

Exploration of Lingnan Jade Carving Training Models from the Perspective of Industry-Education Integration

Hui Li^a, Qiuwan Zhang^b *

{^alihui@gzarts.edu.cn; Correspondence: ^bzqw@gzarts.edu.cn}

Guangzhou Academy of Fine Arts, Guangzhou 510261, China

Abstract. As Lingnan jade carving represents a significant intangible cultural heritage, adapting to the changes in societal development has become a critical issue in the development of the jade carving industry. Currently, jade carving education is challenged by a lack of educational resources, a disconnect between education and market demands, and a mismatch between the learning cycle and teaching methods. Faced with these challenges, the integration of industry and education is viewed as the future trend. This study explores various cooperative models, including academic year segmentation, "customized training" model, and flexible training models, with the aim of aligning jade carving education with market needs and achieving the integration of industry and education. Furthermore, based on this foundation, the study proposes enhancements to these models, including optimizing the curriculum and teaching system, deepening school-enterprise cooperation, and jointly creating master studios to refine the industry-education integration model.

Keywords: Jade Carving Education; Training Models; Industry-Education Integration

1 Introduction

Lingnan jade carving, also known as Guangfu jade carving, stands as a unique artistic treasure within China's Lingnan region, boasting a rich history and exquisite craftsmanship. The development of Lingnan jade carving has not only integrated a variety of carving techniques, such as bamboo, wood, and ivory, but also blended with Southeast Asian cultures, culminating in robust forms, intricate details, and a style marked by lightness and innovation [1]. This evolution of the art form not only reflects its profound cultural heritage but also faces multiple challenges, such as the convergence of styles, the difficulty in balancing technical refinement with artistic innovation.

Despite its irreplaceable status in the inheritance and promotion of intangible cultural heritage, talent cultivation has emerged as one of the key challenges restricting the further development of Lingnan jade carving in the context of rapid modern societal advancement. Specifically, the process of cultivating talents in Lingnan jade carving encounters three major dilemmas:

Firstly, the school has Insufficient educational resources. Facing the complex and varied learning needs of jade carving art, colleges are finding it increasingly challenging to meet the demands for jade carving educational resources. This shortage is not limited to material facilities but extends to a lack of high-level faculty and systematic courses, directly impacting students' learning outcomes and the cultivation of their creative abilities. Secondly, there is a

disconnection between education and market. A significant gap exists between jade carving education and market demands. School education often emphasizes the transmission of skills and the cultivation of artistic concepts while neglecting the actual needs and aesthetic trends of the market, leading to difficulties for graduates in quickly adapting to the market[2]. Thirdly, students' training mode does not match the demand of teaching mode. The learning of jade carving art is a long-term and complex process, and traditional education models often fail to meet the needs for in-depth learning and continuous creation. This mismatch exacerbates the difficulties students face in deepening their skills and exploring innovation.

In the inheritance and development of Lingnan jade carving art, the lack of effective solutions to these dilemmas of talent cultivation not only diminishes the quality of inheritance but may also lead to a discontinuity in the transmission of national culture, severely impacting the protection and development of intangible cultural heritage. Against this backdrop, exploring the integration of industry and education becomes key to addressing these challenges. This model, by integrating educational resources and industrial practice, aims to provide students with a broader platform for learning and practice, aligning educational content more closely with the forefront of industrial technological needs and market changes, thereby enhancing the pertinence and efficacy of education.

The implementation of the industry-education integration model in cultivating Lingnan jade carving talents can effectively resolve the issue of insufficient educational resources and strengthen the cooperation between schools and enterprises, building a bridge for students from academia to the workplace. Through the support of technology, internship bases, and faculty provided by enterprises, students can gain a deep understanding of market demands and craftsmanship techniques in practice. Furthermore, involvement in actual projects not only enables students to master the latest technologies and processes but also cultivates their aesthetic sense and design abilities, better preparing them for market demands.

Moreover, the industry-education integration holds significant importance for the inheritance of Lingnan jade carving as intangible heritage. By combining traditional crafts with modern design concepts and marketing courses, students can imbue traditional art with new vitality while preserving its core values. This interdisciplinary approach to learning and creation aids in the dissemination and development of Lingnan jade carving art in modern society, achieving a fusion of tradition and modernity.

This model also emphasizes the combination of theory and practice, fostering a deep craftsman spirit among students. Through enterprise-based practical learning, students can not only learn exquisite skills from experienced masters but also personally appreciate the importance of the craftsman spirit. The cultivation of this spirit provides a solid foundation for the continuous inheritance and development of Lingnan jade carving art.

2 The Impact of Industry-Education Integration on the Intangible Cultural Heritage of Jade Carving

The model of industry-education integration offers a novel perspective and methodology for the protection and inheritance of intangible cultural heritage, particularly for the art of Lingnan jade carving. This approach supports the preservation, inheritance, and innovation of

traditional arts across three interconnected levels, ensuring the effective protection and development of intangible cultural heritage within modern society.

Firstly, the industry-education integration model strengthens the preservation and inheritance of traditional arts. By closely aligning the educational and learning processes of Lingnan jade carving with industry demands, this model not only ensures that the transmission of skills is more relevant to practical applications but also enhances students' appreciation and respect for the value of traditional crafts. Collaboration between academia and the industry provides students with opportunities to learn and practice Lingnan jade carving skills directly from experienced craftsmen, thus effectively preserving the authenticity and purity of this intangible cultural heritage.

Secondly, industry-education integration enables traditional arts to adapt to the demands of the modern market. Through this model, students learn traditional skills while also being taught how to apply these skills within the contemporary market environment. This pedagogical approach encourages students to explore the potential for integrating traditional arts with modern design concepts, thereby ensuring that traditional arts can adapt to market changes and demands, and maintaining the vitality and viability of intangible cultural heritage.

Lastly, the industry-education integration model fosters innovation and development within intangible cultural heritage. While inheriting traditional arts, students and artists are encouraged to explore innovative modes of expression, blending traditional arts with contemporary lifestyles to create artworks that retain traditional charm yet meet modern aesthetic standards. This approach not only ensures the protection and transmission of intangible cultural heritage but also allows it to be widely disseminated and developed in forms that are novel and acceptable to the public, thereby enhancing societal awareness and interest in intangible cultural heritage and laying a solid foundation for its long-term protection and active utilization.

In summary, the industry-education integration model lays out an effective pathway for the protection and development of intangible cultural heritage through its promotion of traditional art preservation and inheritance, enhancement of market adaptability, and innovation along with increased public acceptance of intangible cultural heritage. This model not only ensures the continuous transmission of traditional skills associated with Lingnan jade carving but also significantly boosts the vitality of intangible cultural heritage in contemporary society, ensuring its core traditional values are preserved while being promoted and developed in innovative and publicly accessible forms.

3 Industry-Education Integration Models

Industry-Education Integration represents an innovative educational paradigm aimed at fostering a closer alignment between educational offerings and industry demands. This approach combines practical experience with theoretical learning to enhance students' professional skills and core competencies. In contrast to traditional school-enterprise cooperation, Industry-Education Integration delves deeper into aligning educational content and methodologies with industrial development, striving to achieve the practical application of knowledge and specialization of skills throughout the student's educational journey. This

model transcends mere collaboration between educational institutions and enterprises, embodying a multifaceted integration process that encompasses various dimensions such as time, space, resources, and organization, with the goal of creating a mutually beneficial educational ecosystem. The model primarily encompasses the following formats:

3.1 Academic Year Segmentation

The introduction of the academic year segmentation model arises from a strategic response to bridge the gap between educational provisions and the evolving needs of the industry. This innovative approach seeks to address the perennial challenge of resource limitations within educational institutions, particularly in terms of aligning curriculum with the dynamic and often specialized demands of the modern workforce. The primary objective of integrating academic year segmentation into the education-industry integration model is to forge a more cohesive and reciprocal relationship between educational content and industry requirements.

Resource constraints in educational settings often manifest as a lack of real-world application opportunities, outdated curriculum, and insufficient exposure to the latest industry practices. Traditional education models, while foundational, sometimes struggle to keep pace with the rapid technological advancements and the specific skill sets sought after by employers. By adopting the academic year segmentation model, educational institutions can effectively augment their resources through strategic partnerships with industry, thereby offering students a curriculum that is both relevant and rich in practical experience.

The segmentation strategy, particularly through the "2+1" and "4+1" models, enables a structured yet flexible framework where theoretical studies are complemented by hands-on training and internships. This ensures that students not only acquire the necessary theoretical knowledge but also gain valuable industry experience, thereby enhancing their employability and readiness for the workforce.

This is primarily divided into "2+1" [3] and "4+1" models [4]. The "2+1" model envisages students dedicating the initial two years to an immersive blend of theoretical learning and practical training within the educational institution, focused specifically on the foundational aspects of jade carving, from understanding the properties of jade to mastering basic carving techniques. The subsequent year transitions into an on-the-job internship, providing students with a platform to apply their acquired skills in real-world settings, under the mentorship of seasoned jade carving professionals. This phase not only cements their practical skills but also integrates them into the broader ecosystem of jade carving artistry and commerce, significantly enhancing their employability within this niche sector.

Parallely, the "4+1" model innovates upon the traditional academic schedule, allocating four days a week to academic studies that cover both the theoretical underpinnings and the broader contextual knowledge of jade carving, such as its historical significance and its role in contemporary art and culture. The unique addition here is the fifth day, devoted entirely to hands-on skill training within a jade carving studio. This day is meticulously planned by jade carving masters, who curate personalized learning experiences that adapt to the evolving interests and skill levels of students. This not only ensures a rich, hands-on learning experience tailored to each student's developmental trajectory but also fosters a deep, practical understanding of the artistic and technical nuances of jade carving. Enterprises set up practical operation and practice service bases for students in the industry market, with teaching, training

and practice functions, equipped with special management personnel and internal mentors, in accordance with the principle of practical, practical and effective teaching. Since 2017, our school has established an off-campus practice base and continuously sent interns to enterprises as shown in Figure 1. Students can quickly master practical skills through enterprise internship, forming a virtuous circle for the sustainable development of the practice base.



Fig.1. Students study in off-campus training bases

In essence, the adoption of academic year segmentation strategies is a forward-thinking move towards mitigating the constraints faced by educational institutions due to limited resources. It represents a concerted effort to harmonize educational content with industry demands, thereby facilitating a more integrated, practical, and sustainable model of education that prepares students for the challenges and opportunities of the contemporary and future job market.

3.2 The "customized training" model

In the context of jade carving education within the framework of industry-education integration, the "customized training" model stands as a pivotal strategy designed to bridge the inherent gap between academic instruction and market demand. The "customized training" model is defined by its focus on creating a direct link between vocational education providers and industry demands. Enterprises engage with schools to "place orders" for students who meet specific criteria tailored to the companies' developmental needs. This model not only ensures that students receive highly relevant and practical training but also guarantees a smoother transition into the workforce, as their skills are closely aligned with the specific requirements of their future employers.

The "customized training" model commences with a thematic focus, wherein enterprises establish specialized courses within educational institutions based on their developmental needs, facilitating the screening of students in practice and guiding graduates towards careers in the jade industry. These enterprises play a crucial role in the development of the curriculum, engaging in the training and educational management, and cover part of the training expenses, such as sponsoring raw materials and processing equipment. Taking the course "Jade Carving Art" as an example, enterprises and faculty members collaboratively participate in and guide the students' assignment designs. Following the guidance on assignment design by enterprise mentors, hands-on instruction is provided as shown in Figure 2. Finally, students design and complete jade design and carving under the guidance of teachers and part of students' course work in this curriculum show in Figure 3. This training model is characterized by trends towards shorter training durations, flexible selection processes, and deep involvement in the training and educational activities, highlighting a certain degree of exclusivity in the order-based approach. This training model is characterized by trends towards shorter training durations, flexible selection processes, and deep involvement in the training and educational activities, highlighting a certain degree of exclusivity in the order-based approach.

The primary purpose of this model is to mitigate the natural discrepancy between the skills taught in educational settings and those demanded by the market. By fostering a closer collaboration between jade carving studios and vocational schools or colleges, the "customized training" model ensures that the curriculum is directly informed by the latest trends, techniques, and needs of the jade carving industry. This alignment benefits students by providing them with a competitive edge in the job market, as they possess the precise skills and knowledge sought by employers.



Fig.2. Faculty members and teachers discuss students work of "Jade Carving Art" course



Fig.3. Part of work in the course "Jade Carving Art"

The advantages of the "customized training" model in jade carving education are multifaceted. Firstly, it enables a more efficient allocation of educational resources towards training that is highly relevant and demand-driven, thus enhancing the employability of graduates. Secondly, it facilitates a deeper industry engagement with the educational process, allowing for a continuous feedback loop that ensures the curriculum remains current and dynamic. Lastly, this model promotes innovation in teaching and learning methods by integrating real-world projects and challenges into the academic environment, thereby enriching the learning experience with practical insights and skills.

In summary, the "customized training" model represents a strategic approach to vocational education in jade carving, aimed at harmonizing educational outcomes with industry expectations. This model not only addresses the immediate needs of the jade carving industry for skilled artisans but also prepares students for successful careers by providing them with a tailored and market-responsive education.

3.3 Flexible training

Flexible training in jade carving education is a modern adaptation of the traditional apprenticeship model, designed to meet the specific needs of the industry and the learners. It allows for a select group of students, identified through a rigorous course screening and mutual selection process, to engage in extended learning opportunities beyond the conventional classroom setting. These students spend their extracurricular time in laboratories or studios, receiving direct mentorship from seasoned instructors.

An exemplary case illustrating the efficacy of the flexible training model within the context of industry-education integration involves the tailored development of a student apprentice in the field of jade carving. This apprentice, concurrently enrolled in an academic institution,

engaged in apprenticeship at a studio, dedicating spare time to learn and practice jade carving. Over a period of four years, this apprenticeship allowed the student to acquire fundamental operational techniques in jade carving, alongside fostering a capacity for innovation, which enabled the apprentice to independently complete artworks and participate in competitions. A significant achievement of this apprenticeship was the creation of the piece titled "The Honor of Flesh," which was selected for inclusion in the "New Generation - 2nd Young Sculptors Exhibition," as illustrated in Figure 4. This case exemplifies the success of the flexible training model and its applicability to nurturing young scholars, demonstrating how personalized training plans, aligned with individual learning paces and interests, can effectively equip students with the intricate skills and innovative capacities essential for mastery in jade carving. These students are chosen based on their interest, aptitude, and performance in preliminary courses, facilitating a deep dive into the craft through extended learning sessions in the studio. Meanwhile, instructors develop bespoke training plans, while enterprises contribute by supplying raw materials and providing intermittent expert guidance.

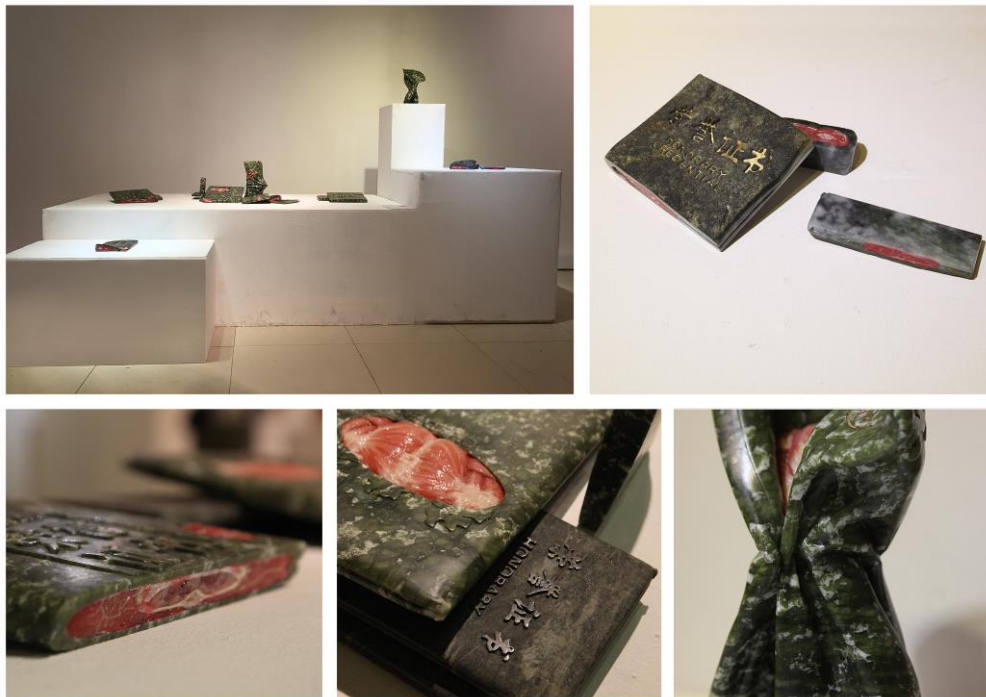


Fig.4. "Honor of Flesh" by the studio Apprentice

The core aim of the flexible training model is to bridge the gap between the limited exposure provided by standard educational timelines and the comprehensive skill set required by the jade carving industry. By extending the learning period and offering targeted, hands-on experience, this model ensures that students are not only proficient in technical skills but also well-acquainted with the demands and expectations of the professional world.

The flexible training model in jade carving education is distinguished by its nuanced approach to crafting pedagogy, which is evident through several key characteristics. Firstly, the

precision in order quantities is paramount; enterprises provide a consistent flow of orders, facilitating an environment where students can apply their learning in practical settings under the dual mentorship of academic instructors and industry professionals. This arrangement ensures that the educational experience is deeply rooted in the real-world demands and evolving trends of the jade carving sector. Moreover, the recognition of a disparity between traditional classroom education and the comprehensive skills required for societal and industrial integration prompts the model to advocate for an extended training period. Such an elongation of the educational trajectory is instrumental in refining the students' craftsmanship to align with professional standards, thereby bridging the educational gap. Concurrently, the apprenticeship experience profoundly impacts the students, as it fosters not only the acquisition of technical skills but also the development of a deep-seated understanding of professional knowledge, jade culture, and theoretical frameworks. This holistic approach to education cultivates comprehensive qualities within the learners, equipping them with the capabilities to navigate the multifaceted challenges and seize the opportunities within the jade carving industry effectively. Thus, through a cohesive integration of these elements, the flexible training model emerges as a key strategy in preparing students for a successful career in jade carving, emphasizing the importance of practical experience, extended learning, and comprehensive development.

The flexible training model in jade carving education represents a significant shift towards a more immersive and industry-relevant learning experience. By combining the traditional values of apprenticeship with modern educational techniques, this model addresses the critical need for specialized skill development, extended learning opportunities, and comprehensive professional preparation. Through precision in training, extended periods of mentorship, and the cultivation of comprehensive qualities, students are exceptionally well-prepared to enter and excel in the jade carving profession, ensuring the preservation and innovation of this traditional art form in contemporary contexts.

4 Promotion and enhancement

Jade carving education under the industry-education integration model aims to effectively enhance students' professional skills and innovative abilities through measures such as optimizing the curriculum system reform, deepening school-enterprise cooperation, and jointly creating master studios. These efforts are designed to promote the inheritance and development of jade carving art and meet the modern societal demand for jade carving talents.

4.1 Curriculum System Reform Optimization

Within the context of industry-education integration, the reform of the jade carving education curriculum system is essential for enhancing educational quality. By implementing the "2+1" and "4+1" models, schools are able to significantly enrich teaching resources, combining theoretical and practical learning. Particularly, through collaborative teaching with renowned folk jade carving masters and craftsmen, not only can students' levels of jade carving skills be elevated, but their understanding of jade carving art can also be deepened. Inviting these skilled professionals into the classroom means that students can gradually improve their foundational theoretical knowledge and jade carving technical skills under the joint education

of school teachers and professional jade carvers. Moreover, resource sharing between schools and enterprises provides students with practical training sites. The extensive development of productive teaching activities by both parties not only saves economic costs for enterprises but also offers students abundant practical operation opportunities.

4.2 Deepening School-Enterprise Cooperation

Deepening the cooperation between schools and enterprises, tapping into enterprise resources, and enriching enterprise orders are another key direction for enhancing jade carving education. Through in-depth cooperation with enterprises, schools can design courses and project training based on market demands and enterprise orders, making education content more aligned with actual needs[5]. Enterprises can not only provide specific order themes for student creation but also form a virtuous cycle by increasing the quantity of orders, thereby promoting the enhancement of students' skills and innovative abilities. In this process, the deepening of the "customized training" model provides students with learning and practice opportunities closely tied to industry development, helping them better adapt to their future careers.

4.3 Joint Creation of Master Studios

The flexible training model, by extending the duration of teaching, provides broader learning opportunities for jade carving education. In the future, attempting to jointly create master studios will serve as an effective means to support the flexible training model. These studios offer students additional spaces for learning and practice, thereby compensating for the shortcomings of traditional school education's limited time. Through master studios, students can engage in deeper project practices under the close guidance of professional instructors, not only enhancing their skills but also significantly improving their innovation and design thinking[6].

In summary, jade carving education under the industry-education integration model aims to effectively enhance students' professional skills and innovative abilities through measures such as optimizing the curriculum system reform, deepening school-enterprise cooperation, and jointly creating master studios. These efforts are designed to promote the inheritance and development of jade carving art and meet the modern societal demand for jade carving talents.

5 Conclusions

As society continuously progresses and technology evolves, the education development of Lingnan jade carving has encountered significant impacts. To adapt to these societal and technological changes, the concept of industry-education integration has been applied in the realm of jade carving education. Currently, a gap exists between Lingnan jade carving education and market demands, characterized by limited teaching resources and a relatively slow growth cycle for students. Faced with such challenges, education in this field must adopt a variety of teaching models to cultivate talent, including academic year segmentation, "customized training" model and flexible training model. Through these methods, the integration of industry and education is realized. However, these cooperative models still have their shortcomings. In the future, continuous efforts are needed to enhance and optimize the curriculum and teaching system, deepen school-enterprise cooperation to expand resources,

and jointly create master studios to provide students with a more diversified learning environment. These efforts will gradually promote the development of the jade carving education sector and have a profound impact on the intangible cultural heritage transmission of jade carving education.

Acknowledgments: This study is supported by the project “Individual academic improvement projects in the 2024 project library of Guangzhou Academy of Fine Arts” (grant number 24XSC34).

References

- [1] Qiang, L.: Research on innovation of jade culture industry in Guangdong. *Decoration*. pp.125-126 (2013)
- [2] Chen, J. Pastore, F.: Dynamics of returns to vocational education in China: 2010-2017. *Humanities & Social Sciences Communications*. pp.118-133 (2024)
- [3] Zuguang, Y: Research on the mechanism of school-Enterprise Cooperation in Vocational Education. *China Vocational and Technical Education*. pp. 5-11(2009)
- [4] Pei, Y. Man, Z. Wentao, Z. et al: Research on teaching practice of jade carving studio under the "4+1" model of modern apprenticeship system. *Modern Vocational Education*. pp. 48-49 (2021)
- [5] Pavlin, S. Stanley, J.: Exploring learning of vocational education and training students in European countries. *Annales: series historia et sociologia*.pp. 407-418 (2014)
- [6] Lili, Y. : Analysis of school-enterprise cooperation's promotion and improvement of jade carving major teaching. *Art Science and Technology*.pp. 83-85(2018)