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Career Skills Readiness of Chinese Students Majoring in Digital Media Art and Design: A Groundwork for Skills Enrichment Program

Hanhua Chen*, Layla P. Padolina

School of Education at the Philippine Women's University manila 0900, Philippines
*Corresponding Author Email: 2021t1536@pwu.edu.ph

ABSTRACT

With the rapid development of Internet digital information, mobile applications, digital media and website construction have become highly popular and popular, especially with the popularity and drive of smart phones, digital media has become an inseparable element of public life, and Chinese digital media art and design (hereinafter referred to as "China digital Media major") has become the mainstream of college majors in China. The object of enrollment expansion, resulting in uneven student talent. This paper discusses how to professionalize digital media students under the advantages of mainstream majors, how to realize the effective connection between college training and enterprise needs, and how to realize the integration of production and education. The vocational skills readiness of Chinese digital media majors can be obtained through the questionnaire survey of employers and students in related majors. The results will be used as the basis for the professional skills enrichment plan to help students better understand the needs of employers, carry out vocational skills learning with plans and goals, and achieve the ultimate purpose of employment.

KEYWORDS

Chinese Digital Media Art and Design; Professionalization; Integration of Industry and Education; Vocational Skills Preparation; A Groundwork for Skills Enrichment Program.

1. CHAPTER ONE: RESEARCH BACKGROUND AND THEORETICAL BASIS

1.1. Research Background

As an educator teaching majors related to digital media arts and design, the proponent of this study has witnessed first-hand the development of Chinese students in the field of digital education and their preparation for professional employment. Just as artistic literacy is essential for pre-service art teachers, mastering digital media art and design requires a subtle combination of technical skills, fine art appreciation, creative thinking, and industry specificity. This paper explores the key dimensions of vocational skill preparation for Chinese digital media art and design students, laying the foundation for targeted skill enrichment programs.

This study aimed to examine the career skills readiness of Chinese students majoring in digital media art and design, the results of which will serve as a groundwork for skills enrichment program.

Specifically, it sought answers to the following:

(1). What are the career skills required for digital media art and design graduates as perceived by employers?

(2). How do the respondents assess the career skills readiness of Chinese students majoring in digital media art and design in terms of:

1) Knowledge and Professional Skills;

2) Communication and Expression Skills;

3) Innovative Thinking and Aesthetics;

4) Practical Abilities;

5) Teamwork Skills?

(3). Is there a significant difference in the respondents' assessment of the career skills readiness of Chinese students majoring in digital media art and design?

(4). What are the challenges encountered in enhancing their career skills readiness as

viewed by the employers and the future employees?

(5). Based on the findings, what Skills Enrichment Program may be proposed?

1.2. Theoretical Framework

This study was anchored on the Career Development Theory by Donald Super.

Source: Super, 2020

Figure 1. Career Development Theory Framework

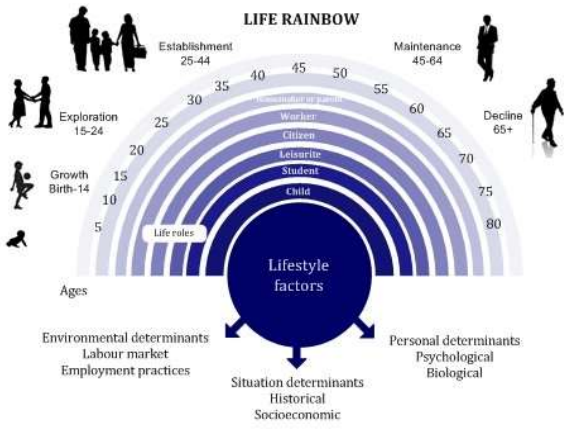

Figure 2. Career Development Theory

The Career Development Theory provide a comprehensive understanding of how individuals develop, their career interests competencies, and aspirations over time. Super's theory emphasizes the importance of self-concept and identity in career development, recognizing that career maturity and readiness evolve through different life stages (Super, 2020),which categorizes individuals and work environments into six types-Realistic, Investigative, Artistic, Social, Enterprising, and Conventional-highlighting the importance of congruence between a person's career interests and their work environment.

Based on these theoretical frameworks, the study investigates significant differences in the respondents' assessment of career skills readiness among students, identifies challenges in enhancing career skills readiness from the perspectives of employers and future employees, and proposes a Skills Enrichment Program tailored to address identified gaps and challenges. The integration of these theories ensures a holistic approach to understanding and improving the career skills readiness of digital media art and design students in China.

1.3. Conceptual Framework

The focus of this study is to assess the vocational skill readiness of Chinese digital media arts and design students and identify effective strategies to enhance their skills through a skill enrichment program, as well as the challenges faced by the skill upgrading program, using the conceptual framework shown in Figure 3.

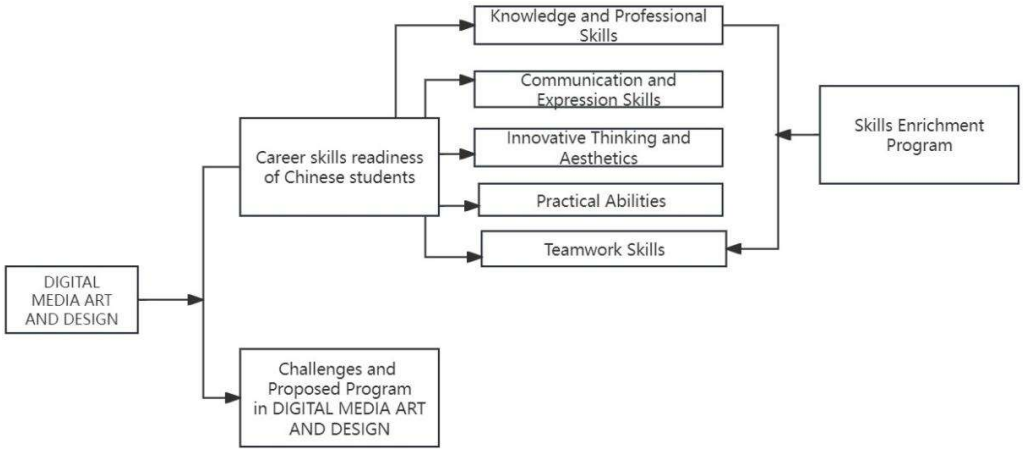

Figure 3. Conceptual Framework of the study

As shown in Figure 3, insights gained in assessing the career skills readiness of Chinese students majoring in digital media art and design, together with strategies and challenges encountered in enhancing these skills, were used to craft a comprehensive skills enrichment program. Career skills readiness, as defined in the study, was categorized into five key dimensions: Knowledge and Professional Skills; Communication and Expression Skills; Innovative Thinking and Aesthetics; Practical Abilities; Teamwork Skills.

2. CHAPTER TWO: VOCATIONAL SKILLS RESEARCH METHODS AND RESULTS ANALYSIS

Based on these five dimensions, the researcher combined the Career Development Theory Framework in the theoretical framework to develop a career skills assessment questionnaire. This questionnaire

assessed the career skills readiness of students from the perspectives of employers, educators, and the students themselves. Meanwhile, the best strategies employed in enhancing career skills readiness, as well as the issues encountered, were derived from the results of interviews conducted in this proposed research. Finally, a professional skills enrichment program for students majoring in digital media art and design was developed based on the questionnaire assessment and interview content.

Problem 1. The career skills required for digital media art and design graduates as perceived by employers

Table 1. Excerpts from an employer seminar on the skills needs of Chinese digital media art and design students

THEME	Significant Statement
Knowledge and skills	An excellent art designer should first master a variety of mapping or design software, which is just like an excellent shooting athlete, first master a variety of shooting firearms, if you cannot use firearms, your shooting ability is no matter how strong. Therefore, students of digital media art and design should not only have theoretical knowledge as the foundation, but also have the support of corresponding professional practical skills, in order to be a qualified digital media art designer. (Employer 1)
	At present, graduates always need six months to one year to adapt to the professional skills required by the company's market, including the mastery of design software, the understanding of professional knowledge or the control of customer knowledge, etc., so students need to contact the market more, collect more auxiliary knowledge outside their major, or learn from each other across majors, etc. Are an effective supplement to their own professional ability. (Employer 2)
	At present, the computer room of the university is used in class, the teacher will leave after class, and the students will not take the initiative to study back in the dormitory. Most of the practical operation mode mainly copes with the teacher's homework, resulting in the professional theory of the school cannot be connected with the reality, let alone the industry or market standards. Therefore, how to increase the interaction and practical training between students and enterprises has become a more urgent problem to be solved in China's digital media art and design. (Employer 3)
Communication and expression skills	Students majoring in digital media are more active than students of other majors. They dare to express themselves and like to express themselves. Of course, the stability is still poor, and they are prone to overactivity.(Employer 4)
	Students like to play online games when they go to school and come back to dormitory. Online games require teamwork to complete tasks or combat operations, which exercises their communication and expression ability to a certain extent, because if the two sides of the battle are not clear or the communication is not clear, they will lose the battlefield. In addition, art students are more thoughtful, glib and sensitive in their thinking. Personalization and publicity push them to constantly hone their eloquence and expression skills. (Employer 5)
	Nowadays, China's social grid is developing rapidly, and many modern Internet celebrities dare to expose themselves online. As students majoring in digital media, they have more exposure to Internet celebrities, and their previous interactions will promote the improvement of communication and expression skills. Therefore, students of this major generally have strong communication and expression skills. (Employer 6)
Innovative thinking and aesthetic	Fresh graduates often enter society with fresh and active ideas, love to show off, always want to express their personal value, and often make breakthroughs in innovative thinking. (Employer 7)
	Nowadays, art students tend to have a personalized aesthetic, and their aesthetic perspective is relatively one-sided from the comprehensive perspective of society, especially their lack of understanding of social needs, so it is difficult for them to cater to the customer's perspective to create beauty, and they are easy to indulge their narcissism. (Employer 8)
	Students love performance because they like to be recognized by others, if others recognize, they will perform better, they can think freely, really only you cannot think, not they dare to think, so the accumulation of innovative ideas, will bring great complement to the company. (Employer 9)

	Aesthetics is just a term for them, I once talked to a few new graduates about their views on aesthetics, they told me very frankly "anyway, beauty is beauty, I like it, if the customer does not like it, I think of a way to let him like it, anyway, do not want to cater to the customer to create their own do not like the work." (Employer 10)
Practical ability	Students have little contact with the society, the school can provide limited practice places, students' overall practice ability is not good, and students' grasp of design software and proficiency are not high, which restricts the work efficiency to a certain extent. (Employer 11)
	Any theoretical learning needs to be feedbacked and verified through practice. Schools understand this truth while educating students, so practical ability is very necessary. (Employer 12)
	In my opinion, although they are not like the designers working in the company, who often use the computer to complete the company's orders, there are relatively few opportunities for practical exercise and purpose exercise, they will often participate in various competitions organized by the society or the industry, and their growth and achievements in the competitions can well reflect the results of their practical ability. (Employer 13)
	Yes, internship in a company is actually a kind of practical ability improvement for graduates, and professional skills can also be well improved. In addition, they are young and like to contact different things, so their practical ability is not too bad. (Employer 14)
	Practical ability should reflect multiple perspectives, as long as you can complete the task, at the same time can think from the perspective of customers, give play to their own advantages to solve problems, so the strength of practical ability should not be limited to a certain aspect, but it is indeed a necessary growth condition. (Employer 15)
Teamwork skills	The addition of digital media students can really enhance the capabilities of the team, they are young and energetic, can maximize the overall activities of the work team, and can drive the efficiency of the team. (Employer 16)
	Fresh graduates are really fresh and want to distinguish themselves, especially if they have more prominent personalities. They take on the task of the company, want to play independently, often cannot do any good works, and even be the requirements of the market and customers to flatten their own personality ideas, so the team's advice is crucial. (Employer 17)
	We have been struggling in the market for many years, and the knowledge market demands mature works that meet the tastes of the public, which are different from the competition projects that students come into contact with during school. The competition has the first, second and third prizes, even if not many people like it, as long as there is recognition, there is a chance to win the prize, which is deviated from the market, because the market is profit-seeking, even if you think that the designed works generally only need to be paid by customers, You are successful, on the contrary, you do Tianma Longfeng, but finally the customer is not satisfied, will lose the value and significance of the product, so team cooperation, everyone has seen, set the public thinking and appreciation of the perspective, the probability of success of the work is higher. (Employer 18)
	In fact, good works also need to have a certain unique personality beauty, otherwise too popular will not reflect the beauty of artistic value, therefore, the embodiment of personality can sometimes have unexpected harvest than the team opinion, of course, the team gathers the public eye, indeed more in line with the market demand. (Employer 19)
	More than the collective opinion of the team, fresh graduates are eager to create artistic things rather than popular products, in general, although there are differences, but everyone has a higher degree of identification of team assistance, indicating that the strength of the team is greater than the strength of the individual, and the strength of the individual can obtain higher performance value in the team. (Employer 20)

Theme 1: Knowledge and professional skills

Knowledge and professional skills are crucial because a thorough understanding of industry standards, tools, and technologies is essential for producing high-quality digital media content that meets market needs. Graduates of the digital media art and design field should have a solid foundation of professional knowledge, including design principles, aesthetic theories, digital tools and technologies, etc. They need to be proficient in relevant software, such as the Adobe suite (Photoshop, Illustrator, InDesign, etc.), 3D modeling and animation software (such as Maya, Blender, Cinema 4D, etc.), and web design and interactive design software (such as Sketch, Figma, XD, etc.). At the same time, it is

also crucial to have a good understanding of the latest technologies and trends in the industry, as well as the ability to continuously learn and improve oneself.

Theme 2: Communication and presentation skills

Communication and expression skills are crucial because they enable graduates to effectively convey their ideas and collaborate with clients and team members to ensure that projects meet creative and business objectives. During the design process, graduates need to clearly and accurately express their design ideas, intentions, and thoughts. Good communication skills help them communicate effectively with team members, clients, or other stakeholders. In the proposal, design review, and delivery stages of a project, expressive ability is particularly important, as it can help them clearly articulate their design solutions and proposals. This is a skill that is rarely emphasized in digital media-related courses in China, so only by developing a joint training program between schools and enterprises can we bring enterprises into the classroom and send students out into the market to experience and improve their communication and expressive abilities. Communication and expressive ability reflect the key to the success of a project.

Theme 3: Innovative thinking and aesthetics

Innovative thinking and aesthetics are valued because the digital media field relies on creativity and visually appealing, unique designs to stand out in a competitive market. The field of digital media art and design emphasizes innovation and creativity. It enables graduates to have the ability to think independently and solve problems, and to propose novel design concepts and solutions. At the same time, it requires graduates to have a keen sense of aesthetics and good artistic cultivation, enabling them to grasp the beauty and style

of design, and to combine innovative and aesthetic thinking to make them stand out in the design field.

Theme 4: Practical ability

Practical abilities are the necessary conditions for applying theoretical knowledge to real scenarios, ensuring that graduates can efficiently execute projects and respond to actual challenges. Practical abilities are the ability of graduates to apply the knowledge they have learned to actual projects. For graduates related to digital media art and design, having the ability to transform theoretical knowledge into practical skills is essential. By participating in actual projects, internships or competitions, graduates can accumulate practical experience and enhance their ability to solve real-world problems. Therefore, practical abilities also manifest in the overall grasp of projects and scheduling, as well as the ability to respond to unexpected situations and solve problems.

Theme 5: Teamwork skills

Team collaboration skills are equally important in the collaborative environment of digital media projects. Coordinating efforts and utilizing different talents can bring more successful and cohesive outcomes. Digital media art and design projects often require the collaboration of multiple individuals. Therefore, graduates should possess team collaboration skills, able to effectively communicate and cooperate with team members. They can understand each other's strengths and weaknesses, allocate tasks and resources appropriately, and maximize the advantage to ensure the successful implementation and completion of the project. In team building, graduates should also possess certain leadership and influence skills, which can help guide and motivate team members to work together towards the design goal.

In summary, employers have a range of professional skills requirements for graduates of digital media arts and design, including expertise, communication and expression, creative thinking, practical skills, and teamwork. These requirements are aimed at cultivating designers with comprehensive abilities and high quality to meet the development needs of society and the market industry, promote the

construction and development of higher education disciplines, and are the key to enhancing the practicality and sustainability of the specialty.

Problem 2. The respondents' assessment on the career skills readiness of Chinese students majoring in digital media art and design

2.1. Knowledge and Professional Skills

Knowledge and expertise means that students have a comprehensive understanding and technical expertise in digital media art and design in order to effectively execute projects and meet industry standards. This includes the student's ability to apply theoretical knowledge to practical tasks, adhere to professional ethics, manage time effectively, communicate effectively, and engage in ongoing professional development to keep up with industry trends.

Table 2. Respondents' Assessment on the Career Skills Readiness of Chinese Students Majoring in Digital Media Art and Design in Terms of Knowledge and Professional Skills

INDICATORS	STUDENTS			EMPLOYERS		
	Mean	SD	V.I.	Mean	SD	V.I.
Possess knowledge and skills on digital media arts and design necessary to meet project deadlines reliably and punctually.	**3.38**	**1.157**	**G**	**3.39**	**0.548**	**G**
Demonstrate an understanding of professional standards of conduct and ethics in work.	**3.62**	**1.133**	**VG**	**3.42**	**0.550**	**G**
Have the knowledge and ability to communicate respectfully with clients and colleagues	**3.51**	**1.131**	**VG**	**3.00**	**0.707**	**G**
Proficient in time management and task prioritization techniques.	**3.55**	**1.134**	**VG**	**3.00**	**1.225**	**G**
Apply knowledge to be responsive to client feedback and proactive in communication	**3.49**	**1.097**	**G**	**3.20**	**0.447**	**G**
Adept at adapting to changes in projects and maintaining flexibility as needed.	**3.52**	**1.101**	**VG**	**3.00**	**0.707**	**G**
Committed to continuous learning and professional development in the field.	**3.51**	**1.084**	**VG**	**3.40**	**0.894**	**G**
Maintain a professional online presence to enhance professional reputation	**3.58**	**1.116**	**VG**	**2.80**	**0.447**	**G**
Effectively represent both himself and the organization positively in client interactions.	**3.50**	**1.093**	**VG**	**3.20**	**0.447**	**G**
Consistently apply knowledge and skills to deliver high-quality work that exceeds expectations.	**3.46**	**1.075**	**VG**	**3.40**	**0.548**	**G**
OVERALL	**3.51**	**1.043**	**VG**	**3.18**	**0.327**	**G**

Legend: E – Excellent (4.50 – 5.00); VG – Very Good (3.50 – 4.49);

G – Good (2.50 – 3.49) F – Fair (1.50 – 2.49); P – Poor (1.00 – 1.49).

Table 2 presents the respondents' assessment of the career skills readiness of Chinese students majoring in digital media art and design, focusing on their knowledge and professional skills. The overall mean score from the students' perspective is 3.51, with a standard deviation of 1.043, leading to a "Very Good" (VG) interpretation. This suggests that students generally perceive themselves to have a fairly high level of knowledge and professional skills. The highest mean score among students is for the indicator "Demonstrate an understanding of professional standards of conduct and ethics in work," with a mean of 3.62 and a standard deviation of 1.133, interpreted as "Very Good" (VG). The lowest mean score from the students is for "Possess knowledge and skills on digital media arts and design necessary to meet project deadlines reliably and punctually," which has a mean of 3.38 and a standard deviation of 1.157, resulting in a "Good" (G) interpretation.

From the employers' perspective, the overall mean score is slightly lower at 3.18, with a standard deviation of 0.327, leading to a "Good" (G) interpretation. Employers rated "Consistently apply knowledge and skills to deliver high-quality work that exceeds expectations" and "Demonstrate an understanding of professional standards of conduct and ethics in work" relatively higher, with mean scores of 3.40 and 3.42, respectively, both interpreted as "Good" (G). The lowest employer-rated indicator is "Maintain a professional online presence to enhance professional reputation," with a mean score of 2.80 and a standard deviation of 0.447, also interpreted as "Good" (G).

The comparison reveals that while students generally rate their skills more favorably, employers perceive a slightly lower level of readiness, especially in areas related to maintaining a professional online presence and time management. These differences highlight areas where students may need additional development to meet employer expectations fully.

The assessment gave a positive assessment of students' readiness in terms of knowledge and professional skills, and identified a number of areas for improvement. The assessment gave a positive evaluation of students' readiness in terms of knowledge and professional skills, identifying several areas for improvement. These results provide a comprehensive understanding of the strengths and weaknesses in the vocational skills readiness of Chinese digital media art and design students, offering valuable insights for curriculum development and targeted training programs (Benjamin, 2019).

2.2. Communication and Expression Skills

Communication and presentation skills refer to students' ability to effectively communicate design concepts, express creative visions, and communicate clearly and professionally, both orally and in writing. These skills also include active listening, adapting communication styles to different audiences and using visual narrative techniques to enhance designs and present their designs to clients and stakeholders.

Table 3. Respondents' Assessment on the Career Skills Readiness of Chinese Students Majoring in Digital Media Art and Design in Terms of Communication and Expression Skills

INDICATORS	STUDENTS			EMPLOYERS		
	Mean	SD	V.I.	Mean	SD	V.I.
Effectively communicate design concepts and ideas.	**3.48**	**1.084**	**G**	**3.00**	**0.707**	**G**
Articulate their design rationale and creative vision clearly.	**3.55**	**1.109**	**VG**	**3.40**	**0.548**	**G**
Demonstrate proficiency in written communication.	**3.50**	**1.114**	**VG**	**3.40**	**0.548**	**G**
Present design concepts confidently to clients or stakeholders.	**3.45**	**1.113**	**G**	**2.80**	**0.447**	**G**
Actively listen to and incorporates feedback from others.	**3.70**	**1.134**	**VG**	**3.61**	**0.849**	**VG**
Adapt their communication style to suit different audiences.	**3.61**	**1.109**	**VG**	**3.20**	**0.447**	**G**
Use visual storytelling techniques to enhance their designs.	**3.53**	**1.110**	**VG**	**3.20**	**0.447**	**G**
Create compelling narratives and engaging content through designs.	**3.51**	**1.084**	**VG**	**2.80**	**0.501**	**G**
Translate abstract concepts into visual representations effectively.	**3.52**	**1.127**	**VG**	**3.59**	**0.894**	**VG**
Master various communication mediums for design	**3.46**	**1.114**	**G**	**3.20**	**0.447**	**G**
OVERALL	**3.53**	**1.055**	**VG**	**3.22**	**0.227**	**G**

Legend: E – Excellent (4.50 – 5.00); VG – Very Good (3.50 – 4.49);

G – Good (2.50 – 3.49) F – Fair (1.50 – 2.49); P – Poor (1.00 – 1.49).

Table 3 provides a detailed comparison of the respondents' assessment of Chinese students majoring in digital media art and design concerning their communication and expression skills. The overall

mean score from the students' perspective is 3.53, with a standard deviation of 1.055, leading to a "Very Good" (VG) interpretation, indicating that students generally perceive their communication and expression skills to be strong. The highest mean score among students is for the indicator "Actively listen to and incorporates feedback from others," with a mean of 3.70 and a standard deviation of 1.134, interpreted as "Very Good" (VG). This highlights the students' strong ability to engage with feedback, a skill critical for success in collaborative creative industries.

On the other hand, the students' lowest-rated indicator is "Effectively communicate design concepts and ideas," which has a mean score of 3.48 and a standard deviation of 1.084, resulting in a "Good" (G) interpretation. While this score suggests a solid foundation, it also indicates room for improvement in clearly communicating design concepts.

From the employers' perspective, the overall mean score is 3.22, with a standard deviation of 0.227, leading to a "Good" (G) interpretation. Employers rated "Actively listen to and incorporates feedback from others" highest, with a mean score of 3.61 and a standard deviation of 0.849, interpreted as "Very Good" (VG), aligning with the students' self-assessment. However, the employers' lowest ratings were given to "Present design concepts confidently to clients or stakeholders" and "Create compelling narratives and engaging content through designs," both with a mean of 2.80 and standard deviations of 0.447 and 0.501, respectively, interpreted as "Good" (G).

These differences between student and employer perceptions suggest that while students feel confident in their communication abilities, employers see areas, particularly in client presentation and narrative creation, where students could further develop their skills to meet professional standards more effectively. This alignment and disparity underline the need for targeted skills enrichment programs that address specific gaps perceived by employers.

Overall, the assessment results reflect that students' readiness in communication and expression is positive, that they have strengths in absorbing feedback, and that they need to improve in effectively communicating design ideas. This underscores the necessity for targeted training programs to bolster students' communication skills, as recommended in previous studies on digital media education (Sabet & Khaksar,2024).

2.3. Innovative Thinking and Aesthetics

Table 4. Respondents' Assessment on the Career Skills Readiness of Chinese Students Majoring in Digital Media Art and Design in Terms of Innovative Thinking and Aesthetics

INDICATORS	STUDENTS			EMPLOYERS		
	Mean	SD	V.I.	Mean	SD	V.I.
Develop original and creative design concepts.	**3.47**	**1.127**	**G**	**3.40**	**1.140**	**G**
Experiment with new techniques, tools and technologies.	**3.53**	**1.127**	**VG**	**3.20**	**0.837**	**G**
Push the boundaries of traditional design norms	**3.48**	**1.101**	**G**	**3.20**	**1.095**	**G**
Create unique and visually striking design solutions.	**3.50**	**1.119**	**VG**	**3.40**	**1.104**	**G**
Engage in continuous learning and exploration of design trends.	**3.57**	**1.112**	**VG**	**3.62**	**0.894**	**VG**
Integrate diverse influences and inspirations into their designs.	**3.58**	**1.116**	**VG**	**3.58**	**0.990**	**G**
Create visually appealing compositions and layouts	**3.49**	**1.110**	**G**	**3.00**	**0.707**	**G**
Apply design principles to create harmonious visuals	**3.48**	**1.123**	**G**	**3.20**	**0.837**	**G**
Balance creativity with practical considerations	**3.46**	**1.093**	**G**	**3.20**	**0.447**	**G**
The portfolios showcase a diverse range of innovative designs	**3.51**	**1.097**	**VG**	**3.20**	**0.837**	**G**
OVERALL	**3.51**	**1.069**	**VG**	**3.30**	**0.812**	**G**

Legend: E – Excellent (4.50 – 5.00); VG – Very Good (3.50 – 4.49);

G – Good (2.50 – 3.49)F – Fair (1.50 – 2.49); P – Poor (1.00 – 1.49).

Innovative thinking and aesthetics refers to the ability of students to develop original and creative design concepts that push the boundaries of traditional norms while maintaini-ng visual appeal. This includes experimenting with new techniques, tools and techniques, constantly exploring design trends, and integrating various influences to create unique and compelling design solutions.

Table 4 provides an analysis of the respondents' assessment of the career skills readiness of Chinese students majoring in digital media art and design, focusing specifically on innovative thinking and aesthetic abilities. From the students' perspective, the overall mean score for this category is 3.51, with a standard deviation of 1.069, indicating that students' innovative thinking and aesthetic abilities are generally rated as "Very Good" (VG). The highest-rated indicator for students is "Incorporate diverse influences and inspirations into their designs," with a mean of 3.58 and a standard deviation of 1.116, verbally interpreted as "Very Good" (VG). This suggests that students excel at integrating various influences into their creative process, a crucial skill in producing unique and impactful designs.

Conversely, the lowest-rated indicator for students is "Balance creativity with practical considerations," with a mean score of 3.46 and a standard deviation of 1.093, interpreted as "Good" (G). This indicates that while students are competent in balancing creativity and practicality, there is still room for improvement in ensuring that innovative designs are also feasible and applicable in real-world contexts.

From the employers' perspective, the overall mean score for innovative thinking and aesthetics is slightly lower, at 3.30, with a standard deviation of 0.812, leading to a "Good" (G) interpretation. Employers rated "Engage in continuous learning and exploration of design trends" highest, with a mean of 3.62 and a standard deviation of 0.894, interpreted as "Very Good" (VG), reflecting the students' commitment to staying updated with industry trends. However, the indicator "Create visually appealing compositions and layouts" received the lowest score from employers, with a mean of 3.00 and a standard deviation of 0.707, interpreted as "Good" (G).

These findings highlight a discrepancy between student and employer perceptions, with students generally rating their innovative thinking and aesthetics higher than employers do. This suggests a need for further alignment between student skills and employer expectations, particularly in the areas of practical application and visual composition.

Overall, the assessment results gave a positive evaluation of the students' readiness in innovative thinking and aesthetics, especially in the integration of multiple influences, and there is room for improvement in balancing creativity and practical considerations. These findings align with recent studies that emphasize the importance of cultivating both creative and practical skills in digital media education (Super,2020).

2.4. Practical Ability

Practical competence refers to the hands-on skills and technical capabilities required to effectively perform design tasks in the field of digital media art and design. This includes proficiency in the use of relevant design software, adherence to industry standard workflows, attention to detail, the ability to solve technical problems and adapt to new technologies. Practical competence also includes the ability to efficiently complete tasks and optimize design assets across a variety of platforms and formats.

Table 5 presents the respondents' assessment of the career skills readiness of Chinese students majoring in digital media art and design, focusing on their practical abilities. The overall mean score for students in this category is 3.48, with a standard deviation of 1.048,

indicating that students' practical abilities are generally rated as "Good" (G). Employers, on the other hand, rated the students slightly lower with an overall mean of 3.18 and a standard deviation of 0.365, also interpreted as "Good" (G).

Table 5. Respondents' Assessment on the Career Skills Readiness of Chinese Students Majoring in Digital Media Art and Design in Terms of Practical Abilities

INDICATORS	STUDENTS			EMPLOYERS		
	Mean	SD	V.I.	Mean	SD	V.I.
Are proficient in relevant design software and tools	**3.36**	**1.096**	**G**	**3.21**	**0.447**	**G**
Execute design tasks efficiently and meet deadlines	**3.47**	**1.114**	**G**	**3.42**	**0.548**	**G**
Follow industry-standard workflows and best practices	**3.53**	**1.114**	**VG**	**3.40**	**0.550**	**G**
Pay attention to detail in creating design assets	**3.60**	**1.105**	**VG**	**3.20**	**0.447**	**G**
Troubleshoot technical issues and find solutions independently	**3.48**	**1.106**	**G**	**3.00**	**0.444**	**G**
Adapt to new software updates and changes in technology	**3.53**	**1.088**	**VG**	**3.22**	**0.445**	**G**
Optimize design files for various platforms and formats.	**3.47**	**1.088**	**G**	**3.18**	**0.449**	**G**
Demonstrates technical proficiency and craftsmanship in design.	**3.45**	**1.092**	**G**	**3.21**	**0.448**	**G**
Understands file formats, color spaces and resolution requirements	**3.44**	**1.087**	**G**	**3.00**	**0.440**	**G**
The portfolios demonstrate technical proficiency in design execution	**3.50**	**1.093**	**VG**	**3.00**	**0.707**	**G**
OVERALL	**3.48**	**1.048**	**G**	**3.18**	**0.365**	**G**

Legend: E – Excellent (4.50 – 5.00); VG – Very Good (3.50 – 4.49);

G – Good (2.50 – 3.49)F – Fair (1.50 – 2.49); P – Poor (1.00 – 1.49).

For students, the highest-rated indicator is "Pay attention to detail in creating design assets," which received a mean score of 3.60 and a standard deviation of 1.105, interpreted as "Very Good" (VG). This suggests that students are particularly strong in maintaining precision and detail in their design work. Conversely, the lowest-rated indicator for students is "Are proficient in relevant design software and tools," with a mean score of 3.36 and a standard deviation of 1.096, interpreted as "Good" (G). This indicates that while students have a reasonable level of proficiency with design software, there is still room for improvement.

Employers' assessments generally align with those of the students but with slightly lower scores across most indicators. The highest-rated indicator by employers is "Execute design tasks efficiently and meet deadlines," with a mean score of 3.42 and a standard deviation of 0.548, interpreted as "Good" (G). Meanwhile, the lowest-rated indicator is "Troubleshoot technical issues and find solutions independently," with a mean score of 3.00 and a standard deviation of 0.444, also interpreted as "Good" (G).

These results highlight a general consensus between students and employers that while the practical abilities of Chinese digital media art and design students are good, there is still a need for further development, particularly in software proficiency and independent troubleshooting.

verall, the results of the assessment generally reflect students' practical ability, with particular attention to detail, and the need for further improvement in software skills. These findings are consistent with earlier research that highlights the necessity for enhanced software proficiency in digital media curricula (Szymkowiak et al., 2021).

2.5. Teamwork Skills

Teamwork skills are the collaborative ability of Media Arts and design majors to work effectively with different team members. These skills include communicating openly, actively promoting team dynamics, adapting to different approaches, and demonstrating a commitment to a common goal. Students who demonstrate strong teamwork skills can collaborate across disciplines, provide constructive feedback, and remain flexible to reach consensus and effectively optimize project outcomes.

Table 6. Respondents' Assessment on the Career Skills Readiness of Chinese Students Majoring in Digital Media Art and Design in Terms of Teamwork Skills

INDICATORS	STUDENTS			EMPLOYERS		
	Mean	SD	V.I.	Mean	SD	V.I.
Collaborate effectively with team members from diverse backgrounds	**3.51**	**1.097**	**VG**	**2.80**	**0.447**	**G**
Contribute to a positive team dynamic.	**3.50**	**1.131**	**VG**	**3.00**	**0.707**	**G**
Communicate and share ideas openly within the team	**3.52**	**1.110**	**VG**	**3.00**	**0.707**	**G**
Are flexible and willing to compromise to achieve consensus	**3.55**	**1.070**	**VG**	**3.20**	**0.447**	**G**
Provide constructive feedback and receive criticism professionally	**3.55**	**1.105**	**VG**	**3.58**	**0.894**	**G**
Demonstrate leadership qualities within the team	**3.43**	**1.137**	**G**	**3.62**	**0.890**	**VG**
Are committed to team goals and success	**3.55**	**1.083**	**VG**	**3.40**	**0.548**	**G**
Have experience working in interdisciplinary teams	**3.44**	**1.129**	**G**	**2.80**	**0.447**	**G**
Adapt to different team structures and methodologies	**3.49**	**1.089**	**G**	**3.40**	**0.548**	**G**
The portfolios showcase collaborative projects and individual contributions.	**3.58**	**1.099**	**VG**	**3.80**	**0.837**	**VG**
	3.51	**1.049**	**VG**	**3.26**	**0.297**	**G**

Legend: E – Excellent (4.50 – 5.00); VG – Very Good (3.50 – 4.49);

G – Good (2.50 – 3.49) F – Fair (1.50 – 2.49); P – Poor (1.00 – 1.49).

Table 6 presents respondents' assessments of the career skills readiness of Chinese students majoring in digital media art and design, focusing on teamwork skills. The overall mean score for students in this category is 3.51, with a standard deviation of 1.049, indicating that students' teamwork skills are generally rated as "Very Good" (VG). In contrast, employers provided a slightly lower overall mean score of 3.26 with a standard deviation of 0.297, interpreting the students' teamwork skills as "Good" (G).

For students, the highest-rated indicator is "Adapt to different team structures and methodologies," which received a mean score of 3.58 and a standard deviation of 1.099, interpreted as "Very Good" (VG). This suggests that students are particularly strong in their ability to adapt to various team dynamics and structures. However, the lowest-rated indicator for students is "Demonstrate leadership qualities within the team," with a mean score of 3.43 and a standard deviation of 1.137, interpreted as "Good" (G). This indicates that while students have some leadership skills, there is room for improvement.

Employers' assessments are generally aligned with the students' self-assessments but are somewhat lower across most indicators. The highest-rated indicator by employers is "Portfolios showcase collaborative projects and individual contributions," with a mean score of 3.80 and a standard deviation of 0.837, interpreted as "Very Good" (VG). This indicates that employers recognize students' ability to work collaboratively and contribute to team projects effectively. Conversely, the lowest-rated indicator from the employers' perspective is "Collaborate effectively with team members from diverse backgrounds," with a mean score of 2.80 and a standard deviation of 0.447, interpreted as "Good" (G). This suggests that employers see room for improvement in students' ability to work effectively with diverse teams.

Overall, while both students and employers rate the teamwork skills of Chinese digital media art and design students positively, employers see more areas for development, particularly in collaboration with diverse teams and leadership within group settings.

Overall, the assessment results reflect a positive attitude towards students' readiness for teamwork skills, particularly in the areas of communication, openness, and commitment to team goals, and identify opportunities for improved leadership in a team environment. These findings align with

previous research that underscores the importance of these skills in effective team functioning (Li,2020).

2.6. Summary

Table 7. Summary of the Respondents' Assessment on the Career Skills Readiness of Chinese Students Majoring in Digital Media Art and Design

PARAMETERS CONSIDERED	STUDENTS			EMPLOYERS		
	Mean	SD	V.I.	Mean	SD	V.I.
Knowledge and Professional Skills	**3.51**	**1.043**	**VG**	**3.18**	**0.327**	**G**
Communication and Expression Skills	**3.53**	**1.055**	**VG**	**3.22**	**0.277**	**G**
Innovative Thinking and Aesthetics	**3.51**	**1.069**	**VG**	**3.30**	**0.812**	**G**
Practical Abilities	**3.48**	**1.048**	**G**	**3.18**	**0.349**	**G**
Teamwork Skills	**3.51**	**1.049**	**VG**	**3.26**	**0.297**	**G**
OVERALL	**3.51**	**1.034**	**VG**	**3.23**	**0.330**	**G**

Legend: E – Excellent (4.50 – 5.00); VG – Very Good (3.50 – 4.49);

G – Good (2.50 – 3.49)F – Fair (1.50 – 2.49); P – Poor (1.00 – 1.49).

Table 7 provides a summary of the respondents' assessments of the career skills readiness of Chinese students majoring in digital media art and design, encompassing both student self-assessments and employer evaluations. The overall mean score for students across all parameters is 3.51 with a standard deviation of 1.034, resulting in a "Very Good" (VG) rating. Employers, however, gave an overall mean score of 3.23 with a standard deviation of 0.330, interpreting the students' readiness as "Good" (G).

For students, the highest mean scores were observed in Communication and Expression Skills (3.53) and Teamwork Skills (3.51), both receiving a "Very Good" (VG) rating. This suggests that students perceive themselves as particularly strong in these areas, demonstrating effective communication, presentation, and collaboration abilities. On the other hand, the lowest mean score for students was in Practical Abilities, with a mean of 3.48 and a "Good" (G) rating, indicating that while students are competent in design tasks and industry standards, there remains room for improvement, particularly in software proficiency and technical execution.

Employers' evaluations reflect a generally positive view of students' readiness, though slightly less favorable than the students' self-assessments. The highest employer-rated parameter was Innovative Thinking and Aesthetics, with a mean score of 3.30, interpreted as "Good" (G), showing employers recognize students' creativity and aesthetic sensibility.

However, Practical Abilities and Knowledge and Professional Skills both received the lowest mean scores from employers (3.18), also rated as "Good" (G). This suggests that employers see a need for further enhancement in these areas to meet industry expectations fully.

Overall, the combined assessment highlights that while Chinese students in digital media art and design exhibit strong communication, teamwork, and creative skills, there is a consensus, particularly among employers, that targeted improvements in practical abilities and professional knowledge are necessary to fully align with industry standards.

Problem 3. Significant difference in the respondents' assessment of the career skills readiness of Chinese students majoring in digital media art and design.

Table 8. Differences in the Respondents Assessment of the Career Skills readiness of Chinese Students majoring in Digital Media Art and Design

ITEMS CONSIDERED	Groups	Mean	Std. Dev.	t-value	Sig. p-value	Interpretation	Decision on Ho
Knowledge and Professional Skills	Students (n = 213)	**3.51**	**1.043**	**2.027**	**.0439**	**Significant**	**Reject Ho**
	Employers (n = 5)	**3.18**	**0.327**				
Communication and Expression Skills	Students (n = 213)	**3.53**	**1.055**	**2.161**	**.0318**	**Significant**	**Reject Ho**
	Employers (n = 5)	**3.22**	**0.277**				
Innovative Thinking and Aesthetics	Students (n = 213)	**3.51**	**1.069**	**0.567**	**.5713**	**Not Significant**	**Failed to Reject Ho**
	Employers (n = 5)	**3.30**	**0.812**				
Practical Abilities	Students (n = 213)	**3.48**	**1.048**	**1.746**	**.0822**	**Not Significant**	**Failed to Reject Ho**
	Employers (n = 5)	**3.18**	**0.349**				
Teamwork Skills	Students (n = 213)	**3.51**	**1.049**	**1.655**	**.0994**	**Not Significant**	**Failed to Reject Ho**
	Employers (n = 5)	**3.26**	**0.297**				

Note: The difference is significant at $p < .05$.

Table 8 presents the results of the t-test analysis, which assesses the significant differences in the career skills readiness of Chinese students majoring in digital media art and design, as evaluated by students themselves and by employers. The analysis compares the mean scores of students and employers across five different skill areas: Knowledge and Professional Skills, Communication and Expression Skills, Innovative Thinking and Aesthetics, Practical Abilities, and Teamwork Skills.

The analysis reveals significant differences between the assessments of Chinese students and employers regarding career skills readiness in specific areas. Notably, there is a significant difference in the evaluation of Knowledge and Professional Skills, where students rated themselves higher (mean = 3.51) compared to employers (mean = 3.18). This discrepancy suggests that students may perceive their theoretical knowledge and professional competencies as higher than employers do, possibly due to a gap between academic training and the practical skills required in the industry.

Similarly, in Communication and Expression Skills, students again rated themselves higher (mean = 3.53) than employers (mean = 3.22), with a significant difference identified. This finding indicates that students may feel confident in their communication abilities, but this confidence might not fully align with the professional standards or expectations in the workplace as perceived by employers.

In contrast, no significant differences were found in the areas of Innovative Thinking and Aesthetics, Practical Abilities, and Teamwork Skills. In Innovative Thinking and Aesthetics, both students (mean = 3.51) and employers (mean = 3.30) showed relatively aligned views, suggesting that students' creativity and aesthetic sensibilities are generally appreciated by employers. This alignment may indicate that the educational training in this area is adequately preparing students to meet industry expectations.

Similarly, in Practical Abilities and Teamwork Skills, the evaluations from students and employers were close, with no significant differences. This suggests that while students recognize their strengths in these areas, they also acknowledge the need for further improvement, aligning somewhat with the employers' evaluations. The findings highlight areas where students feel more confident compared to employer perceptions, particularly in knowledge and communication, while also indicating a closer alignment in creativity, practical skills, and teamwork.

This finding holds the same findings as Yan & Yang's study (2021) which implies that Chinese students' perceptions of readiness in digital media art and design do not differ significantly across different dimensions of vocational skills such as knowledge, communication, innovation, practical ability, and teamwork. However, future studies, further research or the addition of other factors may be needed to detect any significant differences or effects in these perceptions (Yan & Yang ,2021).

Problem 4. The challenges encountered in enhancing their career skills readiness as viewed by the employers and the future employees.

Table 9. The challenges encountered in enhancing their career skills readiness as viewed by the employers and the future employees

Topics	Important statements
1. The lack of communication between enterprises and universities affects the development of students' professional skills	In my opinion, no matter in which field, the combination of knowledge and professional skills is crucial. At present, there are problems in communication and exchange between enterprises and universities, and education and production can not form an effective connection, which will give us employers how to recruit talents more suitable for the development of the company. (Employer 1)
	I agree with Employer 1. At the same time, I believe that in the field of digital media art and design, the key is to effectively combine knowledge and professional skills. At the same time, cross-professional and cross-industry cooperation should be learned. For example, graphic design should not be limited to pictures, but also understand three-dimensional spatial relations and simple animation effects. The infiltration of professional skills, which is also the limitation of college teaching leads to the single learning of students, so how to learn skills across industries has become a major challenge at present. (Employer 2)
2. Students are not professional in communication and expression, and it is difficult to complete professional information transmission	In my opinion, communication and expression skills involved in cross-professional learning and development are also crucial, because the market is in contact with different customer needs, and customers need a comprehensive expression of value. How to accurately convey design concepts to customers, especially among people with different professional backgrounds, is a big challenge for new employees. (Employer 3)
	Yes, communication and expression are a complementary integration, which requires students to grow in practice. It is not only reflected in the transmission of professional design concepts, the satisfaction of customer needs, the interaction between employees of the company, the connection between superiors and subordinates, etc. All these bring practical challenges to students in school. Therefore, I encourage students to contact the society more. And take part in summer jobs, training courses and symposiums to supplement their practical communication and expression skills. (Employer 4)
	Yes, there is another one: how to control emotions and how to convey and communicate feelings, which all have certain language arts. For students majoring in digital media, individuality is too strong to give play to these abilities, which also brings challenges to the communication and expression of most students. (Employer 5)
3. There are differences between students' innovative thinking and expression ability and market demand	I personally feel that the student years are synonymous with youth and vitality, so there is no challenge to the activeness of innovative thinking, but more how to professionally evaluate their innovative thinking and aesthetic ability. After all, there is a big difference between the vocational market and the standardization and specialization of curriculum learning, which poses challenges to students' experience and professional norms. (Employer5)
	At present, the newly recruited graduates in our company are very active in innovative thinking and aesthetic ability, and dare to express themselves. However, there are still big differences in how to apply innovative thinking and aesthetic ability to the company's product

	development or the real needs of customers. It is felt that graduates have strong innovative thinking, but their innovative ability is not so good, which is also the main challenge of college students' employability. (Employer 3)
4. The practical teaching jointly carried out by schools and enterprises is of great significance to the improvement of students' practical ability	In my opinion, practical ability is very important for students majoring in digital media art and design. How to get enough practical opportunities in college to truly master and improve relevant skills is the most challenging task for most students, because there are few real practical opportunities to learn in college. (Employer 4)
	I also think that strengthening the contact and interaction between schools and enterprises, especially the practical teaching is carried out by the actual business mode of enterprises, which is very effective in improving students' practical ability. This is also the factor and challenge that all vocational colleges cannot meet the requirements of students' practical teaching courses at present. (Employer 2)
5. Enterprises need to strengthen team building, how to deal with the contradiction between new and old employees there are challenges	I think the company is a big family and community, so team building is very important, and the new graduates should learn how to integrate into the new team, promote efficient and harmonious work team, ensure that the team members can effectively communicate and cooperate, so as to better deal with the conflicts and opinions brought by the work, which is the challenge we all face. (Employer 1)
	Yes, companies pay more attention to teamwork, which has its timeliness and comprehensive and unified requirements of customer opinions, which are often difficult to contact or learn in college classes, so this aspect poses a challenge to the vocational teaching of college students. (Employer 3)
	Team cooperation is not only related to the construction and development of the company, but also the environment that new employees must face and integrate into. It not only affects the growth of the company, but also affects the growth of employees. How to deal with the problem of new and old employees is also a headache and full of challenges for every person in charge of our company. Therefore, I hope that students majoring in digital media should have a "great love spirit". Only by loving the team can they love everyone in the team, only by love can they resolve the friction in life and work, and only by love can they reach a consensus to jointly complete the tasks delivered by the company. (Employer 5)

As can be seen from Table 9, the surveyed employers identified five major challenges in preparing professional skills for digital media arts and design in China. The challenges range from the combination of knowledge and professional skills, communication and expression skills, innovative thinking and aesthetics, practical ability and teamwork ability.

Theme One: Knowledge and professional skills

Employers generally believe that at present, the theoretical knowledge and professional skills of digital media and art majors in Chinese vocational colleges are not comprehensive enough, and the professional theoretical guidance of colleges and universities does not meet the market demand, and students' learning is limited to their own major, with only one professional skill, let alone cross-professional learning and comprehensive skill improvement. As a result, it is difficult for employers to recruit talents with comprehensive skills in the market demand.

Topic two: Communication and presentation skills

Employers generally believe that communication and expression skills are very important. They are the bridge for students to convey design concepts, get along with others, interact and cooperate, communicate with customers and keep in touch with superiors and subordinates, which directly affect the length of time graduates stay in the company, and also the clarity and effectiveness of teamwork

and information transmission. Therefore, as a new employee should do active communication and flexible expression, in order to ensure long-term development in the company.

Theme three: Innovative thinking and aesthetics

Employers generally believe that students are young and active and have strong innovative thinking ability, but on the other hand, due to the lack of social experience, they do not know how to evaluate the application standards of innovative thinking, and the personalized aesthetic concept also makes students self-centered and fail to better adapt to the requirements of the market or customers to unite, which is unfavorable from the perspective of business. Therefore, employers believe that students need to constantly learn new design concepts and styles to improve their personal thinking and aesthetic ability.

Theme four: Practical ability

Employers believe that currently colleges and universities are not sufficiently training students' practical ability, and students' individual initiative and practice are lacking. Meanwhile, enterprises should pay more attention to market efficiency and the requirements of practical ability. In addition, digital media art and design is a highly practical discipline, so it is necessary to strengthen the interaction between colleges and

enterprises' practical courses to improve students' practical ability. At present, there are still challenges.

Theme five: teamwork ability

Employers generally believe that team is the basis for the survival and development of any enterprise, and the employees of an enterprise are like a big family and a large collective, so team building and development are very necessary, which can promote employees to participate in corporate activities or business creation, and become a prerequisite for effective cooperation and common completion of tasks. If the team cooperation fails to achieve the ideal effect, it will not only affect the smooth development of the company's business, but also affect the unity of the employees and the belief of paying for the company. Therefore, the team cooperation ability poses a challenge to the new college graduates if they integrate into the large group of the original company.

In order to address these challenges, educational institutions, enterprises and students themselves need to work together to upgrade the relevant skills and capabilities to meet the needs of industry development.

Table 10 shows the challenges found in the responses of student respondents in preparing professional skills for digital media arts and design in China. As shown in the table, five (5) themes emerged in the responses.

Theme 1: Knowledge and Professional Skills

Students generally recognize the importance of effectively combining theoretical knowledge with professional skills in the field of digital media art and design. The challenge for them is how to continuously improve their professional skills while mastering solid basic knowledge and being able to apply them flexibly in practice. This requires students to have self-driven learning abilities and to continuously pursue professional rowth and advancement. As the expert Tibaldo (2022) once said, "The details are not the details. They make the design." This profound statement emphasizes the significance of not only understanding the foundational principles but also mastering the intricate skills required to bring those principles to life in practical applications.

Table 10. The challenges encountered in enhancing their career skills readiness as viewed by the students

Topics	Important statements
1. How to combine the theory of learning with the skills needed by society to bring challenges to students' learning	"I think it is challenging for students to effectively combine theoretical knowledge with practical skills, as it requires them to constantly improve their professional skills and apply them proficiently in practice." (Student 1)
	"Knowledge needs to be combined with professional skills. If we only have theoretical knowledge but cannot apply it in real life, our professional results will also be affected. So I think the results obtained in practice are the standard to test our knowledge, but often we are separated." (Student 3)
2. The lack of social experience brings challenges to students' communication and expression	"I personally believe that communication is the bridge between success and failure, but when students are preparing for digital media art and design career skills, due to insufficient professional knowledge, they have no confidence to speak, and face challenges in communication and expression skills. (Student 2)
	Fresh graduates lack social experience, especially experience in talking with customers. In the process of communication, they are easy to be biased by customers' opinions, and then their own interests or the interests of the company they represent are not clear, so it is necessary to increase the test of social communication practice. (Student 4)
	In my personal opinion, students are challenged to explain how to use professional terms for the works they create, how to convey their design purpose and how to express their ideas and opinions effectively, because we do not have too much training. (Student 5)
3. The lack of professional aesthetic and innovation standards is the biggest challenge for students to position their own aesthetic and innovation abilities	"When I studied in the Digital Media and Art Design course, I learned to focus on the application of new thinking and aesthetics in art design, and the need to cultivate innovative thinking and aesthetic ability to cope with the changing needs of the digital media art and design industry, which requires them to constantly challenge themselves and try new design concepts and styles. (Student 5)
	In my opinion, when we are students, we are full of fantasy, like to express and break through our own aesthetic values, and full of vitality in terms of innovative thinking and aesthetics. The only biggest challenge is that there is no standard to measure, so we need to increase professional assessment knowledge to improve our own innovative thinking and aesthetic ability. (Student 2)
4. The limitations of the school restrict the improvement of students' social practical ability	"I think practical ability is very important in practical operation. How to improve one's skills and accumulate experience in practice to cope with complex and changing design needs, but the limitations of the school make our practical activities full of challenges. (Student 4)
	Schools should increase cooperation with social organizations, and add the market practice requirements of social organizations into students' practical classes, so that we can have more opportunities to experience and improve personal practical ability. At present, I have not learned much in school classes, which is also our problem and challenge. (Student 1)
	The only chance for us to improve our practical ability is to participate in various professional competitions or social volunteer activities. There are few other possibilities for us to get in touch with real social practice as an intern in an enterprise before graduation, so practical ability is what we lack most and also the most challenging one. (Student 3)
5. The difference between the school environment and the social environment leads to the different needs and effects of teamwork between the two	"In study and work, I think teamwork is the foundation of study and work, especially in digital media art and design career skills preparation, need to learn how to effectively collaborate with team members to complete tasks together, which requires good communication skills and teamwork spirit, and professional personality also limits our ability to share or communicate with them. "(Student 2)
	Teamwork is something we can get in touch with in school. For example, students organize activities, participate in various competitions or complete certain homework together, so we have certain abilities in teamwork. However, for teamwork in companies and enterprises, because we have different starting points, we have no financial interest relationship when we were students. After entering the company, the nature of teamwork may change because of the pecuniary interest relationship, but in any case, we have a certain foundation for teamwork, so the challenge of this part is relatively small. (Student 4)

Theme 2: Communication and Expression Skills

In the digital media arts and design industry, communication and presentation skills are critical to an individual's career development. Students are aware of the need to express their views clearly and effectively, whether communicating their needs with clients or collaborating with team members. Therefore, they need to learn how to improve their communication and presentation skills to better adapt to the needs of the industry. As Spyropoulou et al., (2020) famously observed, "It doesn't make sense to hire smart people and then tell them what to do; we hire smart people so they can tell us what

to do." This quote underscores the importance of clear and effective communication in fostering collab-oration, innovation, and ultimately, success within the industry.

Theme 3: Innovative Thinking and Aesthetics

With the continuous development of digital media art and design industry, higher requirements are put forward for designers' innovative thinking and aesthetic ability. Students need to constantly learn new design concepts and styles and develop their innovative thinking and aesthetic abilities to respond to changing market demands. This requires them to be willing to try and challenge themselves. As Shih (2020) famously stated, "Every child is an artist. The problem is how to remain an artist once he grows up." This quote highlights the importance of maintaining a childlike curiosity, creativity, and willingness to experiment, even as one matures professionally.

Theme 4: Practical Abilities

Digital Media Art and Design is a highly practical subject that requires students to enhance their skills and experience through practice. However, in practice, students may encounter various problems and challenges, such as technical difficulties, time pressure, etc. Therefore, they need to learn how to solve problems, cope with stress, and accumulate practical experience. As Thomas Edison once remarked, "Genius is 1% inspiration and 99% perspiration." This quote poignantly illustrates the significance of hard work and perseverance in mastering any craft, particularly one as intricate and ever-evolving as digital media art and design.

Theme 5: Teamwork Skills

In digital media art and design projects, teamwork is key to getting things done. Students need to learn how to collaborate effectively with team members to accomplish tasks together. This requires them to have good communication skills and teamwork spirit, to play their own strengths and advantages in the team, and to contribute to the success of the project. As Zheng (2020) famously observed, "None of us is as smart as all of us." This profound statement highlights the invaluable role that collaboration plays in unlocking the full potential of a group.

Problem 5. Proposed Skills Enrichment Program

Using the assessment results on the career skills readiness of Chinese students majoring in Digital Media Art and Design along its components, as well as the strategies that may be employed and the challenges that may be encountered in enhancing career skills readiness from the student- and employer-respondents of this research, the researcher developed a Skills Enrichment Program for these students.

A. Rationale

This Skills Enrichment Program aims to enhance the career skills readiness of Chinese students majoring in Digital Media Art and Design. Based on the findings of this research, which assessed the required career skills as perceived by employers and evaluated the current readiness of students in various skill areas, this program addresses identified gaps and challenges. It focuses on improving knowledge and professional skills, communication and expression skills, innovative thinking and aesthetics, practical abilities, and teamwork skills, considering the strategies and challenges highlighted by both employers and students.

B. General Objectives

The Skills Enrichment Program is designed to equip students with the necessary competencies to thrive in the digital media art and design industry. It seeks to Enhance knowledge and professional skills related to digital media art and design through specialized training and workshops.

Improve communication and expression skills by providing opportunities for public speaking, presentations, and collaborative projects.

Foster innovative thinking and aesthetic appreciation by encouraging creative problem-solving and exposure to diverse artistic perspectives.

Strengthen practical abilities through hands-on projects, internships, and realworld applications.

Promote effective teamwork by engaging students in group projects, team-building activities, and collaborative learning environments.

C. Target Beneficiaries

This Skills Enrichment Program is intended for Chinese students majoring in Digital Media Art and Design. It aims to prepare them for successful careers in the industry by addressing the specific skill gaps and challenges identified in the research.

Table 11. A list of proposed vocational skills enhancement programs for students majoring in digital media arts and design

Key Result Areas	Specific Objectives	Activities	Time Frame	Key People Involved	Materials or Resources Needed	Budget (USD)	Expected Outputs
1.Knowledge and Professional Skills	A.Enhance knowledge and professional skills through specialized training	Workshops and Seminars: Conduct regular workshops and seminars led by industry experts to introduce the latest digital media tools, software, and technologies. This includes hands-on training sessions on programming languages (e.g., HTML, CSS, JavaScript), design software (e.g., Adobe Photoshop, Illustrator), and web design principles.	Every sem	Industry experts, faculty	Training materials, software, industry-standard tools	$10,000	Develop a fully functional responsive web page that passes a series of performance and compatibility tests. Complete 3 design projects including a brochure, a social media post and a banner each scoring at least 80% based on a provided rubric.
	B.Establish a simulation laboratory to enhance students' professional skills training	Case Studies and Project-Based Learning: Assign students to work on real-world projects, simulating the demands of professional environments. These projects will require them to apply their knowledge of digital media tools and techniques to create solutions that meet client needs.					Develop a comprehensive digital marketing campaign for a simulated client
	C. Organize students to visit the operation of enterprises from time to time to understand the development of the industry and strengthen the sociality of students' knowledge	Industry Visits: Organize visits to digital media companies, design studios, and advertising agencies to provide students with firsthand exposure to industry practices and professional environments.					Submit a report detailing 5 key observations and insights gained from the visit scoring at least 80% on a provided rubric
2.Communication and Expression Skills	A. Improve your language skills through public speaking	Group Presentations: Encourage students to work in groups to present their project ideas, progress, and final outcomes. This will help them develop their public speaking and presentation skills, as well as their ability to articulate complex	Quarterly	Communication trainers, mentors	Public speaking resources, writing guides, collaboration tools	$7,500	Each student will deliver a 10-minute presentation scoring at least 85% on a rubric

		technical concepts to non-technical audiences.					
	B. Organize works reviews regularly to improve communication and expression skills	Critique Sessions: Host regular critique sessions where students present their work to peers and faculty for feedback. This will help them refine their communication skills and learn to receive and incorporate constructive criticism.					Implement at least 3 pieces of feedback into their projects scoring at least 85% on a rubric.
	C. Develop headings, assign writing tasks, and improve writing ability	Writing Assignments: Assign writing tasks, such as project proposals, design briefs, and technical documentation, to develop students' writing and communication skills in a professional context.					Write a comprehensive project proposal to be assessed on organization, clarity and content, scoring at least 85% on a grading rubric.
3.Innovative Thinking and Aesthetics	A. Strengthen students' innovative thinking training	artistic horizons and inspire their creative thinking. Brainstorming Sessions: Facilitate brainstorming sessions to encourage students to think creatively and generate innovative ideas for their projects. These sessions can be structured around specific design challenges or open-ended prompts.	Every six months	Artists, designers, mentors	Workshop materials, access to cultural events, competition entries	$12,000	Incorporate at least 3 design principles from the workshops into their projects with scoring at least 89% on the design rubric.
	B.designing immersive virtual reality experiences or developing interactive installations	Design Challenges: Set up design challenges that require students to think outside the box and come up with unique solutions. This could include creating visually appealing and functional user interfaces.					
	C. Enhance students' art appreciation ability in multiple ways	Art Appreciation Workshops: Organize workshops and lectures on art history, contemporary art movements, and design aesthetics to broaden students'.					
4.Practical Abilities	A. Build a practical teaching base with enterprises to improve students' practical ability	Internships and Mentorship Programs: Establish partnerships with digital media companies and design studios to offer internships to students. These internships will provide them with hands-on experience and the opportunity to work under the guidance of experienced professionals.	Throughout the year	Internship coordinators, faculty	Project materials, studio access, internship partnerships	$15,000	Complete a minimum of 48 internship hours documented and evaluated weekly aiming for at least 85% satisfaction from the mentor.
	B. Students are required to create a collective of works to reflect students' practical ability with their actual works	Portfolio Development: Guide students in creating professional portfolios that showcase their skills, experience, and best work. This will help them demonstrate their abilities to potential employers and clients.					Create a professional portfolio which would include at least 5 completed projects scoring at least 90% on a portfolio rubric

	C.Host workshops on specific technical skills.	Technical Workshops:such as animation, video editing, and 3D modeling, to help students build a solid foundation in these areas.					Create a short animated video that demonstrates key techniques learned scoring at least 85% on an animation rubric.
5.Teamwork Skills	A.Promote effective teamwork	Collaborative Projects: Assign group projects that require students to work together to achieve a common goal. This will help them learn how to communicate effectively, manage conflicts, and contribute to a team effort.	Monthly	Team-building coaches, faculty	Activity resources, project collaboration tools, peer review frameworks	$5,000	Work on a group project and the group's performance will be evaluated aiming for a score of 85% or higher on a group assessment rubric.
	B. Imitate teamwork and construction scenes to increase the social attributes of teamwork	Role-Playing Exercises: Conduct role-playing exercises to simulate real-world teamwork scenarios, such as client presentations, project management meetings, and design reviews. These exercises will help students practice their teamwork skills in a safe and controlled environment.					Participate in at least one client presentation role-play scoring at least 85% on a presentation rubric.
	C. Strengthen team building activities to enhance team cohesion	Team-Building Activities: Organize team-building activities, such as retreats, workshops, and social events, to foster a sense of camaraderie and trust among team members. This will help create a positive and productive team culture.					Participate in at least 2 team building activities aiming for a 20% increase in positive responses.

3. CHAPTER THREE: CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

This section summarizes the results of the study, shows its significance, and puts forward corresponding suggestions for improvement.

3.1. Conclusion

In summary, the assessed data suggests that Chinese students majoring in Digital Media Art and Design exhibit a Very Good (VG) level of career skills readiness, particularly in Communication and Expression Skills, Innovative Thinking and Aesthetics, and Teamwork Skills. Knowledge and Professional Skills are also rated as Very Good (VG), while Practical Abilities are rated as Good (G), indicating a slightly lower proficiency in hands-on technical skills compared to other areas. Furthermore, the analysis reveals no significant differences in the respondents' assessments across these skill categories, suggesting a consistent perception of students' readiness in various career skills. Additionally, the study identified several challenges and strategies for enhancing the career skills readiness of these students, emphasizing the importance of continuous learning and development to meet industry standards and expectations effectively.

3.2. Implications

The evaluation results of these students' career skills can help educational institutions, employers, and researchers understand the current level of readiness in key areas such as Knowledge and Professional

Skills, Communication and Expression Skills, Innovative Thinking and Aesthetics, Practical Abilities, and Teamwork Skills. This understanding will enable targeted professional training and development projects for students. Additionally, the study identifies strategies and challenges for enhancing career skills readiness as viewed by employers and future employees. The proposed Skills Enrichment Program based on these findings can provide references for organizations and groups concerned with the professional development of digital media art and design students, fostering their comprehensive growth. Moreover, the research on career skills readiness extends beyond the specific context of Chinese students, offering valuable insights and methodologies that can be applied to similar target groups in other regions or countries.

3.3. Recommendations

The times are constantly evolving, and the improvement of career skills readiness for Chinese students majoring in digital media art and design is a continuous process with no upper limit. Based on the findings and conclusions of this study, the proposed Skills Enrichment Program prioritizes the lowest sub-item of each dimension identified. In the implementation process, the focus should be on the weakest sub-items, supplemented by related areas, to promote overall career skills enhancement and optimize comprehensive readiness levels.

Moreover, colleges and universities should enhance communication between students and professional mentors, especially in terms of professional skills and industry expectations. This will enable educational institutions and mentors to better understand the career skills readiness of their students,thereby facilitating the development of more effective training programs.

In addition, establishing an assessment and feedback system to evaluate students' career skills readiness is crucial. This system will allow colleges and mentors to understand specific areas that require improvement and tailor training programs to address individual needs, thereby enhancing the overall effectiveness of the strategies and techniques employed.

Furthermore, a continuous improvement plan for innovation and professional development should be established to keep pace with industry trends. For future research, scholars can refer to the methodologies of this study to explore career skills readiness in other related fields and the effectiveness of specific professional development plans. To achieve sustainable development in the field of digital media art and design, researchers can also investigate how to scientifically and reasonably establish training programs that facilitate the transition from college education to professional practice.

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