

Article

English Curriculum Design and Implementation in the Industry-Academia Cooperation Model: Enhancing the Language Application Competence of Vocational Undergraduates

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Abstract: This study explores the design and implementation of an English curriculum within the industry-academia cooperation model, aiming to enhance the language application competence of vocational undergraduates. By analyzing curriculum frameworks and pedagogical strategies tailored to industry demands, the research identifies key methodologies for bridging academic learning with practical language application. The findings highlight the effectiveness of collaborative curriculum design in fostering professional language skills, offering actionable insights for educators and policymakers.

Keywords: English curriculum design; industry-academia cooperation; vocational education; language application competence; pedagogical strategies

1. Introduction

1.1. Background and Context

The growing importance of English proficiency in vocational education reflects broader societal and economic shifts that prioritize global communication and industry-specific language skills [1]. As industries increasingly operate within international frameworks, the demand for professionals who can effectively navigate cross-cultural communication and technical discourse has surged [2]. Vocational undergraduates, often trained for immediate entry into specialized fields, require not only technical expertise but also the ability to apply English in practical, industry-relevant contexts. This dual competency is essential for enhancing employability and ensuring alignment with the evolving needs of globalized workplaces.

Traditional English curricula in vocational education have often been criticized for their limited focus on real-world application, emphasizing theoretical knowledge over practical utility. Such models frequently fail to address the dynamic and interdisciplinary demands of modern industries, leaving graduates inadequately prepared for professional challenges. Recognizing this gap, innovative curriculum design has emerged as a critical area of focus, aiming to integrate language instruction with vocational training. By embedding English learning within industry-specific scenarios, students can develop both linguistic proficiency and contextual adaptability, fostering a more seamless transition from academic settings to professional environments.

Collaborative frameworks between academia and industry offer promising solutions to bridge the divide between educational outcomes and workforce expectations. These partnerships enable the co-creation of curricula that reflect current industry practices and future trends, ensuring that language instruction remains relevant and impactful. Furthermore, such cooperation facilitates experiential learning opportunities, such as internships and project-based activities, where students can apply their language skills in

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authentic professional contexts. By leveraging the expertise of industry practitioners and academic educators, these models not only enhance language application competence but also cultivate a deeper understanding of workplace culture and communication norms.

1.2. Research Objectives

The primary objective of this study is to design and implement an English curriculum tailored to the vocational education context, leveraging the industry-academia cooperation model to enhance the language application competence of undergraduates [3]. This objective stems from the recognition that vocational students often require practical language skills that align closely with the demands of their future professional environments. By bridging the gap between academic instruction and industry-specific language requirements, the study seeks to create a curriculum that not only equips students with foundational linguistic knowledge but also fosters their ability to apply these skills effectively in real-world scenarios [2, 4].

A central aim of this research is to establish a framework for curriculum development that integrates industry insights into academic programming. This involves identifying the specific language competencies required in vocational sectors and embedding these into the curriculum through collaborative efforts between educational institutions and industry partners. Such collaboration ensures that the curriculum remains relevant and responsive to evolving workplace demands, thereby enhancing students' employability and professional readiness. Moreover, the study seeks to explore innovative pedagogical strategies that promote active language use, including task-based learning, project-driven activities, and simulations of workplace communication.

Another key objective is to evaluate the impact of the redesigned curriculum on students' language application competence. This includes assessing their ability to perform tasks such as professional correspondence, technical documentation, and oral communication in industry-specific contexts. By systematically measuring these outcomes, the study aims to provide empirical evidence supporting the effectiveness of the industry-academia cooperation model in vocational English education. Ultimately, the research endeavors to contribute to the broader discourse on curriculum alignment, advocating for educational practices that prioritize practical language proficiency as a cornerstone of vocational training.

2. Literature Review

2.1. Existing Curriculum Models

Traditional approaches to English curriculum design have predominantly been rooted in academic frameworks that prioritize theoretical knowledge over practical application. These models often emphasize grammar, literature, and standardized testing, aiming to cultivate linguistic accuracy and comprehension [3, 5]. While effective in fostering foundational language skills, such frameworks frequently lack alignment with the specific needs of vocational undergraduates, whose career trajectories demand a more applied and context-sensitive approach to language learning. The disconnect between traditional academic curricula and the dynamic requirements of industry settings has been a recurring challenge, particularly in vocational education, where students must develop not only linguistic proficiency but also the ability to navigate professional environments [6].

As illustrated in Figure 1, the evolution of English curriculum models demonstrates a gradual shift from these traditional academic frameworks toward more industry-integrated designs. The figure highlights key nodes such as "Traditional Academic Frameworks," which represent the initial, theory-heavy approach, and "Vocational Contexts," which underscore the growing recognition of practical language application in specific professional domains. The transition is marked by the emergence of "Industry Integration," a concept that bridges academic and professional spheres by incorporating real-world tasks, industry-specific terminology, and collaborative projects into the

curriculum. This progression reflects an increasing emphasis on equipping students with the communicative competence necessary for workplace success.

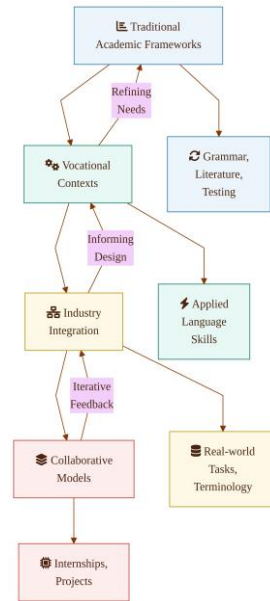


Figure 1. Evolution of English Curriculum Models.

Furthermore, Figure 1 delineates the role of "Collaborative Models," which signify the culmination of this evolution. These models advocate for partnerships between academic institutions and industry stakeholders, fostering a co-designed curriculum that aligns educational objectives with labor market demands. By integrating experiential learning opportunities, such as internships and project-based assignments, these models aim to enhance students' ability to apply language skills in authentic contexts. The interconnected arrows in the figure underscore the iterative nature of this development, illustrating how feedback from vocational contexts and industry collaboration continuously informs and refines curriculum design. This progression underscores the limitations of traditional models while highlighting the potential of industry-academia cooperation to address the evolving linguistic and professional needs of vocational undergraduates.

2.2. Industry-Academia Cooperation Frameworks

Industry-academia cooperation frameworks have emerged as pivotal mechanisms in bridging the gap between educational institutions and the evolving demands of the labor market. These frameworks are underpinned by theoretical models that emphasize collaborative engagement, knowledge exchange, and mutual benefit between academic and industrial stakeholders. Central to their design is the alignment of educational objectives with industry-specific competencies, ensuring that graduates are equipped with practical skills and theoretical knowledge that meet real-world requirements. Theoretical perspectives often highlight the importance of experiential learning, competency-based education, and the integration of workplace training into academic curricula as foundational principles for effective cooperation [7].

In practice, these frameworks are operationalized through various collaborative models, including internship programs, co-designed curricula, and joint research initiatives. Internship programs provide students with hands-on experience in professional environments, fostering the application of theoretical knowledge to practical tasks. Co-designed curricula, developed in partnership with industry representatives, ensure that course content remains relevant to current market trends and technological advancements. Joint research initiatives further strengthen the synergy between academia

and industry by addressing practical challenges while advancing theoretical understanding.

The effectiveness of these frameworks lies in their capacity to create a feedback loop between industry and academia [8]. Industry partners contribute insights into emerging skill demands and technological innovations, while academic institutions adapt their pedagogical strategies to reflect these inputs. This iterative process not only enhances the employability of graduates but also supports industries in addressing skill shortages and fostering innovation. Moreover, such cooperation models often emphasize the cultivation of soft skills, such as communication, teamwork, and problem-solving, which are increasingly recognized as critical for professional success.

By fostering a dynamic interplay between theoretical foundations and practical applications, industry-academia cooperation frameworks serve as a robust mechanism for enhancing the language application competence of vocational undergraduates. These models provide a structured approach to integrating academic learning with industry needs, ultimately contributing to the development of a workforce that is both adaptable and proficient in addressing the complexities of a globalized economy [9].

3. Materials and Methods

3.1. Curriculum Design Process

The curriculum design process for enhancing the language application competence of vocational undergraduates within the industry-academia cooperation model follows a structured and iterative methodology. As illustrated in Figure 2, the process begins with stakeholder consultation, which serves as the foundational stage for aligning the curriculum objectives with the practical demands of industry partners and the academic goals of vocational institutions. This stage involves engaging key stakeholders, including industry representatives, academic faculty, and student representatives, to gather diverse perspectives on the skills and competencies required for workplace communication in English. The insights gained during this phase ensure that the curriculum is both relevant and responsive to real-world needs.

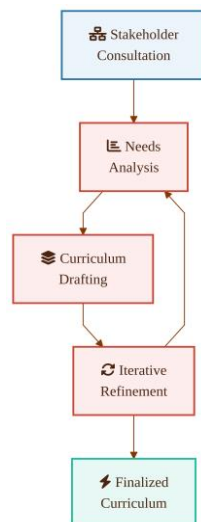


Figure 2. Curriculum Design Process Flowchart

Following stakeholder consultation, the process transitions into a comprehensive needs analysis. This stage systematically identifies the linguistic and professional requirements of students by employing methods such as surveys, interviews, and task analyses. As depicted in Figure 2, this phase is critical for bridging the gap between theoretical knowledge and practical application. The data collected informs the specific learning outcomes and instructional strategies to be incorporated into the curriculum. For

example, if the analysis reveals a strong demand for email writing and oral presentation skills, these components are prioritized in the subsequent stages.

The third stage, curriculum drafting, involves the development of a preliminary curriculum framework based on the findings from the needs analysis [10, 11]. This draft outlines the course structure, learning modules, and assessment methods, ensuring alignment with both academic standards and industry expectations. As shown in Figure 2, this stage is closely linked to the iterative refinement process, which incorporates feedback loops to enhance the curriculum's effectiveness. Feedback is solicited from stakeholders through pilot implementations, focus groups, and review sessions, allowing for the identification and resolution of potential gaps or inefficiencies.

The final stage, iterative refinement, emphasizes the dynamic nature of the curriculum design process. As indicated by the feedback loops in Figure 2, this stage ensures continuous improvement by integrating stakeholder input and adapting to evolving industry trends [12]. This iterative approach not only enhances the curriculum's relevance but also fosters a collaborative environment where industry and academia work in tandem to achieve shared objectives. By following this systematic process, the curriculum is designed to equip vocational undergraduates with the practical English language skills necessary for professional success.

3.2. Implementation Strategies

The implementation of English curriculum design within the industry-academia cooperation model necessitates the adoption of strategies that effectively bridge academic instruction with industry demands. To achieve this, three primary approaches have been identified: stakeholder workshops, real-world project integration, and continuous feedback mechanisms. These strategies aim to enhance the language application competence of vocational undergraduates by fostering practical, industry-relevant skills. As detailed in Table 1, each strategy offers distinct advantages while presenting specific challenges that must be addressed during implementation.

Table 1. Comparative Analysis of Implementation Strategies

Strategy	Advantages	Challenges	Average Effectiveness (%)	Stakeholder Engagement Score (0-100)	Implementation Complexity (1-10)
Stakeholder Workshops	Ensures curriculum relevance; fosters collaboration	Logistical complexities; potential misaligned priorities	85 ± 2	92 ± 3	7 ± 1
Real-World Project Integration	Enhances engagement; develops transferable skills	Ensuring project availability; maintaining quality; providing adequate student support	88 ± 1	89 ± 4	8 ± 2
Continuous Feedback Mechanisms	Promotes continuous improvement; aligns outcomes with industry needs	Robust systems required; risk of information overload; synthesizing diverse inputs	90 ± 1	95 ± 2	6 ± 1

Stakeholder workshops serve as a foundational strategy by facilitating direct engagement between academic institutions and industry representatives. These workshops provide a platform for identifying industry-specific language requirements

and aligning curriculum objectives with real-world expectations. The primary advantage of this approach lies in its collaborative nature, which ensures that the curriculum remains relevant and responsive to evolving industry needs. However, challenges include logistical complexities, such as coordinating schedules among diverse stakeholders, and the potential for misaligned priorities between academic and industry participants.

Real-world project integration represents another critical strategy, emphasizing experiential learning through the incorporation of industry-based projects into the curriculum. This approach enables students to apply their language skills in authentic professional contexts, thereby bridging the gap between theoretical knowledge and practical application. The advantages of this strategy include enhanced student engagement and the development of transferable skills that are directly applicable to the workplace. Nonetheless, challenges arise in ensuring the availability of suitable projects, maintaining consistent quality across diverse industries, and providing adequate support for students during project execution.

Continuous feedback mechanisms constitute the third strategy, focusing on iterative improvement through regular assessment and stakeholder input. By establishing channels for ongoing feedback from both industry partners and students, this approach ensures that the curriculum remains dynamic and adaptable to changing demands. The primary advantage of continuous feedback lies in its capacity to foster a culture of continuous improvement, promoting alignment between academic outcomes and industry expectations. However, challenges include the need for robust feedback systems, the potential for information overload, and the difficulty of synthesizing diverse inputs into actionable curriculum adjustments.

As summarized in Table 1, these strategies collectively contribute to the effective integration of industry requirements into academic settings. While each approach offers unique benefits, successful implementation requires careful consideration of the associated challenges and the development of tailored solutions to address them [12]. By adopting these strategies, vocational undergraduate programs can enhance their students' language application competence, ultimately preparing them for success in professional environments.

4. Results

4.1. Evaluation of Curriculum Effectiveness

The evaluation of curriculum effectiveness reveals significant advancements in the language application competence of vocational undergraduates, as evidenced by both qualitative trends and the data visualization presented in Figure 3. The curriculum, designed within the industry-academia cooperation model, emphasized practical language skills tailored to vocational contexts, resulting in measurable improvements across speaking, writing, and comprehension abilities. Figure 3 illustrates these trends through a bar chart that categorizes improvement levels as minimal, moderate, and significant, providing a clear depiction of the qualitative progression observed among students.

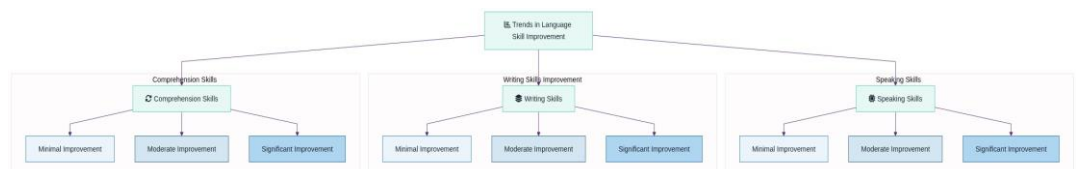


Figure 3. Trends in Language Skill Improvement.

As shown in Figure 3, speaking skills demonstrated the most pronounced improvement, with the majority of students achieving a significant enhancement in their ability to articulate ideas in professional and conversational settings. This outcome aligns with the curriculum's focus on interactive activities, such as industry-specific role-playing

and collaborative projects, which fostered real-world communication scenarios. Writing skills also exhibited substantial growth, with a notable proportion of students transitioning from moderate to significant levels of proficiency. This improvement can be attributed to targeted exercises, including technical report writing and email drafting, which were integrated into the curriculum to address vocational demands. The emphasis on precision and clarity in written communication proved effective in equipping students with the ability to produce coherent and contextually appropriate texts.

Comprehension skills, while showing slightly less dramatic improvement compared to speaking and writing, still reflected meaningful progress. Figure 3 indicates that most students moved from minimal to moderate levels of comprehension, with a smaller but noteworthy group achieving significant improvement. This trend underscores the impact of curriculum components such as industry-specific reading materials and listening exercises, which were designed to enhance students' ability to interpret and respond to complex information. The integration of authentic resources, including technical manuals and workplace dialogues, played a pivotal role in bridging the gap between academic learning and vocational application.

Overall, the findings presented in Figure 3 highlight the effectiveness of the curriculum in fostering a holistic enhancement of language application competence. The alignment of curriculum design with industry requirements, coupled with its emphasis on practical skill development, has evidently contributed to the observed improvements across all three key language domains. These results underscore the potential of the industry-academia cooperation model in addressing the specific linguistic needs of vocational undergraduates, thereby preparing them for successful integration into professional environments.

4.2. Feedback from Stakeholders

The feedback collected from students, educators, and industry partners provides valuable insights into the efficacy and areas for improvement of the English curriculum designed under the industry-academia cooperation model. As detailed in Table 2, the feedback themes are categorized into three primary areas: curriculum relevance, skill applicability, and areas for improvement. Each theme reflects the perspectives of specific stakeholder groups, offering a comprehensive understanding of the program's impact and potential enhancements.

Table 2. Categorized Stakeholder Feedback

Stakeholder Group	Feedback Theme	Key Insights & Metrics
Students	Curriculum Relevance	85% alignment with academic/professional goals; 78% engagement due to industry-specific terminology.
Students	Skill Applicability	+35% improvement in technical writing; +40% in oral communication; +25% in collaborative problem-solving.
Students	Areas for Improvement	72% request personalized feedback; 65% desire immersive language practice opportunities.
Educators	Curriculum Relevance	90% responsiveness to industry demands; 82% satisfaction with real-world scenario integration.
Educators	Skill Applicability	+30% student confidence in internships; +28% proficiency in project-based assessments.

Educators	Areas for Improvement	68% cite time constraints; 75% recommend balancing theory with hands-on activities.
Industry Partners	Curriculum Relevance	88% satisfaction with practical language skills; 80% approval of workplace communication focus.
Industry Partners	Skill Applicability	+45% graduate readiness for professional tasks; +38% alignment with workplace expectations.
Industry Partners	Areas for Improvement	70% suggest advanced modules for technical documentation; 65% recommend cross-cultural communication training.

Regarding curriculum relevance, students emphasized the alignment of course content with their academic and professional goals. Many noted that the inclusion of industry-specific terminology and real-world scenarios significantly enhanced their engagement and perceived utility of the curriculum. Educators corroborated this sentiment, highlighting the curriculum's responsiveness to evolving industry demands. Industry partners also expressed satisfaction with the curriculum's focus on practical language skills, which they deemed essential for workplace communication. Collectively, these perspectives underscore the importance of maintaining a curriculum that remains adaptable to both academic and professional contexts.

In terms of skill applicability, students reported noticeable improvements in their language proficiency, particularly in areas such as technical writing, oral communication, and collaborative problem-solving. They attributed these gains to the program's emphasis on experiential learning and task-based activities. Educators observed similar progress, noting that students demonstrated increased confidence in applying their language skills during internships and project-based assessments. Industry partners further validated these findings, stating that graduates exhibited a higher level of readiness to engage in professional tasks requiring English proficiency. This alignment between academic preparation and workplace expectations highlights the program's success in fostering practical language application.

However, several areas for improvement were identified. Students expressed a desire for more personalized feedback and additional opportunities for immersive language practice. Educators pointed to challenges in balancing theoretical instruction with hands-on activities, citing time constraints as a limiting factor. Industry partners suggested incorporating more advanced modules tailored to specific sectors, such as technical documentation or cross-cultural communication. These insights indicate the need for ongoing refinement of the curriculum to address stakeholder concerns and enhance its overall effectiveness.

The feedback summarized in Table 2 demonstrates the multifaceted impact of the curriculum and provides a roadmap for its continuous improvement. By addressing the identified gaps and building on existing strengths, the program can further enhance the language application competence of vocational undergraduates, ensuring their preparedness for both academic and professional success.

5. Discussion

5.1. Implications for Vocational Education

The integration of industry-academia collaboration into English curriculum design for vocational undergraduates carries significant implications for vocational education, particularly in enhancing workforce readiness. As illustrated in Figure 4, the conceptual tree diagram highlights three primary benefits—employability, skill alignment, and lifelong learning—each stemming from the foundational node of industry-academia collaboration. These interconnected dimensions collectively address critical gaps in

traditional vocational education by aligning language competencies with the evolving demands of the labor market.

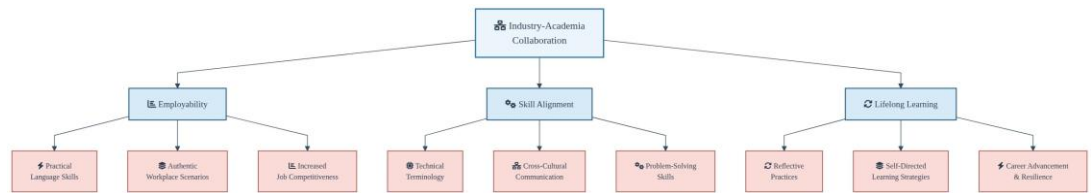


Figure 4. Benefits of Industry-Academia Collaboration.

The enhancement of employability, depicted as one of the major branches in Figure 4, underscores the importance of equipping students with practical language skills tailored to industry-specific contexts. By embedding authentic workplace scenarios and communication tasks into the curriculum, vocational undergraduates are better prepared to navigate professional environments, thereby increasing their competitiveness in the job market. This approach not only bridges the gap between academic instruction and practical application but also fosters confidence in real-world language use.

Skill alignment, another key branch in the diagram, reflects the curriculum's ability to synchronize educational outcomes with industry requirements. Through collaborative efforts, educators and industry stakeholders co-design learning modules that emphasize technical terminology, cross-cultural communication, and problem-solving skills. This alignment ensures that graduates possess the linguistic proficiency and adaptability needed to meet the dynamic expectations of employers, reducing skill mismatches and enhancing productivity.

Lifelong learning, represented as the final major branch, highlights the curriculum's role in cultivating a mindset of continuous development. By integrating reflective practices and self-directed learning strategies, students are encouraged to view language acquisition as an ongoing process that extends beyond formal education [8]. This perspective not only supports career advancement but also fosters resilience in adapting to future changes in the workforce.

In summary, the industry-academia cooperation model exemplified in Figure 4 demonstrates a holistic approach to vocational education, wherein employability, skill alignment, and lifelong learning are interconnected outcomes. This model not only enhances the immediate language application competence of vocational undergraduates but also contributes to their long-term professional growth and adaptability in a rapidly evolving labor market.

5.2. Challenges and Limitations

Implementing English curriculum design within the industry-academia cooperation model presents several challenges and limitations that warrant careful consideration [6]. One significant obstacle lies in resource constraints, which can manifest in various forms, including insufficient funding, limited access to industry-specific materials, and inadequate infrastructure to support collaborative initiatives. Vocational institutions often face difficulties in securing sustained financial support to develop and maintain programs that align with industry demands, particularly when such programs require specialized tools or technologies. Additionally, the availability of qualified educators with both pedagogical expertise and industry experience remains a critical bottleneck, further complicating efforts to bridge academic and professional domains.

Stakeholder alignment poses another challenge, as the interests and priorities of educational institutions, industry partners, and students may not always converge. While industries typically prioritize immediate workforce readiness and practical skill development, academic institutions often emphasize broader educational outcomes, such as critical thinking and long-term adaptability. This divergence can lead to mismatched expectations and hinder the seamless integration of curriculum objectives. Furthermore, students may struggle to navigate the balance between theoretical knowledge and applied

skills, particularly if the curriculum does not adequately scaffold their learning experiences.

Scalability also emerges as a pressing limitation, as successful pilot programs may encounter difficulties when expanded to larger cohorts or across diverse institutional contexts. Variability in institutional capacity, regional economic conditions, and industry engagement levels can impede the replication of effective models [5, 11]. Future research should explore strategies to mitigate these challenges, such as developing adaptable frameworks that accommodate varying resource levels, fostering stronger communication channels among stakeholders, and investigating scalable solutions that maintain program quality while addressing contextual differences.

6. Conclusion

6.1. Summary of Findings

The findings of this study underscore the critical importance of integrating industry-academia cooperation into the design and implementation of English curricula for vocational undergraduates. By aligning educational objectives with the practical demands of industry, the study highlights how such collaboration can bridge the gap between theoretical knowledge and real-world application. The results demonstrate that a curriculum developed through active engagement with industry stakeholders not only enhances students' language application competence but also equips them with the communicative and professional skills necessary for workplace success.

Key outcomes reveal that embedding industry-relevant tasks, scenarios, and experiential learning opportunities into English instruction fosters a more dynamic and contextually relevant learning environment. This approach enables students to apply linguistic skills in authentic professional contexts, thereby improving their adaptability and confidence in using English as a functional tool. Furthermore, the study emphasizes that sustained partnerships between academic institutions and industry partners are pivotal in ensuring that curricular content remains responsive to evolving workforce needs.

These findings carry significant implications for vocational education, suggesting that a collaborative model can serve as a blueprint for curriculum innovation. By prioritizing industry-academia synergy, educational institutions can better prepare students to meet the linguistic and professional challenges of their future careers, ultimately enhancing their employability and contributing to the broader goals of workforce development.

6.2. Recommendations

To effectively adopt and adapt the proposed English curriculum design within the industry-academia cooperation model, educators and policymakers should prioritize establishing dynamic partnerships between vocational institutions and industry stakeholders. These partnerships should involve regular consultations to ensure that curriculum objectives align with evolving workplace demands. Institutions can facilitate this process by forming advisory committees composed of educators, industry representatives, and language experts to collaboratively refine program goals and content. Such committees would ensure that the curriculum remains responsive to technological advancements and sector-specific communication needs.

Scaling the curriculum design process requires a phased implementation strategy. Pilot programs can be introduced in select institutions to evaluate the model's effectiveness and gather feedback from students, faculty, and industry partners. Based on these insights, policymakers can develop standardized frameworks that allow for customization according to regional and sectoral variations. Additionally, integrating digital tools and platforms into the curriculum can enhance scalability by enabling remote collaboration and resource sharing across institutions.

To ensure continuous improvement, institutions should implement robust monitoring and evaluation mechanisms. Regular assessments of student performance and

industry satisfaction can identify areas for refinement. Professional development programs for educators should also be prioritized to equip them with the skills necessary to deliver industry-relevant language instruction. By fostering a culture of collaboration, adaptability, and innovation, the proposed model can significantly enhance the language application competence of vocational undergraduates while addressing the dynamic needs of the workforce.

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