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Exploration of Innovative Paths for Empowering Art and Design Teaching with AIGC

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Abstract

Against the backdrop of the continuous advancement of the Belt and Road Initiative and the "going global" of vocational education, the art and design major of China's vocational education is confronted with numerous challenges in overseas school-running, such as the shortage of cross-cultural teaching staff and the great difficulty in the local adaptation of teaching resources. Under such circumstances, it is necessary to transform the teaching paradigm from the previous "skill-oriented" model to a "creativity-oriented" one.This study adopts the methods of literature analysis and case study to establish an evaluation and teaching model framework of "AIGC Intelligent Assistance – Cross-cultural Integration – Dual-teacher Collaboration". Combined with relevant empirical cases, it explores how AIGC can boost the going global of vocational education and its practical paths from three dimensions: curriculum reconstruction, evaluation upgrading and faculty construction.The research finds that AIGC can break down the barriers among language, culture and teaching resources through a cross-cultural translation mechanism. Its "teacher-student-AI" ternary collaboration model has achieved practical results in overseas school-running regions, serving as a key support for reshaping overseas teaching and cross-cultural communication paths.Studies show that the innovative path established relying on AIGC can help address the dilemmas faced by vocational education in going global, realize the coordinated development of technology and art, and unify cultural communication with skill cultivation. Furthermore, it provides practical and humanistic path references for the international and digital-intelligent transformation of vocational education.

Keywords

AIGC; Vocational Education Going Global; Art and Design Teaching; Lu Ban Workshop; Cross-Cultural Design

1. Introduction

As the Belt and Road Initiative continues to advance, China's vocational education has steadily expanded its global presence. Against this backdrop, local vocational

colleges have shifted their development focus—moving away from simply bringing in foreign models and toward actively establishing overseas programs. Today, many institutions across the country have launched various cross-border teaching projects, making this a central part of their strategic efforts. These on-the-ground practices not only boost international industrial capacity cooperation but also help train a substantial number of local skilled workers for host countries. At the same time, they have greatly enhanced the global recognition and overall influence of China's vocational education model.

It also serves as a key vehicle for strengthening the country's soft power and the international competitiveness of its industries.[1]. The second phase of the "Double High Project" in 2025 has clear requirements, which state that teaching should follow output, and school-enterprise collaboration should be regarded as a principle. Overseas academic education and skills training should be carried out, cooperation education projects should be standardized, and overseas engineering technology colleges should be explored for establishment, so that China's vocational education standards and models can be implemented overseas [2].

Art design serves as a vital carrier for cultural communication. Relying on diverse artistic creations, practitioners in this field are able to showcase traditional Chinese culture, advance exchanges and mutual understanding between different civilizations, and cater to the practical talent needs of overseas industries. In addition, the national vocational education discipline catalogue clearly puts forward new development requirements for art design majors. It emphasizes advancing digital and intelligent upgrading within the discipline, as well as strengthening students' ability to adapt to cross-cultural contexts. Even so, the international development of art design programs still faces quite a few realistic limitations. The most prominent hurdle lies in the lack of interdisciplinary teachers: few educators are equipped with cross-cultural communication literacy, contemporary creative design thinking, and digital smart teaching expertise at the same time.

The traditional teaching model is difficult to meet the learning needs of diverse overseas students. Second, there are difficulties in adapting teaching resources to local conditions. There are differences in design standards, cultural symbols, and aesthetic preferences between China and foreign countries, resulting in a disconnection between teaching and the market. Third, language barriers and limited teaching time make it difficult to meet the local demand for talent cultivation.

The rapid rise of AIGC has changed how art, design, creation, and classroom teaching work. This technology accelerates content production, supports multilingual text conversion, and enables the blending of symbols across cultures—features that make it well-suited for international education.

Take creative brainstorming. AIGC can turn vague ideas into rough visual drafts, and it can also mix Eastern and Western artistic elements quite naturally. In

personalized teaching for international students, it can adjust design styles to match the different aesthetic preferences and cultural tastes of learners from various regions.

In cross-cultural contexts, it can reduce language barriers in teaching through multilingual interaction, providing technical support for overcoming limitations in overseas school-running.The application of AIGC is highly compatible with the core characteristics of art and design majors, namely creativity, practicality and cross-cultural nature[3]. It helps solve practical problems in the overseas operation of this major, responds to the requirements of digital-intelligent transformation and standardized output in the "Double-High Plan", and provides a new technical approach for the overseas implementation of China's vocational education standards.

Drawing on the points discussed above, this study uses art and design courses as a typical case. It integrates AIGC technology into cross-border teaching practice, aiming to address some clear shortcomings found in traditional teaching approaches. The core objective here is to help international students develop cross-cultural aesthetic awareness and stronger creative abilities. At the same time, the study looks into how digital and intelligent tools can help overcome various barriers—such as language differences, cultural understanding, and the challenge of adapting to local resources.Beyond that, this research also works to better align Chinese design standards with local practical needs and the aesthetic preferences of host countries. In doing so, it offers both theoretical grounding and practical, workable strategies. Ultimately, it supports the smart digital transformation and high-quality global growth of vocational art and design education.

2. Theoretical Logic of AIGC Enabling Art Design Education

2.1. The paradigm shift from "skill-oriented" to "creativity-oriented"

With the global expansion of vocational art and design education, certain weaknesses in the skills-focused teaching model have become increasingly hard to ignore. One particular challenge stands out: how do you effectively support international students who come from very different educational and cultural backgrounds, especially when overseas programs are often short-term by nature?

This teaching approach leans heavily on building practical design skills. Most class sessions stick to the fundamentals—things like hand-drawing lines, practicing color matching, or getting started with basic design software. There's no denying these skills matter. But the curriculum rarely pushes beyond those essentials.

In traditional teaching, design courses present a linear framework of "foundation - specialty - expansion", with a greater emphasis on manual techniques and form expression. Students need to spend a lot of time training skills, while digital technology courses are mostly elective courses, leading to the dilemma of fragmented application of technical tools and a gap in the connection between

technology and teaching [4]. The bias of this approach lies in regarding technical operation as the core goal of teaching, thereby neglecting the cultivation of students' creative generation and cross-cultural aesthetic abilities. In contrast, the "creative-oriented" teaching model takes guiding students to generate unique design ideas and realize their implementation as the core, weakening the rigid requirements for proficient use of specific tools, focusing on the positioning of design themes, solutions to local problems, and the integration of local cultural elements. Technical operation is merely an auxiliary means for the realization of creativity. The participation of AIGC technology not only provides a core and important driving force for the paradigm shift of art design teaching, but also assumes a key role as a "cultural intermediary" in cross-cultural teaching, with its role far exceeding that of mere technical assistance. In terms of design positioning, concept transmission, and cross-cultural communication, the abstract aesthetic concepts such as "artistic conception" and "Spiritual Resonance" in Chinese art design，as well as the cultural symbolic meanings of traditional patterns and colors，are often difficult for overseas students to accurately understand due to cultural differences.

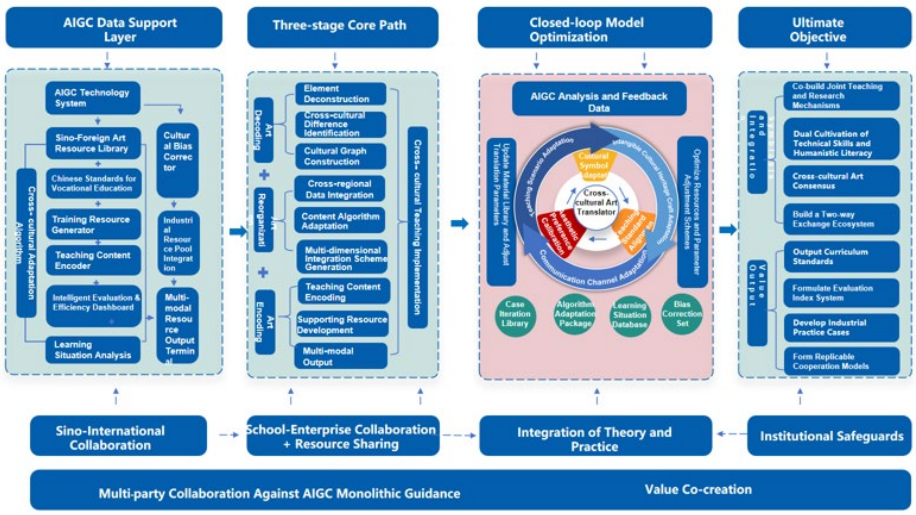
AIGC can really help tackle this problem. It doesn't just understand what's being said—it can also turn those ideas into visuals. For example, by combining image generation technology with large language models, AIGC is able to break down complex Chinese aesthetic concepts and express them through concrete visual features. What's more, it can adjust these features based on things like the cultural symbols, aesthetic tastes, and ways of thinking in different countries. As a result, the final visuals keep the core elements of Chinese aesthetics but are much easier for international students to understand and connect with..For example, when communicating the "Chinese symmetrical beauty" to students in Southeast Asia, the AIGC technology can incorporate the symmetrical elements of local temple architecture to generate design sketches. When explaining "ink-wash artistic conception", it can combine Impressionist light and shadow expressions to preserve the essence of aesthetics. This process has transformed the educational evaluation model from skill proficiency to creativity uniqueness, logical closure, and cross-cultural adaptability. More importantly, this transformation has laid a solid foundation for the international adaptation of Chinese design education standards. Through the processing and analysis of cross-cultural aesthetic data by AIGC, it helps to achieve semantic alignment and cultural translation of the aesthetic standards and design concepts in the teaching syllabus. This form can generate localized teaching content that meets the needs of the target country, ensuring the transmission of the core connotation of Chinese design education while preventing cultural misalignment.

2.2. The "human-machine co-creation" mechanism in a cross-cultural context

Moving from a skills-driven model to one focused on creativity—this shift really lies at the heart of what overseas art and design vocational education is trying to achieve. It's not just a theoretical idea; it actually gives teaching practice a solid foundation to build on. And when you bring in human-machine co-creation, especially across different cultural settings, that shift becomes much more doable on the ground. So in that sense, the mechanism doesn't just support the transition—it pushes it further and makes it more meaningful. It constitutes also the second tier of the general theoretical framework .

Take art and design education in international settings. These days, it's not really about teaching one specific skill or a fixed style anymore. Instead, it's become something far more integrated—a system that brings together cultural understanding, social context, and the co-creation of value. And if you look at design aesthetics research over recent years, you'll notice a clear shift. It's moving away from just focusing on final outcomes. The field is heading toward a more multi-dimensional path—one that emphasizes design processes, cross-disciplinary connections, and how humans and machines work together.Li Hongmei and her co-authors, using a Public Art Design course as an example, make the case that generative AI's real value isn't about replacing the human designer. Instead, it helps shift design education from simply transmitting knowledge toward building what they call an "associated knowledge system"—and it does so through a mechanism of human–machine co-creation.[5]. The key to cross-cultural adaptation lies in alleviating communication barriers and adaptation pressures caused by cultural differences through targeted support and cultural cognitive differences, achieving understanding and collaboration among different cultural subjects, and thereby achieving the teaching goal of active adaptation to two-way integration. In addition, the concept of human-machine collaborative education aims to cultivate high-quality, versatile talents who can master collaboration and lead the development of intelligent technologies. Through a new educational system of "teacher-student-machine" tripartite two-way empowerment, teachers, students, and AI application tools collaborate with each other to optimize and reshape the entire teaching process [7]. Different from the core goal of technical empowerment in local teaching to improve teaching efficiency, the core value of the three-element system in cross-cultural scenarios lies in building an equal dialogue bridge among different cultural subjects. It breaks away from the traditional one-way output model of overseas teaching and takes the cultural cognition and aesthetic preferences of local students as the core input items of teaching, rather than passive recipients, shifting the teaching process from the imparting of single skills to cultural mutual learning and creative co-construction, providing a fundamental logic support for subsequent cross-cultural design practices. In the context of overseas teaching, this theoretical shift is particularly crucial. Facing diverse cultural regions such as Southeast Asia, Africa, and the Middle East, traditional teaching models often

center on Chinese aesthetics and design paradigms, which often lead to cultural adaptation deviations and even cause aesthetic cognitive conflicts among students. Therefore, a smart intermediary mechanism capable of "interpreting, converting, and reorganizing" is usually needed. And AIGC precisely demonstrates unique potential in semantic understanding, multimodal generation, and cross-cultural mapping.



So here's what the model tells us. In overseas art and design education at vocational colleges, AIGC does more than just work as a technical tool. It also acts as a kind of bridge—one that helps different cultures talk to each other. But the more important point is this: its main job isn't just about changing languages or file formats. Instead, it focuses on reinterpreting and reshaping what artistic meaning actually is. This whole process—what we call human-machine co-creation—unfolds in three progressive steps: artistic decoding, artistic reorganization, and then artistic encoding.In the decoding stage, teachers and students take AIGC as the core analytical carrier to conduct systematic structured analysis of the graphic semantics and cultural connotations of traditional Chinese art resources, thus generating computable and standardized artistic knowledge units.This approach prevents algorithms from making superficial interpretations of traditional culture.In the art reorganization stage, AIGC combines the cultural symbols, aesthetic orientations, and industrial demands of the target country to generate various cross-cultural integration schemes. Students participate in aesthetic judgment and cultural negotiation through human-machine dialogue and parameter adjustment, forming a co-creation mechanism that combines technical generation with humanistic screening. In the art encoding stage, teachers and students convert the selected schemes into implementable design outcomes such as public art and cultural products. In the course practice, the teaching team guides students to digitally and intelligently deconstruct cultural carriers such as Chinese New Year paintings,

traditional clothing patterns, and folk image symbols, and uses generative models to complete visual re-encoding. During the process of image generation, style transfer, and combination reconstruction, international design language is integrated. Through project-based learning and collaborative creation, students explore innovative expression paths of Chinese cultural imagery and aesthetic spirit in contemporary visual communication and digital creative contexts, demonstrating the practical value of the methodological approach of AIGC technology in cross-cultural visual design teaching and its development potential at the operational level. It also confirms the collaborative effect of technical rationality and artistic sensibility, and further verifies the "translation" function of AIGC in cross-cultural design teaching.

3. The Innovative Path of AIGC Empowering Vocational Education to Promote Art Design Teaching Abroad

So within this model, AIGC actually plays two roles at once in overseas vocational art and design education. On one hand, it's a technical tool. On the other, it works like a cross-cultural translator. But here's the key point: it's not really about converting language or shifting visual forms. What matters instead is a deeper kind of re-encoding—one that happens at the level of artistic meaning itself. This whole human-machine co-creation process moves through three connected stages: art decoding, art reorganization, and finally art encoding. Take the decoding stage as an example. Teachers and students work with AIGC to break down traditional Chinese art resources. They look closely at the graphic symbols and the cultural meanings behind them. The goal is to turn those elements into computable units—bits of artistic knowledge that the system can actually work with.This will achieve coordinated improvement in teaching quality and industrial adaptability.

3.1. Abbreviations and Acronyms Curriculum System Reengineering: Establish the "AIGC + Cultural Workshop" module

Let's start with this: the curriculum system really matters—it's the foundation for making overseas vocational education work. But here's the problem. Traditional art and design programs in this context run into some pretty serious issues. For one thing, they don't adapt well across different cultural settings. For another, the teaching materials are often outdated. And then there's this persistent gap: technology keeps moving forward, but what's taught in the classroom doesn't always keep up with what the industry actually needs. So where does generative AI fit in? It offers a way to quickly build prototypes and, more importantly, to connect large language models with multi-agent systems in a much smoother way.This approach fosters a dynamic and adaptable knowledge ecosystem that continues to evolve, better aligning educational outcomes with real-world needs.

This provides a solid technical foundation for the deep integration and innovative

application of cross-disciplinary knowledge[8]. By building a modular curriculum system of "AIGC + Cultural Workshop" based on AIGC technology, it is possible to achieve precise alignment of course content, teaching resources, and local industry demands, taking into account both technical ability cultivation and cultural adaptation ability improvement.

So when you're thinking about course design these days, the old single-track approach just doesn't cut it anymore. We need something different. What's really needed is to bring in modules that mix hands-on technical training with cross-cultural thinking. And here's another thing. Course content has to stay up to date with where the industry is heading—sure, that matters. But it also needs to give students practical, usable tools. Tools that let them move quickly from theory to actual practice, and actually build real design skills along the way. Prompt engineering, for example, serves as a crucial link between creative intent and technical realization. By introducing it into the foundational curriculum, educators can better equip students to bridge the gap between conceptual ideas and their technical execution. On one hand, Dou bao can be introduced as a practical tool, as its Chinese understanding and multi-modal capabilities are suitable for Prompt Engineering teaching. Dou bao can support the generation of Chinese and English prompts in a conversational manner, and through structured interaction, help students master the precise expression of design intentions and operational skills, reducing cross-cultural design deviations and assisting students without professional backgrounds in producing professional design plans. It is also highly popular and easy to use, with strong teaching implementation. On the other hand, courses integrating Mid journey and cross-cultural design thinking can be offered, covering multiple design scenarios. For example, in the case of the European and American markets, the cooperation project between Jiaxing Nan yang Polytechnic College and RMIT University in Australia can be combined, integrating the advanced vocational education concepts of the Australian side and Western residential aesthetic design standards for teaching, while also taking into account functional requirements and cultural adaptation. At the same time, the course design should closely align with local industrial pain points and can incorporate scenarios such as digital exhibition role design and intangible cultural heritage creative development. For instance, in the international summer school project jointly held by Jiangnan University and Laguna College of Art and Design in the United States, the related courses were themed "AIGC Empowering Digital Innovation of Traditional Culture", introducing generative image models and organizing Chinese and American students to conduct cross-cultural design practices around Chinese traditional cultural visual elements. And in the "BRICS Skills Training Camp" at Shanghai Caoyang Vocational School, AIGC was introduced into digital exhibition teaching, where students used AI to complete the design of three-view diagrams of digital characters with intangible cultural heritage themes, making students recognize the

"online + AI" teaching model. Such real industrial demands can be directly transformed into course practical tasks, making the course content highly consistent with local employment market demands.

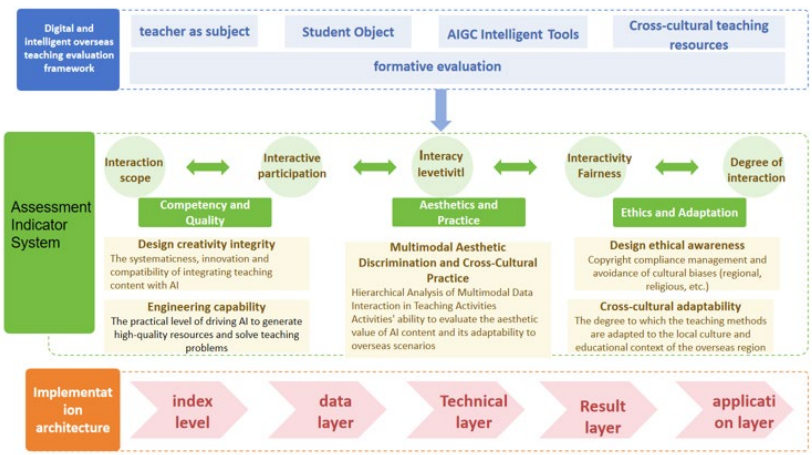
Here's the thing about building teaching resources for vocational education overseas. You can't just rely on static materials or try to use the same stuff for everyone—that simply doesn't work. What actually helps is putting together a more flexible model. One that combines a cloud-based library with locally adjusted, finely tuned content. This kind of approach does two things. First, it fills the gap when there aren't enough relevant case studies to draw from. Second, it makes sure the resources actually fit the different needs you see across regions.As a vivid localized practice sample, the Lao-Ban Workshop run by Liuzhou City Vocational College in Laos has landed AI-enabled teaching innovation in real overseas scenarios. It uses AI tools to convert teaching courseware into multilingual editions, which greatly improves the precision of professional content translation; the 11 sets of teaching resources developed via this mode have now obtained official certification from Laos' local education authority.

When you try to expand traditional art and design vocational education to other countries, you tend to run into the same old problems. Limited cultural flexibility. Outdated teaching materials. And a noticeable disconnect between what's taught and where industry technology actually is. So what's a good way forward? One promising answer is to make use of what AIGC technology offers—especially its efficiency and ability to adapt. If you build the curriculum around a modular "AIGC + Cultural Workshop," you get a system that's flexible and genuinely relevant. That kind of setup gives students the tools they actually need to do well in a fast-changing global environment.This lays a robust practical foundation for the comprehensive reconfiguration of the overall curriculum architecture. Specifically, in the top-level design of courses, the long-established linear design approach built on a single rigid logic must be thoroughly phased out. Prompt engineering can be integrated into foundational courses, and tools such as Dou bao and Midjourney can be employed to strengthen cross-cultural design teaching and align more closely with industry developments. For resource construction, a "cloud-based material library + localized fine-tuning" model should be adopted, generating and optimizing retrieval of adaptive materials through AIGC to solve the problem of material adaptation. This approach can achieve precise alignment of the curriculum with local industries and cultures, enhance students' core competencies, and provide support for the high-quality implementation of art and design vocational education going global.

3.2. Evaluation system upgrade: Establishing a "multimodal + dynamic process" evaluation paradigm

Let's talk about assessment. In today's digitalized cross-border teaching environment, the way most overseas vocational education programs evaluate

students has been pretty stuck in one place for a long time. They tend to focus almost entirely on the final outcome—what you turn in at the end. That's it. But here's the problem. This kind of rigid, outcome-only approach just can't handle three real-world demands that actually matter. First, teaching is a process, and it changes as it goes—you need to capture that dynamic. Second, cross-cultural factors are messy and multi-layered; a simple test at the end won't reflect that complexity. And third, smart learning environments now use all kinds of AI tools in different ways—how do you assess that kind of diversified integration with a one-dimensional system? You really can't.To tackle this challenge, the study puts forward a new framework for evaluating teaching through multimodal and interactive methods, all backed by intelligent technologies. The framework is built around four main elements: teachers take on the role of assessors, students are the ones being evaluated, AIGC serves as a smart tool, and cross-cultural teaching resources provide essential context. This structure aims to make teaching assessment more dynamic, relevant, and responsive to diverse eIts theoretical basis stems from the cross-fusion of constructivist learning theory, intelligent education technology theory, and cross-cultural education. Among them, the AIGC intelligent tools serve as the core enabling carrier, represented by mainstream products such as Chat GPT, Claude, and Gemini, and are widely applied in teaching design, resource generation, and interaction presentation. The teacher and student, as the dual subjects of teaching, respectively assume the roles of designers and learners. The AI-GC intelligent tools provide technical empowerment for digitalized teaching, while cross-cultural teaching resources are the fundamental support for ensuring the cultural adaptability of overseas teaching. The four core elements form an organic whole where the teacher leads, the student participates, technology is empowered, and resources are supported, jointly constituting the evaluation object system of digitalized overseas teaching.



This system, grounded in the analytical perspective that integrates external performance with internal mechanisms in educational evaluation, redefines the

relationship between the interaction dimension and the literacy dimension. In digitalized overseas teaching scenarios, the interaction dimension reflects the external behavioral characteristics of the interactive process among teachers, technology, and resources. The breadth of interaction is directly related to the completeness of creative design. Design competency determines the level of systematic integration between teaching content and artificial intelligence technology, as well as the degree of innovation, thereby shaping the scope and extensibility of interaction.Interaction participation is supported by the prompt word engineering ability, ensuring the efficient empowerment of AIGC tools and expanding the depth of interaction. The interaction participation degree is examined from two aspects of aesthetics and practice, and also measures the aesthetic value discrimination ability of teachers for multimodal teaching content, as well as the judgment ability of teachers on the compatibility of overseas teaching scenarios. It also reflects the depth of students' participation in teaching practice. Interaction fairness and interaction depth point to ethical adaptation. The design ethical awareness and cross-cultural adaptability jointly guarantee the effectiveness of value transmission in cross-cultural teaching.

The implementation framework consists of five interconnected links: the indicator layer, the data layer, the technology layer, the result layer, and the application layer. These layers are connected to form a closed loop for evaluation and feedback. The indicator layer breaks down the literacy and interaction dimensions into specific, quantifiable observable indicators, and sets relevant evaluation standards in combination with application scenarios of mainstream AIGC tools.The data layer collects multi-modal process data of teachers' teaching design, students' learning behaviors, AIGC application effectiveness, and compliance with cross-cultural resources around the four core elements. The technology layer relies on natural language processing and multi-modal data analysis methods, leveraging the technical advantages of mainstream AIGC tools to achieve intelligent evaluation of various indicators. The result layer outputs quantitative evaluation reports, concentrating on reflecting core conclusions such as teachers' ability deficiencies, students' participation levels, and the compatibility of technology and resources. The application layer feeds back the evaluation results to the teaching practice 环节，promoting teachers to optimize teaching design and enhance cross-cultural ethical awareness，and providing references for teaching management departments to improve resource allocation and the application norms of AIGC tools.

Assessment deserves close examination. In today's digitalized cross-border teaching environment, evaluation practices in most overseas vocational education programs have remained largely static for an extended period. The prevailing tendency is to focus almost exclusively on final outcomes—what learners submit at the end. Nothing more. Yet this rigid, outcome-only approach proves inadequate when confronting three practical demands that truly matter. First, teaching is inherently

dynamic and evolves over time; any assessment system must capture that ongoing process. Second, cross-cultural variables are complex and multi-layered—a single end-point test cannot reflect such intricacy. Third, smart learning environments now incorporate diverse AI tools in varied ways. The question then becomes: how can a one-dimensional system possibly assess that kind of diversified integration? The honest answer is that it cannot.Specifically, it resolves the persistent difficulty traditional models face in adapting to the dynamic evolution of teaching practice, the diversified application scenarios of AI technologies, and the multi-dimensional complexity inherent to cross-cultural teaching environments.By taking advantage of digital tools, this approach not only helps fine-tune teaching methods and update course materials but also drives ongoing improvements in the quality of overseas instruction. In this way, both teaching and curriculum can continue to evolve, making learning more effective for everyone involved.

3.3. Team Upgrade: Dual-Teacher Collaboration and Digital Intelligence Empowerment

Vocational art and design teaching today faces clear bottlenecks: weak overall capacity, repetitive and limited learning scenarios, and wide gaps in student learning abilities. Bring AIGC into the classroom, and new teaching and learning paths open up. Combine a "dual-teacher collaboration" model with smart tech as backup, and educators can streamline instruction while raising efficiency. For overseas students, that means faster skill acquisition and greater confidence in their own creative abilities..Both the industry and educational parties should jointly build a "dual-teacher" talent cultivation community. Based on the industry's development trends and the unique strengths of the educational institutions, they should jointly develop a set of standards that integrate professional perspectives, teaching and research efficiency, technical practical operation, and industry evaluation. Through institutionalized means, they should establish a quality map and behavioral benchmark for high-level teachers [12]. According to the characteristics of teachers at different growth stages, a hierarchical and classified training guidance system can be further constructed to provide precise support for potential teachers, enabling them to gradually become high-level "dual-teacher" talents, thus laying a solid foundation for the high-quality development of vocational education. The dual-teacher collaborative mechanism centered on overseas project leaders and AI application instructors breaks the traditional teaching model of "teachers leading the class and students passively accepting knowledge", and builds a dual-teacher co-guidance and virtual-real integration immersive teaching scenario. Its mechanism has covered the entire system of art design courses and has been fully integrated into all aspects of the curriculum system. The overseas project leader leads the establishment of an international innovative design workshop, and collaborates with AI application instructors to introduce the teaching model of

studio system from top overseas design universities, real projects from international first-line brands, and international design competition propositions into the teaching, integrating them with core courses such as visual communication and environmental design, and jointly developing course modules and project-based training contents that are both internationally oriented and locally adapted. The AI application instructor focuses on design creation, realizing the entire process from creative association to the implementation of the work, and providing customized AI teaching functions adapted to the scenarios. At the same time, they collaborate with the overseas project leader throughout the entire process from course development to outcome acceptance, building a deep collaborative work system for full-cycle education.

In terms of practical implementation, cognitive load theory [13] can serve as a guiding framework. Applying the“teacher-student-AI”triadic teaching interaction mechanism proposed earlier to actual teaching practice helps teachers optimize teaching content and presentation formats, and achieve rational allocation of students’ cognitive resources through positive teaching interactions.thereby reducing internal and external cognitive loads and improving the paths of related cognitive loads, and providing assistance for students' effective learning. In terms of the collaborative mechanism of teachers, implementing the triadic collaborative model of Chinese teachers, local teaching assistants and AI teaching assistants, forming a complementary teaching team [14]. In the art design teaching process, Chinese teachers can focus on the teaching of the Prompt Engineering framework application, AI design tool logic, etc., local teaching assistants mainly complete the local interpretation of aesthetic preferences and design industry norms, and AI teaching assistants rely on big data analysis of students' design shortcomings to push optimized cases for students to refer to and practice, while drawing on the natural interaction function of "Luban Workshop AI Think Tank", enabling teachers and students to search for teaching resources through natural language, alleviating various difficulties in cross-border teaching collaboration, and improving teaching effectiveness and local adaptation.

Recent enterprise surveys point to a recurring issue: university courses tend to lag two to three years behind fast-moving industrial technology. Students generally acquire basic operational skills—they learn how to use certain tools. But when it comes to applying those skills to ill-structured, real-world problems, many encounter significant difficulties [15].For the development of immersive teaching scenarios, AIGC visual generation tools such as Stable Diffusion and Midjourney offer a practical solution. They enable the creation of what can be described as "real-time design rehearsal" environments, where students can experiment, iterate, and learn in contexts that resemble professional practice.These tools deliver an intuitive creative experience of "what you see matches what you imagine", which helps students build confidence in their own design capabilities.

4. Conclusion and Outlook

Industry enterprise survey reports reveal that college curriculum content lags 2 to 3 years behind the rapid iteration of industrial technologies. Though students have a firm grasp of the basic operational skills of relevant professional tools, they still lack adequate practical ability to address real-world problems in actual work. [15]. If the goal is to create immersive teaching environments, educators can turn to AIGC tools such as Stable Diffusion and Midjourney. These technologies make it possible to simulate “real-time design rehearsal,” giving students a creative process where their ideas take shape instantly. In turn, this kind of hands-on experience can boost students’ confidence in their own design abilities.Based on the core theoretical logic of this paper, this study proposes an innovative path from three dimensions: course teaching, teacher-student evaluation, and faculty. It forms a complete teaching system with mutually supporting closed-loop operation, and comprehensively improves the adaptability and effectiveness of overseas art design teaching. The research value of this paper lies in the courage to break away from the traditional understanding of technical tools, and to deeply integrate the technical advantages of AIGC with the humanistic attributes of art design and the core goal of cross-cultural communication. Through the progressive human-machine collaborative creation mechanism of art decoding, art recombination, and art encoding, traditional Chinese aesthetic imagery can be transformed into visual language that is easy for overseas audiences to understand, while fully preserving the spiritual core of Chinese culture and fully respecting the local cultural traditions and aesthetic preferences, truly achieving the organic unity of skill training and cultural dissemination.

Looking to the future, the application of AIGC in enabling vocational education in art design for international expansion still holds vast potential for exploration. In the future, we can further improve the cross-cultural material library and intelligent translation algorithms, establish a sound AI design ethics and copyright protection mechanism, deepen the collaboration between schools and enterprises, and conduct joint research and teaching between China and other countries. Relying on overseas educational platforms such as the Lu Ban Workshop, we will continuously accumulate practical experience, promote in-depth dialogue between Chinese vocational education and international design education systems, and cultivate more comprehensive design talents with both technical capabilities and cross-cultural literacy for the "Belt and Road" initiative.

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