thailand

Corresponding Author, Email: 83373810@qq.com

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## **Abstract**

This research investigates the instructional needs for English-speaking courses in Chinese higher vocational colleges, particularly in the context of stratified teaching and digital intelligence. A detailed needs analysis conducted at Shandong Vocational College of Science and Technology (SVCST) reveals significant insights into students' attitudes, preferences, and challenges in learning English speaking skills. The study highlights the demand for personalized, technology-enhanced instructional approaches that cater to varying student proficiency levels. The findings offer actionable recommendations for educators and policymakers to optimize English speaking instruction in vocational education settings.

**Keywords:** English Speaking Instruction; Needs Analysis; Stratified Teaching; Digital Intelligence; Vocational Education

## **Introduction**

### **Global Importance of English Language Proficiency**

In today's globalized economy, English proficiency is increasingly recognized as a key driver for economic and professional success. For students in Chinese higher vocational colleges, mastering English speaking skills is not only crucial for their academic achievements but also for their future careers, especially in industries where English is the lingua franca.

### **Challenges in English Language Learning**

Despite its importance, many vocational students in China face significant challenges in acquiring effective English-speaking skills. These challenges are often compounded by the traditional teaching methods that emphasize rote memorization over practical language use, leading to a disconnect between students' knowledge of English and their ability to use it in real-world situations.

### **The Role of Digital Intelligence in Education**

The advent of digital intelligence presents new opportunities for enhancing language education. Technologies such as artificial intelligence, big data, and cloud computing can be leveraged to create more personalized and adaptive learning experiences. In the context of stratified teaching, these technologies offer the potential to address the diverse needs of students by providing tailored instruction that aligns with their proficiency levels.

### **Purpose and Objectives of the Study**

This study aims to conduct a comprehensive needs analysis to identify the specific instructional needs for English speaking courses in Chinese higher vocational colleges. The research focuses on how stratified teaching, supported by digital intelligence, can be used to enhance the effectiveness of English-speaking instruction.

## **Literature Review**

### **Theoretical Perspectives on English Speaking Instruction**

This section reviews key theories and approaches relevant to English speaking instruction, including Communicative Language Teaching (CLT) and Task-Based Language Teaching (TBLT). These methodologies emphasize the importance of real-world communication and active language use, which are critical in addressing the gaps in traditional teaching methods.

### **Stratified Teaching in Vocational Education**

Stratified teaching involves grouping students based on their proficiency levels and providing differentiated instruction tailored to these groups. This approach has been widely adopted in vocational education in China to address the diverse learning needs of students. The literature suggests that stratified teaching can be particularly effective in improving language skills, as it allows educators to focus on specific challenges faced by different student groups.

### **Digital Intelligence and Its Impact on Education**

Digital intelligence, encompassing technologies such as AI and big data, plays a transformative role in modern education. These technologies enable the creation of smart learning environments where instructional content can be dynamically adapted to meet the needs of individual learners. The integration of digital intelligence in language instruction offers the potential to enhance the learning experience by providing real-time feedback, personalized learning paths, and interactive learning environments.

### **Challenges in Developing English Speaking Skills**

Previous research highlights several challenges in developing English speaking skills, particularly in the context of English as a Foreign Language (EFL) learning. Common obstacles include language anxiety, lack of practice opportunities, and insufficient feedback. This section also discusses the role of affective factors, such as motivation and confidence, in language learning, and how these can be addressed through targeted instructional strategies.

## **Research Methodology**

### **Research Design**

The study adopts a mixed-methods research design, combining quantitative and qualitative approaches to provide a comprehensive understanding of the instructional needs. The research is conducted in three phases: needs analysis, instructional design, and evaluation of instructional effectiveness.

### **Participants and Sampling**

The participants of the study are first-year students from the Textile and Clothing department at SVCST. A total of 498 students were surveyed for the needs analysis, and 99 students participated in the experimental phase of the study. The sample was selected using convenience sampling, ensuring accessibility and relevance to the research objectives.

### **Data Collection Instruments**

Data was collected using a combination of questionnaires, pre- and post-tests, and semi-structured interviews. The questionnaire was designed to assess students' needs and preferences in English speaking instruction, while the pre- and post-tests were used to measure the effectiveness of the instructional interventions. The semi-structured interviews provided qualitative insights into students' experiences and perspectives.

### Data Analysis

Quantitative data from the questionnaires and tests were analyzed using statistical methods to identify patterns and correlations. Qualitative data from the interviews were analyzed thematically, with key themes and insights extracted to complement the quantitative findings.

## Research Results

### Student Attitudes and Preferences

The results indicate that students at SVCST recognize the importance of improving their English-speaking skills for career advancement. However, they also express frustration with traditional teaching methods, which they feel do not adequately prepare them for real-world communication. The survey revealed the following preferences:

**Table 1: Student Preferences for Learning Methods**

Learning Method	Number of Students	Percentage (%)
Digital Tools (e.g., language apps)	389	78%
Group Discussions	279	56%
Role Plays	234	47%
Traditional Lectures	125	25%
Self-paced Learning	198	40%

### Challenges in English Speaking Instruction

The study identifies several challenges faced by students, particularly in speaking English fluently and confidently. These challenges are categorized and quantified as follows:

**Table 2: Challenges in English Speaking Skills Development**

Challenge	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Lack of Confidence	215	150	72	35	26
Fear of Making Mistakes	200	173	78	32	15
Insufficient Practice Opportunities	278	154	46	12	8
Difficulty Understanding Native Speakers	142	192	96	40	28
Anxiety During Speaking Activities	198	214	62	17	7

Proficiency Levels and Improvement Post-Intervention

The research implemented a stratified teaching approach with digital intelligence tools to cater to different proficiency levels. The pre- and post-intervention tests showed significant improvements across all groups:

Table 3: English Speaking Proficiency Improvement (Pre- and Post-Intervention)

Proficiency Level	Pre-Intervention Average Score	Post-Intervention Average Score	Improvement (%)
Level A (Advanced)	70.5	82.3	16.7%
Level B (Intermediate)	55.8	68.4	22.6%
Level C (Beginner)	42.1	59.3	40.9%

Effectiveness of Different Instructional Approaches

Different instructional methods were evaluated based on their effectiveness in improving students' English-speaking skills. The effectiveness was measured through both student feedback and performance metrics:

Table 4: Effectiveness of Instructional Methods

Instructional Method	Average Effectiveness Score (1-5)	Student Satisfaction (%)
Stratified Teaching	4.8	92%
Integration of Digital Tools	4.5	88%
Interactive Group Activities	4.2	85%
Traditional Lectures	3.1	65%
Real-Life Scenario Practices	4.4	89%

Correlations Between Challenges and Performance

The study also analyzed the correlations between the challenges students faced and their performance improvements post-intervention. It was found that addressing specific challenges led to greater improvements:

**Table 5: Correlation Between Challenges and Performance Improvement**

Challenge	Correlation with Improvement (r)
Lack of Confidence	0.68
Fear of Making Mistakes	0.62
Insufficient Practice Opportunities	0.74
Difficulty Understanding Native Speakers	0.55
Anxiety During Speaking Activities	0.70

## Discussion

### Impact of Stratified Teaching on English Speaking Proficiency

The stratified teaching approach, supported by digital intelligence tools, showed a significant impact on student outcomes. The improvements were particularly pronounced among lower proficiency students, who benefited from tailored instruction and targeted practice.

### Role of Digital Tools in Enhancing Language Learning

Digital tools facilitated a more personalized learning experience, allowing students to practice at their own pace and receive instant feedback. This approach was highly effective in improving speaking proficiency across all proficiency levels.

### Challenges and Solutions in Implementing Stratified Teaching

While the benefits of stratified teaching are clear, the challenges in implementation—such as resource allocation and teacher training—must be addressed. This study suggests that investing in these areas can lead to substantial improvements in educational outcomes.

## Conclusion

### Summary of Findings

This study highlights the critical role of stratified teaching and digital intelligence in enhancing English speaking instruction in Chinese vocational colleges. By addressing specific challenges and leveraging technology, significant improvements in student performance can be achieved.

### Implications for Practice

Educators should consider adopting stratified teaching and integrating digital tools into their instruction. Policymakers should support these initiatives by providing the necessary resources and professional development opportunities for teachers.

### Future Research Directions

Further research should explore the long-term impact of these instructional approaches and investigate their applicability in other educational contexts and subjects.

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