

Research on Tiered Teaching of Industry English Based on Needs Analysis

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Abstract. The teaching of English in vocational colleges faces a prominent contradiction between the diversity of student sources, significant differences in English foundations, and the specificity of job demands in the industry. The traditional "one size fits all" teaching model is difficult to meet the learning needs of students at different levels and cannot accurately meet the industry's requirements for English application ability. This study is based on the theories of needs analysis and hierarchical teaching, using a combination of questionnaire surveys, interviews, and classroom observations to systematically investigate the student's goal needs, learning needs, and industry needs in vocational college industry English teaching. Based on this, a four in one industry English hierarchical teaching model of "needs analysis hierarchical positioning teaching implementation multiple evaluation" is constructed. The research results indicate that industry English hierarchical teaching based on needs analysis can effectively solve the teaching dilemma of "not having enough to eat" and "not being able to swallow", significantly improving students' learning motivation and language application ability; The implementation of hierarchical teaching requires the establishment of scientific hierarchical standards, dynamic adjustment mechanisms, and diverse evaluation systems; Industry English teaching should focus on vocational ability development and achieve an organic integration of "language+major+skills". This study provides theoretical reference and practical path for the reform of industry English teaching in vocational colleges.

Keywords: Demand analysis, industry English, layered teaching, vocational colleges, teaching model.

1. Introduction

1.1. Research background

With the deepening adjustment of China's economic structure and the acceleration of industrial upgrading, the demand for high-quality technical and skilled talents is increasingly strong. Various industries have put forward higher requirements for composite talents with international perspectives, familiarity with industry rules, and foreign language communication skills. In this context, vocational English courses have emerged with the goal of cultivating students' ability to use English for communication in specific professional contexts, enabling precise integration of English learning with future job positions.

However, currently vocational colleges face two major practical challenges in industry English teaching. Firstly, the diversity of student sources leads to uneven English foundations. Vocational colleges have diverse enrollment channels, including regular college entrance examination, targeted single enrollment, five-year integrated system, etc. The English scores of students at the time of enrollment vary greatly, and the gap between high and low scores in some colleges can reach as much as 50-80 points. Under the "unified" teaching mode, students with good foundations may not have enough to eat, while those with poor foundations may not be able to swallow, making it difficult to ensure teaching effectiveness. Secondly, the teaching content is disconnected from the demands of industry positions. Industry English teaching often adopts the teaching mode of general English, lacking in-depth research on the actual needs of the industry, and the course content lags behind the development of the industry, which cannot meet the practical requirements of English application ability for positions.

To address the above issues, many vocational colleges have begun to experiment with hierarchical teaching models and industry English teaching reforms. However, existing research and practice have shown that hierarchical teaching often relies solely on students' admission scores for simple class allocation, lacking a systematic analysis of learning needs, resulting in the insufficient effectiveness of hierarchical teaching. At the same time, although industry English teaching emphasizes career orientation, it has failed to effectively address the issue of students' basic differences. Therefore, how to organically combine needs analysis with layered teaching and construct a layered teaching model for industry English based on needs analysis has become an important issue in the reform of vocational English teaching.

1.2. Research significance

From a theoretical perspective, this study integrates the needs analysis theory with the layered teaching theory, expanding their application space in the field of English for Specific Purposes. As the starting point of ESP teaching, needs analysis focuses on the language needs of learners in the target context and their psychological needs during the learning process; Layered teaching emphasizes individualized instruction and respects individual differences among learners. The combination of the two helps to construct a more explanatory and guiding theoretical framework for teaching.

From a practical perspective, this study uses empirical research to reveal the target and learning needs of vocational college students in industry English learning, as well as the actual requirements of the industry for English proficiency, providing data support for the development of teaching syllabi, selection of teaching content, and implementation of teaching strategies. The constructed teaching model of "needs analysis hierarchical positioning teaching implementation diversified evaluation" can provide a practical path for the reform of industry English teaching in vocational colleges, and has practical significance for improving the quality of talent cultivation and enhancing students' employment competitiveness.

1.3. Research question

This study mainly explores the following three questions:

What are the goals and learning needs of vocational college students' industry English learning?
What are the industry's requirements for English proficiency?

What design principles and implementation paths should be followed for layered teaching based on needs analysis?

How effective is the industry English layered teaching based on needs analysis in practice? What are the problems and challenges?

2. Theoretical Basis and Literature Review

2.1. Demand analysis theory

Needs Analysis is a core component of English for Specific Purposes (ESP) teaching, serving as the starting point for curriculum design, textbook development, and teaching activities. The requirement analysis model proposed by Hutchinson and Waters [7] is one of the most widely used theoretical frameworks, which divides requirements into two categories: target needs and learning needs.

The target needs refer to what learners need to do in the target context, that is, the language proficiency requirements for future work or study, which can be further subdivided into: necessities, referring to the content that the target context objectively requires language proficiency to master; Lack of knowledge refers to the gap between the learner's current language proficiency and the target requirements; Wants "refers to the subjective content that learners hope to learn. Target requirements analysis is product/outcome oriented, focusing on examining the specific language skills required by the work context.

Learning needs focus on what learners need to do during the learning process in order to achieve their goals, including their current level of knowledge and skills, the abilities they need to improve during the learning process, and their preferences for learning strategies and methods. Learning needs analysis is process oriented, with the research subjects being learners and subject teachers, with the aim of designing teaching activities that are in line with learners' cognitive characteristics and learning habits.

Dudley Evans and St. John [8] further expanded the connotation of needs analysis, proposing to analyze language and skills from an ecological perspective, emphasizing that needs analysis should comprehensively consider multiple perspectives such as learners, teachers, and employers. This approach provides a theoretical basis for conducting multi-agent surveys using triangulation in this study.

2.2. Layered teaching theory

Stratified Teaching/Differentiated Instruction refers to a teaching model that divides students into different levels or groups based on their existing knowledge level, ability tendencies, and learning characteristics. Differentiated teaching objectives, content, and methods are designed according to the characteristics of students at different levels, so that each student can achieve full development based on their existing foundation.

The theoretical basis of hierarchical teaching can be traced back to Vygotsky's "zone of proximal development" theory. This theory suggests that teaching should focus on students' potential development level, building a "scaffold" between existing and potential abilities to help students achieve skill advancement. There are differences in the zone of proximal development among different students, which requires teaching to be targeted and differentiated.

Kononova's [3] research on hierarchical English teaching points out that traditional teaching methods are difficult to consider individual characteristics of learners, including learning speed, cognitive style, and training level, which may lead to a loss of learning motivation and insufficient mastery of content. The advantage of hierarchical teaching lies in: respecting individual differences among students and enhancing learning motivation; Task design is flexible and caters to different levels of needs; Promote the common development of all types of students. Its disadvantage lies in the high demand for teachers' time and energy investment, requiring careful design of differentiated teaching materials and tasks.

Domestic scholars have continuously explored the hierarchical teaching of vocational English. He Peifen et al. (2005) first proposed the practice of graded teaching in vocational English, affirming its positive role in improving students' English proficiency. Xie Yuanyuan (2009) proposed the "hidden teaching model of hierarchical cooperation within the class", elaborating on the hierarchical standards, cooperation methods, and evaluation criteria. Yuan Yuan and Tan Jing (2016) found based on SPSS analysis that simple one-time class teaching based on college entrance examination scores does not meet the actual situation of vocational college students, and it is necessary to implement implicit stratification within the class. Huang Cheng (2017) proposed a teaching model of "grading+module" to construct a multi-level and multi outlet curriculum system. Wang Binbin and Wu Yingzi pointed out the drawbacks of current graded teaching: the lack of professionalism in grading, the lack of vocational specificity in teaching methods, the lack of vocational orientation in teaching content, and the emphasis on scores in the learning evaluation process.

2.3. Research on Industry English Teaching

Industry English is a specific manifestation of specialized English in the field of vocational education, characterized by curriculum design that meets the special needs of students; The course content must be related to specific disciplines, professions, and activities; The emphasis should be on making language use applicable to specific situations at all levels.

The research on English teaching in vocational colleges in China started relatively late. Kan Zhiwen and Sun Wenjing (2013) were the first to systematically analyze the factors contributing to

the lack of motivation among students in vocational English teaching, pointing out that English learning ability and curriculum design are the two main causes.

The application of demand analysis in industry English teaching has received widespread attention. Taking tourism English as an example, some scholars have conducted research using triangulation from three dimensions: learning needs perceived by current students, industry needs perceived by graduates, and learning deficiencies perceived by teachers. They found that there is a significant gap between students' English application abilities in typical work scenarios such as tour guide services, hotel reception, and tourism product marketing and actual job requirements. Based on this, a teaching design framework of "job task analysis language skill matching teaching content reconstruction" has been constructed, effectively solving key issues such as "what to teach", "how to teach", and "how to evaluate" in tourism English courses. Another scholar conducted an ESP needs analysis on the tourism English major and found that students generally have a low level of understanding of the talent specifications of the tourism industry, the language requirements of practitioners in the international market, and career development paths. They have high expectations for practical courses such as real-life simulations and on-the-job internships. This finding provides empirical evidence for the transformation of tourism English curriculum towards a career oriented approach.

2.4. Research Review

The existing research provides rich theoretical resources and empirical evidence for understanding needs analysis, hierarchical teaching, and industry English teaching, but there are still some shortcomings. Firstly, the research on the combination of needs analysis and hierarchical teaching is relatively weak. Although some studies suggest that needs analysis should be integrated into hierarchical teaching, there is still insufficient exploration on how to organically combine the two and how hierarchical teaching can respond to different types of needs. Secondly, there is a lack of empirical research on stratified teaching of English in vocational colleges. The existing research on hierarchical teaching mainly focuses on the field of public English, with relatively little research on the characteristics of industry English. Thirdly, further research is needed on the systematic integration of students' learning needs and industry goal needs, especially on how to transform industry needs into specific content for hierarchical teaching.

Based on this, this study attempts to integrate the theory of needs analysis with the theory of hierarchical teaching, construct an industry English hierarchical teaching model based on needs analysis, and test its application effect through empirical research.

3. Research Design

3.1. Research object

This study selected third year students majoring in e-commerce and tourism management from a vocational college as research subjects. Both majors offer industry-specific English courses (Cross border E-commerce English, Tourism Hotel English), and students are about to enter the internship stage with an urgent need for practical application of industry-specific English. A total of 186 students participated in the questionnaire survey, including 98 students majoring in e-commerce and 88 students majoring in tourism management. A total of 12 graduates participated in the interview, working in cross-border e-commerce enterprises, travel agencies, star rated hotels and other employers. Six industry English teachers participated in the interview, all of whom have over three years of experience in teaching industry English.

3.2. Research Methods

This study adopts a mixed research method, integrating quantitative and qualitative research methods to collect data, in order to improve the validity and reliability of the research.

Questionnaire survey: Based on Hutchinson and Waters' needs analysis model, combined with the characteristics of industry English teaching, design the "Survey Questionnaire on Industry English

Learning Needs of Vocational College Students". The questionnaire includes dimensions such as basic information, current status of English learning, target job cognition, language skill requirements, learning preferences, and self-assessment difficulties. The questionnaire adopts the Likert five level scale, and some questions are set with multiple choices. The questionnaire was distributed and collected through the Wenjuanxing platform, and 172 valid questionnaires were collected, with an effective response rate of 92.5%.

Interview: Conduct semi-structured interviews with graduates and industry English teachers. Graduate interviews focus on the specific contexts in which English is used in the workplace, commonly used English genres, communication difficulties encountered, and suggestions for school teaching. Teacher interviews focus on: student difficulties observed in teaching, implementation of tiered teaching, understanding of industry demands, and suggestions for teaching improvement. The interview time for each interviewee is 30-40 minutes, and the interviewee agrees to have it recorded and transcribed into text.

Classroom observation: Select 6 industry-specific English classes for non participatory observation, focusing on teachers' teaching organization methods, students' classroom participation, performance differences among students at different levels, industry relevance of teaching content, etc. The observation results will be used as supplementary materials for questionnaires and interviews.

3.3. Research tools and data analysis

The questionnaire data was subjected to descriptive statistics and differential analysis using SPSS 26.0. The interview text was qualitatively analyzed using NVivo 11, following the steps of open coding, axial coding, and selective coding to extract themes and concepts. Classroom observation records serve as auxiliary materials to verify and supplement the findings of questionnaires and interviews.

4. Survey Results and Analysis

4.1. Student needs analysis

4.1.1. Target requirement analysis

According to the survey, 86.3% of students expressed a desire to find employment in industries related to their major in the future, indicating that their learning motivation has a clear career orientation. The top five tasks that students believe need to be completed in English in their future work, ranked by their selection ratio, are: reading industry related materials (78.5%), communicating verbally with clients (72.1%), writing emails or work reports (65.7%), introducing products in English (58.3%), and answering English consultation calls (51.2%). This result is consistent with the study conducted by Hu Ke and AlSaqqaf [1] on Business English students, which found that students have a higher preference for interactive activities such as oral presentations, discussions, and role-playing.

The ranking of students' recognition of the importance of various language skills is as follows: speaking (92.4%), listening (86.5%), reading (75.3%), writing (68.2%), and translation (54.1%). This indicates that students attach great importance to oral communication skills and believe that oral communication is the most direct and commonly used form of English application in the workplace.

4.1.2. Analysis of Learning Needs

In terms of learning style preferences, students' favorite classroom activities are: role-playing (82.6%), group discussion (76.3%), case analysis (65.8%), scenario simulation (63.5%), and teacher explanation (42.7%). This finding is consistent with existing research, which suggests that students tend to adopt interactive and participatory learning methods, and have low interest in being listened to.

Students' expectations for teaching content exhibit diverse characteristics. 87.2% of students hope that the teaching content is closely related to their future job positions, 76.5% of students hope to add

real cases and industry materials, and 68.3% of students hope to have the opportunity to be exposed to real projects in enterprises. This reflects students' high attention to "authenticity" and "practicality".

Students' self-evaluation of learning difficulties mainly focuses on: insufficient accumulation of professional vocabulary (85.6%), poor oral expression (79.4%), difficulty in listening comprehension (68.3%), lack of real communication opportunities (65.2%), and lack of industry background knowledge (58.7%). It is worth noting that students' understanding of difficulties often remains at the level of vocabulary and skills, with limited knowledge of deeper issues such as discourse structure, stylistic features, and cross-cultural communication strategies.

4.2. Industry demand analysis

The interview analysis of 12 graduates shows that the industry's requirements for English proficiency exhibit the following characteristics.

Diversified communication partners. The communication partners who use English in the work of graduates include foreign customers (suppliers, purchasers), foreign colleagues, employees of overseas branches, exhibitors, and foreign partners who communicate via email. The diversity of communication partners requires graduates to be able to adapt to communication situations with different accents and cultural backgrounds.

Diversified language genres. The English genres encountered in work include: business emails, product manuals, contract agreements, industry reports, exhibition promotional materials, customer inquiries, complaint handling letters, etc. Different genres have different requirements for language style, formatting standards, and content organization.

Authenticity of communicative context. The typical communication situations listed by graduates include: receiving foreign customers to visit factories, participating in international exhibitions to negotiate business, handling customer complaint emails, participating in international video conferences, reading and responding to inquiries, writing product descriptions in English, etc. These situations place high demands on the accuracy, appropriateness, and adaptability of language.

The workplace English difficulties reported by graduates include: insufficient mastery of professional terminology (83.3%), tense oral communication (75%), cultural differences leading to misunderstandings (58.3%), lack of formality in writing (50%), and slow listening response speed (50%). These difficulties confirm the gap between students' language abilities during their school years and the actual needs of the industry.

4.3. Analysis of Teaching Status

Teacher interviews and classroom observations have revealed the current problems in English teaching in the industry.

There is a significant difference in student foundation. Teachers generally report that there is a significant gap in English proficiency among students in the same class, ranging from those with almost zero foundation to those who have passed the College English Test Band 4. A teacher admitted, "It's difficult to cater to everyone in the classroom. Students with good grades feel bored when teaching basic content, and students with weak foundations can't understand it at all when teaching industry-specific English

There are difficulties in implementing layering. Some teachers have tried hierarchical teaching, but the implementation effect is not ideal. The main reasons include: a single stratification standard (based solely on admission scores), a lack of targeted design of teaching content after stratification, a labeling effect on students caused by stratification, and a doubling of teachers' preparation workload.

The industry relevance of teaching content needs to be improved. Observation shows that some industry English classrooms still focus on general English content, and the industry characteristics are not clear enough. The textbook cases are not updated in a timely manner, which is disconnected from the actual business of the enterprise. A graduate said in an interview, "The email templates learned in school are too simple, while emails in actual work are much more complex.

The practical teaching process is weak. Due to limitations in class hours, resources, and the depth of school enterprise cooperation, students have limited opportunities to engage with real work tasks. In the classroom, simulation is mainly used, lacking the drive of real enterprise projects.

4.4. Analysis of demand differences

Research has found that there is a certain mismatch between student needs and industry needs. The vocabulary and oral fluency that students are highly concerned about are only the basic level required by the industry; However, students generally lack understanding of cross-cultural communication strategies, language awareness, and adaptability that the industry values. In addition, there are differences in the needs of students at different levels: students with weak foundations are more concerned with vocabulary accumulation and basic sentence patterns, students with moderate levels expect to improve their oral fluency, and students with higher levels hope to be exposed to real projects and cultivate higher-order communication strategies. These findings provide important basis for the design of hierarchical teaching.

5. Construction of Industry English Layered Teaching Model Based on Needs Analysis

Based on the above survey results, this study constructs a four in one industry English hierarchical teaching model of "needs analysis hierarchical positioning teaching implementation diversified evaluation".

5.1. Pattern design principles

Principle of demand-oriented approach. The starting point of instructional design is to systematically analyze students' learning needs and industry's target needs, and transform these two types of needs into specific teaching objectives, teaching content, and teaching activities.

Dynamic layering principle. Stratification is not fixed and should be dynamically adjusted based on students' learning progress and ability development. Stratification can be achieved by combining explicit stratification (administrative class stratification) with implicit stratification (intra class grouping) to avoid the negative impact of label effects.

Principles of professional context. Teaching activities should be based as much as possible on real professional situations, using real industry language materials, guiding students to learn by doing, and cultivating language application abilities to solve practical problems.

The principle of multiple evaluations. Establish a multi-dimensional evaluation system that combines process evaluation with summative evaluation, student self-evaluation with peer evaluation, and school evaluation with enterprise evaluation, comprehensively reflecting students' learning outcomes.

5.2. Determination of Layered Standards

The stratification criteria should comprehensively consider the following factors:

The current level of students. Based on students' English scores, classroom performance, and completion of homework, combined with diagnostic test results, students are initially divided into three levels: basic level, improvement level, and development level.

Characteristics of learning needs. There are differences in the learning needs of students at different levels: basic level students need to strengthen their basic language knowledge and communication skills; Students at the higher level need to expand their industry vocabulary and improve their oral fluency; Developmental level students need to challenge real projects and cultivate higher-order communication strategies.

Career development positioning. Provide differentiated learning paths for students based on their future employment intentions and industry job demands. Students in the field of cross-border e-commerce should strengthen their skills in product description, inquiry response, customer

communication, etc; Students majoring in tourism hotels should enhance their skills in reception services, complaint handling, cultural interpretation, and other related areas.

5.3. Layered design of teaching objectives

Design differentiated teaching objectives for students at different levels (see Table 1).

Table 1. Design of Industry English Layered Teaching Objectives

level	Language knowledge objectives	Language skill objectives	Career competency goals
foundation layer	Master core professional vocabulary, basic sentence patterns, and common expressions	Can understand simple industry conversations, engage in basic oral communication, and read short industry materials	Can complete simple career tasks under guidance and understand basic industry norms
improvement layer	Expand professional vocabulary, master common sentence patterns and functional expressions, and understand discourse characteristics	Can understand industry conversations at a normal pace, communicate on common topics, and write regular emails and reports	Capable of independently completing routine professional tasks, understanding industry culture, and possessing basic cross-cultural awareness
Development layer	Systematically master professional vocabulary and complex sentence structures, as well as language features and rhetorical strategies	Can understand complex industry discussions, conduct business negotiations and speeches, and write standardized documents and reports	Capable of handling complex professional situations, possessing cross-cultural communication strategies, and able to solve practical problems

5.4. Layered design of teaching content and tasks

The selection of teaching content should be based on industry needs, and typical tasks in the target context should be transformed into classroom learning tasks (see Table 2).

Table 2. Example of Industry English Stratification Tasks (Taking Cross border E-commerce English as an Example

Task type	foundation layer tasks	Improvement layer tasks	Development layer tasks
Product Description	Imitate and write simple product titles and basic information	Independently write product detail pages that include selling point descriptions	Write product stories with marketing strategies and optimize keywords
customer communication	Reply to common customer inquiries using templates	Flexibly handle customer inquiries, negotiations, and logistics inquiries	Handle customer complaints and disputes, maintain customer relationships
platform operation	Understand the basic rules and common terms of the platform	Analyze platform data and optimize product listing	Develop platform marketing strategies and participate in platform event planning
market analysis	Read simple market reports	Organize and analyze market information, write briefings	Complete market research report and provide product selection suggestions

5.5. Teaching Strategies and Methods

Foundation layer: scaffolding based teaching. Provide sufficient language support for basic level students, including vocabulary lists, sentence structure libraries, dialogue templates, writing frameworks, etc. In teaching, the steps of "demonstration guidance practice application" are adopted to gradually reduce scaffolding support and help students build confidence and solidify their foundation. Classroom activities mainly focus on controlled and semi controlled exercises, such as imitation reading, fill in the blank dialogue, template writing, etc.

Enhancement layer: task-based teaching. To enhance students' ability to design authentic communication tasks and guide them to use language skills comprehensively in the process of completing tasks. The task design follows the process of "pre task task environment language focus", focusing on meaning negotiation and language output. Classroom activities mainly focus on role-

playing, group discussions, and case analysis, such as simulated customer reception, product promotion meetings, inquiry response competitions, etc.

Development layer: project-based learning. Design learning tasks based on real projects for developmental level students, guiding them to integrate language and professional abilities in complex contexts. Students complete projects in groups, including project research, scheme design, implementation and execution, and result presentation. Project sources may include real business needs, simulated entrepreneurial projects, subject competition topics, etc. The role of teachers has shifted from knowledge transmitters to project mentors and resource coordinators.

5.6. Construction of evaluation system

Establish a diversified evaluation system of "process+outcome, school+enterprise, self-evaluation+peer evaluation".

Process evaluation (accounting for 40% -50%): including classroom performance, homework completion, project participation, learning records, etc. The learning portfolio records students' learning trajectories, including completed tasks, study logs, self reflection, improvement plans, etc.

Summative evaluation (accounting for 30% -40%): including final exams, project outcomes, skill demonstrations, etc. The test content should be based on the real industry situation and examine students' comprehensive application ability.

Enterprise evaluation (accounting for 10% -20%): Invite enterprise mentors to participate in the evaluation of student project results, or provide evaluation feedback based on student internship performance. Enterprise feedback focuses on vocational ability diagnosis, providing market dimension basis for teaching improvement.

Layered evaluation should pay attention to: the evaluation criteria should match the teaching objectives of each level; Encourage students to make progress on their existing foundation; Adopting a hierarchical system instead of a score system to alleviate students' anxiety.

6. Teaching Practice and Effect Analysis

6.1. Practice Overview

This study conducted a one semester teaching practice in the cross-border e-commerce English course for e-commerce majors. A total of 48 students participated, and based on pre-test scores, classroom performance, and learning needs survey results, the students were divided into basic level (12 people), improvement level (24 people), and development level (12 people). The teaching implementation adopts a combination of administrative class teaching and intra class grouping: 2 class hours per week are shared by large classes, teaching industry knowledge and general skills; Two class hours are divided into layered and grouped teaching, with targeted training conducted for each level. The teaching content is based on real work tasks, and the school enterprise cooperation introduces practical cases and projects from two cross-border e-commerce enterprises.

6.2. Implementation process

Preparation stage (1-2 weeks): Complete student needs research and stratification; Establish a team of enterprise mentors; Develop a layered teaching resource package, including task lists for each level, learning support materials, and expanded learning resources.

Implementation phase (weeks 3-14): Carry out teaching as planned. The basic layer focuses on language foundation and job introduction, adopting the steps of "imitation practice application"; The improvement layer focuses on task driven and skill enhancement, adopting a task-based teaching model; The development team focuses on project leadership and capability expansion, and conducts learning through real enterprise projects as carriers.

Adjustment Phase (Week 8): Fine tune the stratification based on mid-term evaluations and student feedback. Two students were transferred from the promotion level to the development level, and one basic level student was transferred to the promotion level due to significant progress.

Summary phase (weeks 15-16): Complete final assessment and project presentation; Collect feedback from students and businesses; Summarize the effectiveness and shortcomings of teaching.

6.3. Effect analysis

The learning motivation has significantly increased. Classroom observations show that after stratification, the classroom participation of students at all levels has increased. Basic level students dare to express themselves with the support of scaffolding, and their anxiety is reduced; Under task driven motivation, students at the higher level actively engage and enhance their learning initiative; Students at the developmental level are deeply involved under the guidance of the project, demonstrating strong learning autonomy. In the final questionnaire survey, 89.6% of students stated that tiered teaching "better meets their learning needs", and 91.7% of students believed that "learning goals are more clear".

Improved language application ability. The final assessment results show that students at all levels have made significant progress in language application ability. Basic level students have a basic grasp of core vocabulary and basic sentence patterns, and are able to complete simple work tasks; Improve students' oral fluency and enable them to engage in business communication with ease; The quality of student project works in the development layer is relatively high, and the project proposals of two groups have been recognized by enterprises and adopted for practical business. This is consistent with the conclusion of Kononova's research that hierarchical teaching helps develop advanced skills such as critical thinking and problem-solving in the field.

Professional skills have been developed. Students generally reflect that teaching content based on industry needs has helped them better understand the requirements of future positions, and participation in real projects has enhanced their professional confidence. Enterprise mentors evaluate students as "quick to get started, strong adaptability" and "having a deep understanding of the industry". Feedback from internship units shows that students who participate in teaching practice perform better in job adaptability and English application ability than previous students.

Existing problems and improvement directions. In practice, some problems have also been found: the workload of teacher preparation has significantly increased, and differentiated teaching resources need to be prepared for each level; Some basic level students still have feelings of inferiority and need more emotional support; The connection between hierarchical teaching and existing scheduling and assessment systems needs to be further streamlined; The long-term mechanism of school enterprise cooperation needs to be improved.

7. Conclusion and Suggestions

7.1. Research Conclusion

This study is based on the theory of needs analysis and constructs an industry English hierarchical teaching model based on needs analysis through empirical research. Its effectiveness has been verified in teaching practice. The main conclusions are as follows:

Firstly, demand analysis is the foundation of differentiated English teaching in the industry. The learning needs of students and the goal needs of the industry are multidimensional, including goal needs (necessary knowledge, lack of knowledge, desired knowledge) and learning needs (learning style, difficult cognition, strategy preferences). The design of layered teaching must respond to the differences in these needs, making teaching content, methods, and evaluations more targeted.

Secondly, the implementation of hierarchical teaching requires the establishment of a scientific and dynamic hierarchical mechanism. The stratification criteria should comprehensively consider students' current level, learning needs characteristics, and career development positioning; Stratification should be dynamic and adjusted according to students' learning progress; Stratification should adopt a combination of explicit and implicit methods to avoid label effects.

Thirdly, industry English teaching should focus on vocational ability development. The teaching content should be based on real industry tasks, transforming work tasks in the target context into

classroom learning tasks. The design of hierarchical tasks should reflect the difficulty gradient and ability advancement, so that students at all levels can achieve development within the "zone of proximal development".

Fourthly, a diversified evaluation system is the key to ensuring the effectiveness of differentiated teaching. A multi-dimensional evaluation system should be established that combines process evaluation with summative evaluation, student self-evaluation with peer evaluation, and school evaluation with enterprise evaluation, comprehensively reflecting students' learning outcomes and providing a basis for teaching improvement.

7.2. Teaching suggestions

Strengthen demand research and optimize course offerings [5]. Vocational colleges should establish a normalized demand research mechanism, regularly conduct student demand surveys and industry demand surveys, and use the research results as the basis for industry English curriculum design and teaching reform. The course content should keep up with industry development, dynamically update teaching cases and project resources.

Promote hierarchical teaching and achieve individualized instruction. Suggest promoting the model of "needs analysis+layered teaching" and extending layered teaching from public English to the field of industry English. Schools should support teachers in conducting research and practice on hierarchical teaching, and provide necessary policy support and resource guarantees. We can draw on the experience of the "four out of four standard" [6] and develop curriculum standards according to major categories, and conduct graded teaching according to students' levels.

Deepen school enterprise cooperation and strengthen practical education [2][4]. Actively expand channels for school enterprise cooperation and introduce real projects from enterprises into the classroom. We can draw on the model of "dual track stratification and targeted empowerment" to accurately match teaching resources according to different job requirements. Establish a mechanism for enterprise mentors to participate in teaching, invite industry experts to give lectures, guide student projects, and participate in course evaluations.

Building a 'dual teacher' teaching team. Strengthen the professional development of English teachers in the industry, support teachers to go deep into enterprises for on-the-job training, and understand the latest trends and job requirements in the industry. Encourage teachers to participate in industry training and professional qualification certification to enhance their practical teaching abilities. Establish a mechanism for school enterprise teacher exchange and hire key personnel from enterprises as part-time teachers.

Develop layered teaching resources. Develop differentiated teaching resource packages tailored to the needs of students at different levels, including graded task lists, learning support materials, expanded learning resources, online learning platforms, etc. Fully utilize AI technology to empower layered teaching, such as using intelligent tools to achieve personalized learning support.

7.3. Research limitations and prospects

This study has certain limitations: the practical period is only one semester, and the long-term tracking of teaching effectiveness needs to be strengthened; The study only selected two majors, and the universality of the conclusions needs to be verified by more majors and schools; Layered teaching requires a high level of teacher competence, and the construction of teacher training and support systems needs further research.

Future research can be deepened in the following directions: conducting long-term follow-up studies to examine the long-term impact of differentiated teaching on students' career development; Expand the scope of research to cover more majors and types of schools; Explore the application of artificial intelligence and other technological means in industry English stratified teaching; Conduct in-depth research on emotional factors and motivational mechanisms in hierarchical teaching; Establish an evaluation index system for hierarchical teaching of industry English.

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