Innovations

A Study on the Effectiveness of Strategies to Develop Comprehensive Calligraphy Skills

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Abstract

In order to gain an accurate understanding of the development of comprehensive competence in calligraphy among graduate students at comprehensive universities in China, this study explored the question of the effectiveness of strategies for the development of comprehensive competence in calligraphy, such as how effective is the implementation of strategies for the development of comprehensive competence in calligraphy in terms of talent development, teaching delivery, curriculum arrangement, and employment? Respondents were current students as well as graduating graduate students at three comprehensive colleges and universities in southwestern China. The study was conducted in the second semester of the 2022 academic year. The study was conducted using a quantitative research method, including quantitative methods through questionnaires, weighted averages, and Likert scales. The project is conducive to optimizing the construction of a comprehensive university graduate education and comprehensive competence training system for calligraphy, and to exploring a talent training program for graduate education in calligraphy with an international perspective. At the same time, it is of practical value to the heritage of Chinese traditional culture and the strategy of "going out".

__Keywords:__ Graduate students and undergraduates, Comprehensive ability of calligraphy; Effectiveness; Questionnaire survey; Cultural strategy

Introduction

The key to solving the problem of Chinese calligraphy's heritage and internationalization lies in postgraduate calligraphy education, which not only ensures the heritage of China's excellent traditional culture, but also better serves the strategy of "going abroad" of Chinese culture and enhances the core competitiveness and international influence of Chinese traditional culture. The only way to ensure the internationalization of Chinese calligraphy is to strengthen the cultivation of comprehensive calligraphic ability and to create a group of calligraphic talents with profound cultural heritage, calligraphic skills and international vision.

(Zhao, 2017) Since the beginning of the 21st century, research on the issue of comprehensive competence cultivation in calligraphy has gradually received attention and conducted useful exploration abroad, and Chinese scholars have also proposed many strategies to improve comprehensive competence cultivation in calligraphy from the current situation and problems of domestic calligraphy graduate education. However, in order to demonstrate the effectiveness of these comprehensive calligraphy competency development strategies, they need to be tested in the context of actual human resource development, teaching delivery, curriculum arrangement, and employment. The purpose of this study is to gain an accurate understanding of the development of comprehensive calligraphy competencies among graduate students in Chinese comprehensive universities and to explore the effectiveness of comprehensive calligraphy competency development strategies. The results of this study will serve as a reference for administrators and instructors of calligraphy graduate students in comprehensive universities in China to guide them in effectively implementing a system for the cultivation of comprehensive calligraphy competencies. Administrators and instructors will make more reflections and improvements in the face of these questions, as the answers to these questions come exclusively from current calligraphy graduate students as well as graduate students.

Literature Review

Comprehensive competence in calligraphy refers to the comprehensive ability to possess the relevant knowledge structure, professional practical skills, theoretical literacy, and broad social vision of the profession after integrated training inside and outside the classroom in higher calligraphy schools. Specifically, the level of effectiveness of the implementation of relevant strategies in talent cultivation, teaching delivery, curriculum arrangement, and employment in all aspects of postgraduate calligraphy education profoundly affects and even determines the actual effectiveness of the cultivation of comprehensive calligraphy competence.

Globally, colleges and universities in Europe and the United States do not offer calligraphy majors, and even those that do offer calligraphy as a quality education course are not many. Countries and regions outside of China that engage in higher education in calligraphy are mainly located in colleges and universities in the Han culture circle of Asian countries such as Japan, Korea, and Singapore (Li, 2018); take Japan as an example. Jia Jia's "Historical Examination of Japanese Calligraphy Education" (2016) introduces and elaborates on the strategies and current status of comprehensive calligraphy competency development in Japanese graduate education. Jia's (2016) study shows that comprehensive calligraphy competency development has a strong correlation with the level of effectiveness of the implementation of relevant strategies in talent development, teaching delivery, curriculum arrangement, and employment. In China, comprehensive competence development in calligraphy is an important element of current research on Chinese calligraphy graduate education. According to Li (2017); Sun (2019); Wang (2022) and other scholars, the number of studies on talent training, teaching delivery, curriculum arrangement, and employment in calligraphy graduate education in China has maintained a dynamic growth over the past 40

years of reform and opening up, reflecting the importance and value of comprehensive competence development in calligraphy from the side.The researchers in this paper searched through CNKI full-text journal database, Wanfang database, Wipu Journal Resource Integration Platform database, Google Scholar and other search tools, using "calligraphy graduate education" and "calligraphy comprehensive ability" as keywords, and screened out a total of 72 academic papers. Among the 72 academic papers, a significant number of researchers were devoted to the study of strategies for the cultivation of comprehensive calligraphy skills, mainly in the areas of talent cultivation, teaching delivery, curriculum arrangement, and employment. For example, Zhang & Cao (2013) describe a strategy for cultivating calligraphic competence at Southwest University, arguing that cultivating advanced calligraphic talent with a solid theoretical foundation and strong practical skills is the fundamental purpose and desired outcome of postgraduate calligraphy education; Wang & Li (2017) argue that calligraphy graduate education should emphasize the cultivation of comprehensive calligraphic ability, which is reflected in two aspects: 1. Equal emphasis on theoretical research and creation of calligraphy. 2. Calligraphy graduate students are the inheritors of traditional culture. They advocate training graduate students through courses in scripts, calligraphic creation, seal carving, history of calligraphy, aesthetics, and art theory; Li (2017) argues that there is a need to open and broaden students' research horizons in calligraphy graduate education; Cai (2017) argues that calligraphy graduate students should focus on cultivating research ability and research spirit, and suggests that calligraphy graduate theoretical teaching methods can be combined with hot issues, with calligraphy practice, with dissertation writing, and with undergraduate teaching in a "special interactive teaching method"; Ao (2015) noted the employment problem of calligraphy graduate students, and that for employment calligraphy education needs to achieve basic goals, namely skill goals, theory goals, and ability goals. Specifically, skill goals are the basis for personal development and survival of calligraphy majors, including the mastery of solid professional and work skills, such as copying and creation, seal carving, Chinese painting, and common office software. Theoretical objectives are to master the knowledge system of calligraphy history, Western art history and theory, educational psychology, educational teaching, and comprehensive abilities such as learning ability, working ability, expression ability, performance ability, organization ability, communication ability, cooperation ability, and execution ability; etc.

The aforementioned studies have strongly promoted the development of research on comprehensive calligraphy competence cultivation strategies, proposing a number of strategies and methods, such as: focusing on the integration of calligraphy theory and practice; having solid skills in copying the five calligraphic styles; using a flipped classroom model; adopting a dual-track teaching system; focusing on the cultivation of students' problem awareness and academic thinking; and so on. But how effective are these strategies implemented? It should be empirically proven in the practical application of comprehensive calligraphy skills development, which is the value of the significance of conducting this project.

Significance of the study
This project is conducive to the optimization of comprehensive university graduate education and the construction of a comprehensive capacity training system for calligraphy, and to the exploration of a talent training program for graduate education in calligraphy with an international

perspective. The research will also contribute to the heritage of traditional Chinese culture and the implementation of the "going out" strategy.

Object of the study

The research subjects are graduate students and calligraphy graduates trained by Sichuan University, Chongqing University and Southwest University in the current calligraphy program.

Materials and Methods

A quantitative research design was used in this study. Quantitative methods will be used to determine the level of effectiveness of current strategies for developing comprehensive calligraphic skills in graduate education.

The questionnaire used in this study. The questionnaire was divided into two parts. The first part included basic personal information variables, including school, gender, and age; the second part was in the form of a Likert scale (measuring level 4), listing 20 comprehensive evaluations, mainly related to talent development, teaching delivery, curriculum arrangement, and employment. Respondents' responses were selected from a range of 4 (very effective), 3 (generally effective), 2 (slightly effective), and 1 (not effective). To ensure the validity and reliability of the questionnaire item indicators three calligraphers were invited to validate the content of the questionnaire. After receiving the approval of the panel, a reliability test was conducted. The reliability result was 0.996.

Data collection procedures

The study was conducted in the second semester of the academic year 2022. The data collection process was divided into two phases. The first stage was the distribution of the questionnaire. First, we contacted the postgraduate office leaders of the three schools, explained the intention of the questionnaire and obtained their consent, and obtained the phone numbers and We Chat messages of the class officers of the postgraduate students in different years of calligraphy in the three schools, and distributed the questionnaire with the assistance of the class officers, and 41 questionnaires were distributed offline. Secondly, after contacting the graduate student supervisors of the three schools, explaining the intention of the questionnaire and obtaining their consent, the graduate student supervisors randomly distributed the questionnaires to their graduate calligraphy students via WeChat, and a total of 195 questionnaires were distributed. A total of 236 questionnaires were collected from 41 current graduate students and 195 graduate calligraphy students from the three schools.

Ethical considerations

In collecting the data, the researcher first sought help from the graduate school authorities and graduate student advisors at each of the three comprehensive universities to determine the target of the survey. After identifying the respondents, the researcher informed them of the purpose of the survey and the risks they might encounter, and informed them that the questionnaires were for academic research only, and that the respondents' information would not be disclosed.

In order to ensure the quality of the questionnaire, the researcher communicated the

purpose and content of the questionnaire to the graduate school authorities and graduate student supervisors of each school in advance and received their assistance in communicating the relevant information to the respondents to ensure that all respondents were clearly informed of the purpose and meaning of the questionnaire.

The researcher ensured that participants would not be harmed by their participation in the study, that their identities would be kept strictly confidential, and that no clues to their identity would be given. The results of the questionnaire will be used for academic research only, and the results will be passed on to the three universities from which the respondents came to improve the development of a comprehensive system of calligraphy skills. They will not be used by others for commercial purposes.

Results and Discussion

The results of the study were obtained from the evaluation of 236 current students and graduates of three comprehensive universities on the degree of effectiveness in implementing strategies to develop comprehensive calligraphy skills.

Talent Training

Table 1 shows the degree of effectiveness of the implementation of the calligraphy comprehensive competence development strategy in terms of talent development.

Table 1: Talent Training

Indicators	Mean	Description
He published academic research papers during his postgraduate study in calligraphy	3.49	Very Effective
Pay more attention to the combination of calligraphy theory and practice	3.12	Moderately Effective
Have a solid five-body calligraphy copying ability	2.66	Moderately Effective
Have a solid calligraphy creation ability, specialized and versatile	2.40	Slightly Effective
During the calligraphy graduate students participated in the calligraphy exhibition sponsored by the Chinese Calligraphy Association	1.90	Slightly Effective
General Weighted Average	2.71	Moderately Effective

The results showed that the implementation of comprehensive calligraphy competency development strategies in talent development was largely effective (2.71). The researcher believes that the main reason for this result is the influence of both macro and micro factors.

The macro factors refer to the development and implementation of the talent development system. The micro factors refer to the concrete manifestations of the implementation of calligraphy theory and calligraphy technique strategies, such as having the ability to copy and create in various calligraphic styles; publishing academic papers and participating in authoritative exhibitions. From the results of the study, the level of calligraphy theory and technique is an important factor reflecting the comprehensive ability of graduate students in calligraphy.

These findings are consistent with Ni & Fan's (2017) study: only strengthening the development of comprehensive capabilities of calligraphy graduate students, with equal emphasis on theory and practice, has a crucial impact on students' learning and research.

Overall, the strategy of "publishing academic papers" had the highest degree of effectiveness (3.49). The study showed that calligraphic graduate students were fully effective in writing and publishing academic papers during their studies.

In her study, Li (2017) found that it is particularly important for the training of calligraphy graduate students to reinforce the development of research skills, which is about academic judgment, academic argumentation, and academic judgment. This is consistent with the results of the degree of effectiveness of research competency development highlighted by the completion of academic paper publication in this study.

This was followed by "focusing on the integration of calligraphy theory and practice" (3.12). This result indicates that the strategy of focusing on the combination of calligraphy theory and practice helps to improve students' comprehensive calligraphy ability.

As Wang & Lee (2017) point out in their study, postgraduate calligraphy education should emphasize the cultivation of comprehensive calligraphic ability, with equal emphasis on theoretical research and creative work in calligraphy.

Furthermore, students "have a solid ability to create calligraphy and are multi-talented" (2.40). The researcher believes that the reasons for this result are multifaceted, with the issue of student population being an important factor in the impact. Some of the students in the group of calligraphy graduate students belong to interdisciplinary calligraphy graduate students who are weak in their own calligraphy foundation, while others belong to the lack of systematic training at the undergraduate level of calligraphy resulting in weak overall quality. The results of this study show that there are certain drawbacks in the selection of calligraphy graduate students for admission. This is consistent with the findings of Xin (2017): candidates do not need to have a comprehensive mastery of calligraphy techniques, or even a good understanding of the basic strokes of a particular style, to be admitted anyway. According to Xu (2017), master's students should be all-rounded in the five styles and seal carving, work on both giant and small works, and advance in both scholarship and merit. Xin (2017) also believes that if one specializes in the basic techniques of only one or two calligraphic styles without studying the techniques of various calligraphic styles and their correlations, how can such creativity go deeper? Therefore it is necessary to study and research calligraphic techniques comprehensively. Similarly, Zhang & Cao

(2013) argue that the cultivation of talents for postgraduates should adhere to a comprehensive training of one specialization and multiple abilities, highlighting specialties and specializations.

At the bottom of the list are students who "participated in calligraphy exhibitions sponsored by the Chinese Calligraphy Association during their postgraduate studies in calligraphy" (1.90). The researcher concluded that the problem of theoretical and technical bias in calligraphy was the main cause of this result. The results of the study indicate that after students enrolled in calligraphy graduate school, some of them focused on technique creation or on academic theory graduate school.

In her study, Chen (2020) noted that "from the enrollment of calligraphy graduate students, few students are able to enter with both theoretical and practical foundations, which is a difficulty facing graduate teaching." This is consistent with the problem of theory-practice bias found in the group of calligraphy graduate students in this study.

At the same time, Chen (2020) argues that postgraduate training requires a close integration of theory and practice, and that bias to either side is deficient. Without theory as a guide, practice is blind and will not progress in the long run.

Instructional Delivery

Table 2 shows the degree of effectiveness of the implementation of comprehensive competence development strategies in calligraphy with respect to instructional delivery.

Table 2: Instructional Delivery

Indicators	Mean	Description
The classroom teaching atmosphere is active, using group discussion, making reports and other forms of communication and learning	3.51	Very Effective
The school offers many whole elective courses to strengthen the communication between students of different disciplines	3.15	Moderately Effective
Using techniques and theory of dual-track system of teaching	2.39	Slightly Effective
Postgraduate tutors teach students in accordance with their aptitude, and pay great attention to the cultivation of students' personal ability	2.36	Slightly Effective
Adopt the classroom mode of flipped classroom to mobilize students' enthusiasm and enthusiasm for learning	2.19	Slightly Effective
General Weighted Average	2.72	Moderately Effective

Table 2 shows an average effective level of implementation of strategies for comprehensive competence development in calligraphy in terms of instructional delivery (2.72). This result indicates that the strategies related to comprehensive competence development in calligraphy are not fully and effectively implemented in the teaching delivery process. The researcher believes that the lack of a top-level designed talent development model and the lack of a unified syllabus, teaching arrangement and teaching tools are the main reasons for this result.

These findings are consistent with Zhang's (2020) study that "comprehensive colleges and universities have clear talent cultivation goals in the cultivation of calligraphy graduate students and the implementation of quality education, and some of them have developed a characteristic talent cultivation model after long-term experience." Similarly, Qiu's (2023) study showed that the cultivation of comprehensive competence of calligraphy graduate students is influenced by the combination of syllabus, teaching delivery means, teaching mode and teaching environment.

The highest level of effectiveness (3.53) was found in the strategy of "active classroom atmosphere, communication and learning in the form of group discussion and report making" in the student teaching environment. This reflects that the teaching methods and strategies such as group discussions in the delivery process help students to improve their overall calligraphy skills.

The findings are consistent with Cai's (2017) study: thematic interactive teaching (group discussion) has a positive effect on improving graduate students' research spirit and dissertation writing ability, cultivating students' ability to research and analyze problems, and improving the overall quality of graduate students more than general traditional teaching.

In his study, Ding (2020) found that the current curriculum of calligraphy graduate students is arranged thematically for teaching, and the group discussion method is used as a means to help cultivate students' theoretical vision and thinking, and cultivate problem awareness under the big picture and holistic view, thus guiding students to learn to identify problems and consciously pay attention to research trends. This is consistent with the findings of this study that teaching methods and strategies in the form of group discussion help students to improve their overall calligraphy skills.

The second is "multidisciplinary teaching, with many elective courses offered to enhance interaction between students from different disciplines" (3.15). This reflects that the multidisciplinary strengths in Chinese comprehensive universities are used more effectively in teaching delivery.

Chen (2004) argues that comprehensive universities have the advantage of a full range of disciplines, and at the same time, they focus on students' comprehensive ability and knowledge coverage in a large number of ways, with "art studies" as the base, which covers internal disciplines of art such as music, art, drama, dance, calligraphy, design, and film, but also in disciplines such as aesthetics, philosophy, literature, history, and information technology, In addition to covering internal disciplines such as music, art, theater, dance, calligraphy, design, and film, it also connects with aesthetics, philosophy, literature, history, information technology, and other disciplines, intersecting with disciplines inside and outside the classroom as well as combining and reorganizing with fringe disciplines. Similarly, Liu's (2019) study shows that comprehensive universities are good at taking into account the relationship between multiple art disciplines within the art discipline, dealing with the interaction between the art discipline and other related disciplines, focusing on the synthesis and integration of all heavy factors inside and

outside the discipline, "learning" and "art " combined, practice and art research are given equal importance. Therefore, a multidisciplinary teaching strategy can be used in teaching delivery to develop comprehensive calligraphy skills and broaden students' knowledge structure and disciplinary perspectives.

At the bottom of the list is the "adoption of the flipped classroom model to mobilize students' enthusiasm and passion for learning" (2.19). The researchers attribute this result to two factors: on the one hand, the flipped classroom model has not been fully popularized and applied in the context of exam-oriented education in China; on the other hand, the change in the role of teachers and students in the flipped classroom has increased the demand for comprehensive competence of graduate instructors in the delivery process. The flipped classroom increases student-faculty interaction and gives students a self-directed learning environment with direct guidance and advice from the graduate student advisor. The results of this study reflect that the comprehensive cultural and artistic abilities and academic influence of graduate student instructors have a direct impact on the development of comprehensive graduate student calligraphy skills, and that the level of comprehensive abilities of graduate student instructors affects the effectiveness in teaching delivery. In Cai's (2022) study, it was pointed out that the teaching delivery process considers the concentration and persistence of teachers and students in teaching and learning, and the teaching guidance and professional control of graduate student instructors, which places high demands on the comprehensive quality of graduate student instructors.

In a study, Ni & Fan (2017) argued that to improve the professional merit, academic strength and humanistic character of graduate student instructors, the academic achievement and research ability of instructors and their influence have a crucial impact on students' learning and research. The findings suggest that Chinese calligraphy graduate education still follows the traditional teaching delivery method and the flipped classroom model needs to be further applied in the actual teaching delivery.

Curriculum Arrangement

Table 3 shows the degree of effectiveness of the implementation of the calligraphy integrated competency development strategy in terms of curriculum arrangement.

Table 3: Curriculum Arrangement

Indicators	Mean	Description
Pay attention to the cultivation of students' problem consciousness and academic thinking, set up academic paper writing and paper standard courses	3.53	Very Effective
The school focuses on cultivating students' global view of art history and offers courses on art history at Chinese and foreign countries	3.39	Very Effective
Pay attention to the academic frontier dynamics at home and abroad, broaden the academic vision and international visual threshold	3.16	Moderately Effective

Set up classical courses to cultivate students' literacy	2.44	Slightly Effective
Set up other interdisciplinary knowledge courses to improve the students' knowledge structure	2.42	Slightly Effective
General Weighted Average	2.99	Moderately Effective

Table 3 shows an average effective level of implementation of the calligraphy integrated competency development strategy in terms of curriculum arrangement (2.99). There is still room for improvement. Based on the analysis of the data, the highest level of effectiveness (3.53) was found in the implementation of the strategy "focus on the development of students' problem awareness and academic thinking, and offer academic essay writing and academic standards courses". This result indicates that the cultivation of problem awareness and academic thinking is very important in the process of developing comprehensive calligraphic skills, and the introduction of academic essay writing and academic standards courses improves students' academic standards. This confirms Qiu's (2017) view that the cultivation of problem awareness and thinking skills are extremely important foundations, and Li's (2017) view that mastering multiple research methods and opening academic horizons improve the academic research ability of calligraphy graduate students. There is also Xu's (2017) view: cultivating calligraphy graduate students' awareness of academic norms in terms of teaching orientation and curriculum content setting. Therefore, the researcher believes that focusing on the learning and guidance of research methodology in graduate education opens students' research horizons, thus improving the academic research ability of calligraphy graduate students. This will not only enhance the cultivation of students' comprehensive calligraphic ability, but also contribute to the heritage and development of calligraphy, which is an inherent requirement for the implementation of the strategy of "going abroad" of Chinese culture.

The second highest level of validity is: "The school focuses on cultivating students' global art historical perspective and offers courses in Chinese and foreign art history" (3.39). As China's comprehensive national power has steadily increased in recent years, international exchanges have been on the rise, and calligraphy has assumed an increasingly prominent role as the core competitiveness of the soft power of a great nation. The survey results show that the Chinese government's strategy of "going global" with traditional Chinese culture and globalized multicultural interaction require the cultivation of comprehensive talents with international perspectives. The curriculum design of the talent delivery course offers Chinese and foreign art history courses to help students understand the history and frontiers of Chinese and foreign art development. This result is consistent with Zhao's (2021) findings: graduate academic research in calligraphy in colleges and universities needs to have a broader research vision and ability, while calligraphy should have a global historical perspective. Similarly, Qi's (2017) study: in addition to research results from their own country, research results and methods from Japan can be equally useful. Therefore, it is important and necessary to strengthen the development of a global artistic perspective in the teaching delivery process and to guide students to think about the global artistic perspective that calligraphy has. Only the cultivation of a large number of calligraphers with a

global perspective and comprehensive competence will be an important guarantee for the implementation of the strategy of the Chinese culture going abroad.

At the bottom of the list is "establishing other interdisciplinary knowledge courses to improve students' knowledge structure" (2.42). The researcher suggests that this result is due to the lack of sufficient integration of quality teaching resources from various disciplines within comprehensive universities by Chinese university administrators and the lack of emphasis on the construction of a curriculum for the development of comprehensive competence in calligraphy. One of the important goals of graduate education in calligraphy is to produce qualified teachers with comprehensive calligraphy skills for society. This is consistent with Lu's (2020) findings that calligraphy teachers should have a deep cultural connotation and be able to integrate and integrate, be proficient in calligraphy expertise; understand pedagogy and psychology and be adept at teaching to the material; understand Chinese and foreign art history; and understand the knowledge systems of art, design, literature, and other related disciplines. Likewise, the study of He (2020):Calligraphy has close doctrinal ties to philosophy, aesthetics, cultural studies, literature, philology, Chinese painting, and other disciplines and professions. This also places a demand on the knowledge structure of teachers of calligraphy. The acquisition of comprehensive competence of calligraphy graduate students depends on the completeness of the curriculum system for the cultivation of comprehensive competence in calligraphy in colleges and universities; therefore, the level of implementation of cultivation strategies in terms of curriculum arrangement profoundly affects the enhancement of comprehensive competence in calligraphy of calligraphy graduate students.

Employment

Table 4 shows the degree of effectiveness of the implementation of comprehensive competency development strategies for calligraphy in employment.

Table 4: Employment

Indicators	Mean	Description
During the postgraduate period, part-time calligraphy inside or outside the school	3.47	Very Effective
Tutors often care about students' study and life, and give employment guidance and suggestions	3.17	Moderately Effective
The school pays attention to the cultivation of employment ability and offers employment guidance courses	2.42	Slightly Effective
In addition to calligraphy and seal cutting professional skills, what other calligraphy-related skills are there	2.40	Slightly Effective

Pay attention to calligraphy teaching practice, strengthen the study of pedagogy, psychology and teaching methods	1.62	Not Effective
General Weighted Average	2.62	Moderately Effective

The analysis of the data in Table 4 shows that the level of implementation of comprehensive competence development strategies for calligraphy in employment is generally effective (2.62). The researcher believes that the main reason for this result is a combination of internal and external factors. The internal factors mainly consider the relatively weak awareness of graduate students' self-career skills enhancement and their vague career development plans, which affect their own motivation and the effectiveness of self-integrated ability enhancement. The external factor is that university administrators are relatively lacking in providing students with more relevant career guidance courses and employment internship positions. The survey revealed that Chinese universities rarely offer employment-related courses at the postgraduate education stage, and therefore generally lack the cultivation of calligraphy graduate students' employability. This is one of the major reasons for the poor employment situation of calligraphy graduate students in recent years.

This is consistent with Lu's (2020) findings that difficulty in employment and narrow employment are the biggest problems facing higher education in contemporary Chinese calligraphy. Calligraphy students have to go to the expense of taking qualifications such as accounting and driving licenses in order to increase their competitive leverage for employment. Similarly, Ao (2015) noted the employment problem of calligraphy graduate students and suggested that employment in calligraphy education needs to achieve basic goals, namely skill goals, theoretical goals, and competence goals.

On average, the strategy implementation effectiveness of doing part-time calligraphy jobs inside and outside of school was highest during graduate school (3.47). This reflects that the vast majority of calligraphy graduate students have engaged in part-time calligraphy jobs both in and out of school during their enrollment, and have gained employability and social experience through part-time calligraphy activities.

Ao's (2015) study: calligraphy graduates have a wide range of prospects: employment with basic calligraphy skills, employment with calligraphy creation, employment with basic calligraphy knowledge, employment with calligraphy ability, employment with organizational ability, employment with service consciousness, and other aspects of employment, and do not limit.

Feng's (2016) study: developing employment pathways. In addition to the calligraphy education industry there are also enterprises and institutions such as newspapers, publishing houses, television stations, and cultural departments, as well as being full-time calligraphers for entrepreneurship, or joining the military as literary soldiers. This is consistent with the conclusion that graduate students in calligraphy are willing to try part-time jobs inside and outside of school

for their own comprehensive calligraphy abilities.

The second is "mentors often take an interest in students' studies and lives, and provide career guidance and advice" (3.17). Graduate student advisors have an important role in graduate student training and career planning. Whether it is academic, life or employment and life planning, graduate student supervisors assume the role of guidance. Therefore, the professional ability, comprehensive quality improvement and personal development of graduate students are closely related to graduate student supervisors.

In his study, Xin (2017) argued that the supervisor acts as the first responsible person for postgraduate training. in Cai's (2022) study, he found that the teaching guidance of the supervisor is throughout the whole process of learning at the postgraduate level, and the figure of the supervisor sometimes lingers in the postgraduate training and career planning and employment.

In terms of data, the bottom tier is "focus on calligraphy teaching practice and strengthen research on pedagogy, psychology, and teaching methods" (1.62). The researcher attributes this result to the relatively low calligraphy employability of graduate students. An in-depth discussion reveals that although students believe in the importance of calligraphy practice, there is still a problem of emphasizing theoretical research and neglecting technical training, while the relative lack of courses related to pedagogy, pedagogy, and psychology needed by educational administrators to improve calligraphy employability may lead to the fact that some graduate students enrolled in interdisciplinary programs do not know how to teach nor have the comprehensive calligraphic ability to competently teach, which can lead to The phenomenon of employment difficulties.

The findings are consistent with Huang's (2017) study: due to the employment situation, the art teaching certificate is a knockout for entering primary and secondary schools as a calligraphy teacher, so the curriculum adds art, pedagogy, and educational psychology courses. In fact, as the group of calligraphy graduates increases year by year, the threshold for entering primary and secondary schools to teach rises, and often some primary and secondary schools and high schools require a master's degree or higher in calligraphy to recruit calligraphers to apply. Therefore, focusing on the practice of calligraphy teaching, strengthening the study of pedagogy, psychology, and teaching methods, and enhancing graduate students' own comprehensive calligraphy abilities will help improve graduate students' employability.

Table 5 depicts the degree of effectiveness of the implementation of comprehensive calligraphy competency development strategies in Chinese comprehensive universities.

Table 5 :Summary Table for the Strategies in cultivating the comprehensive abilities in calligraphy

Indicators	Mean	Description
Curriculum Arrangement	2.99	Moderately Effective
Instructional Delivery	2.72	Moderately Effective
Talent Training	2.71	Moderately Effective
Employment	2.62	Moderately Effective
General Weighted Average	2.76	Moderately Effective

As seen in Figure 5, of the four elements studied, the highest level of effectiveness implementation was in course scheduling, followed by instructional delivery, and the weakest in employment.

The survey shows that Chinese comprehensive colleges and universities have a good level of effective implementation of comprehensive calligraphy competency development strategies in curriculum arrangement, teaching delivery, talent training, and employment. First, the effective implementation of curriculum arrangement strategies such as academic essays, Chinese and foreign art history and theory, and interdisciplinarity enhance students' individual academic abilities and broaden their knowledge structure and international perspective; second, the implementation of teaching delivery strategies such as group discussion, multidisciplinary teaching, flipped classroom, and dual-track system are used by the university to help students enhance their individual comprehensive calligraphy abilities in classroom teaching. Finally, in terms of employment, students are able to accumulate social experience and enhance their employability through strategies such as part-time jobs on and off campus.

As Ni & Fan stated in their study, "Strengthening the cultivation of comprehensive literacy for graduate students in calligraphy"; Zhu (2017) also found in his study that "while cultivating high-quality professionals, efforts are needed to strengthen the construction of the discipline of calligraphy and improve its own education system. " Therefore, it is necessary to further improve the cultivation of comprehensive competence in calligraphy in graduate education.

The effectiveness of implementing strategies in the curriculum arrangement aspect of comprehensive competence cultivation in calligraphy scored the highest among several factors. Paying attention to the effective implementation of strategies in terms of curriculum arrangement in the cultivation of comprehensive competence in calligraphy will have an important impact on the high-quality development of graduate education, and will also facilitate the construction of a comprehensive competence cultivation system in calligraphy and the further exploration and development of talent cultivation programs with an international perspective.

As Liu & Lai (2021) stated, "The postgraduate calligraphy curriculum is the core of postgraduate calligraphy education, and the strengths and weaknesses of the curriculum directly affect the level of postgraduate calligraphy education." In his study, Sun (2022) argued that the curriculum in higher calligraphy education is crucial and directly affects the effectiveness of talent cultivation. Therefore, it is particularly important to give full play to the effective implementation of strategies in curriculum arrangement to develop students' comprehensive calligraphy skills.

The second is instructional delivery. Teaching delivery is the specific implementation of teaching methods and approaches in the development of comprehensive competence in calligraphy, and effective implementation of strategies in teaching delivery can help further enhance and improve teaching content, teaching methods, and teaching effectiveness.

Zheng (2013) proposes an integrated teaching style that emphasizes both "technique" and "path" in his study. This is not only a requirement of Chinese cultural traditions, but also a requirement of the "ecological" form of existence of Chinese art disciplines. Zheng's (2013) study suggests that the implementation of teaching strategies for calligraphy graduate students must be based on Chinese cultural foundations and consistent historical thinking, and that the boundaries between "creative" and "academic" must be diluted to design teaching according to the inherent laws of Chinese art. The goal of implementing teaching strategies for graduate students in calligraphy is to develop comprehensive calligraphic skills.

At the bottom of the list is employment. The single channel of employment for students and the relatively narrow employment surface are the current problems faced by calligraphy higher education. Therefore, one issue that stands out is the need to both enhance students' employability and at the same time broaden their employment channels. Enhancing employability is an important part of developing comprehensive calligraphy skills.

Sun's (2017) study suggests that in order to further improve the employment situation of calligraphy graduate students, a "multi-disciplinary" training model could be adopted to allow calligraphy to penetrate various fields. Similarly, Yang's (2013) study suggests that in order to truly bring calligraphy back to life, elements of calligraphy must be integrated with the professions that are in demand in contemporary society. Therefore, further effective implementation of employment-related strategies to enhance the development of comprehensive calligraphy skills is fundamental to solving the employment problem.

Conclusion

Based on the research of domestic and international scholars on strategies for the development of comprehensive calligraphy abilities, this study further conducted an empirical study on the effectiveness of the implementation of strategies involving talent development, teaching delivery, curriculum arrangement, and employment, and the results obtained are of great significance in terms of reference value. The findings show significant variability in the effectiveness of implementation of different strategies in different elements, indicating that students treat different strategies for comprehensive calligraphy competency development with

different perceptions. The data show that the effectiveness of strategy implementation for comprehensive calligraphy competency development in curriculum arrangement, teaching delivery and talent development, and employment is average. This result suggests the need to further strengthen research on calligraphy comprehensive competence cultivation strategies, which will be conducive to optimizing the construction of comprehensive university graduate education and calligraphy comprehensive competence cultivation system, and will be conducive to exploring talent cultivation programs for calligraphy graduate education with an international perspective. At the same time, it will be of realistic value to the heritage of Chinese traditional culture and the "going out" strategy.

Recommendation

Based on the findings of this study, we propose the following recommendations:

1. the Chinese Ministry of Education and school authorities hold conferences and seminars on the cultivation of calligraphic comprehensive ability talents to form a unified system for the cultivation of calligraphic comprehensive ability talents as well as to explore and develop an international perspective on the cultivation of calligraphic graduate education talents.

2. Department heads and school presidents of comprehensive universities can further integrate quality teaching resources within their schools into the talent training system for comprehensive calligraphy competence, such as literature, history, philosophy, art, and other disciplines that have close ties to calligraphy.

3. Schools strengthen the enhancement and training of calligraphy graduate instructors in comprehensive calligraphy competency in order to more effectively play a role in the cultivation of comprehensive calligraphy competency.

4. Based on the findings, the school further adjusts and researches strategies for the cultivation of comprehensive calligraphy competence, which may allow for further enhancement and optimization of strategy implementation in talent cultivation, teaching delivery, curriculum arrangement, and employment.

5. Future researchers may conduct follow-up studies in three comprehensive colleges and universities in southwestern China for validation.

Acknowledgment

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Appendix A
Sample Questionnaire
University of the Cordilleras
College of Teacher Education
Graduate School

Questionnaire

The purpose of this survey is to investigate the level of effectiveness of the strategies in cultivating the comprehensive abilities in calligraphy. You could rate the level of effectiveness based on your own experience. Your answer will be confidential. Thank you for your cooperation.

Name (optional) _____

Gender   ____ Male   Female _____

Program   _____   Age _____

School   _____

Indicate the level of effectiveness of the strategies in cultivating the comprehensive abilities in calligraphy by checking your response to the right of each statement. Please be guided by the scale below:

Category	Description	Interpretation
4	Very Effective	The strategies to a great extent meet varied students' needs and build the skills and character for learning.
3	Moderately Effective	The strategies to certain extent meets varied students' needs and somewhat build the skills and character for learning
2	Slightly Effective	The strategies to a little extent meets varied students' needs and to a little extent build the skills and character for learning
1	Not Effective	The strategies not at all meets varied students' needs and not at all build the skills and character for learning

Talent Training	4	3	2	1
Pay more attention to the combination of calligraphy theory and practice				
Have a solid five-body calligraphy copying ability				
Have a solid calligraphy creation ability, specialized and versatile				
He published academic research papers during his postgraduate study in calligraphy				
During the calligraphy graduate students participated in the calligraphy exhibition sponsored by the Chinese Calligraphy Association				
Instructional Delivery	4	3	2	1
The classroom teaching atmosphere is active, using group discussion, making reports and other forms of communication and learning				
Adopt the classroom mode of flipped classroom to mobilize students' enthusiasm and enthusiasm for learning				
The school offers many whole elective courses to strengthen the communication between students of different disciplines				
Using techniques and theory of dual-track system of teaching				
Postgraduate tutors teach students in accordance with their aptitude, and pay great attention to the cultivation of students' personal ability				
Curriculum Arrangement	4	3	2	1
Pay attention to the cultivation of students' problem consciousness and academic thinking, set up academic paper writing and paper standard courses				
The school focuses on cultivating students' global view of art history and offers courses on art history at Chinese and foreign countries				
Set up other interdisciplinary knowledge courses to improve the students' knowledge structure				
Pay attention to the academic frontier dynamics at home and abroad, broaden the academic vision and international visual threshold				
Set up classical courses to cultivate students' literacy				
Employment	4	3	2	1
The school pays attention to the cultivation of employment ability and offers employment guidance courses				
Pay attention to calligraphy teaching practice, strengthen the study of pedagogy, psychology and teaching methods				
Tutors often care about students' study and life, and give employment guidance and suggestions				
During the postgraduate period, part-time calligraphy inside or outside the school				
In addition to calligraphy and seal cutting professional skills, what other calligraphy-related skills are there				

Appendix B

Raw Data

(The degree of effectiveness of strategies for the development of comprehensive calligraphy skills)

(N=236,4=Very Effective;3=Moderately Effective;2=Slightly   Effective;1=Not Effective)

Factors	Indicators	4	3	2	1	Mean
Talent Training	Pay more attention to the combination of calligraphy theory and practice	48 (20.34%)	172 (72.88%)	14 (5.93%)	2 (0.85%)	3.12
	Have a solid five-body calligraphy copying ability	18 (7.63%)	49 (20.76%)	167 (70.76%)	2 (0.85%)	2.66
	Have a solid calligraphy creation ability, specialized and versatile	19 (8.05%)	58 (24.58%)	157 (66.53%)	2 (0.85%)	2.4
	He published academic research papers during his postgraduate study in calligraphy	145 (61.44%)	65 (27.54%)	22 (9.32%)	4 (1.69%)	3.49
	During the calligraphy graduate students participated in the calligraphy exhibition sponsored by the Chinese Calligraphy Association	6 (2.54%)	19 (8.05%)	157 (66.53%)	54 (22.88%)	1.9
Instructional Delivery	The classroom teaching atmosphere is active, using group discussion, making reports and other forms of communication and learning	149 (63.14%)	62 (26.27%)	22 (9.32%)	3 (1.27%)	3.51
	Adopt the classroom mode of flipped classroom to mobilize students' enthusiasm and enthusiasm for learning	4 (1.69%)	57 (24.15%)	155 (65.68%)	20 (8.47%)	2.19
	The school offers many whole elective courses to strengthen the communication between students of different disciplines	64 (27.12%)	148 (62.71%)	19 (8.05%)	5 (2.12%)	3.15
	Using techniques and theory of dual-track system of teaching	16 (6.78%)	64 (27.12%)	154 (65.25%)	2 (0.85%)	2.39
	Postgraduate tutors teach students in accordance with their aptitude, and pay great attention to the cultivation of students' personal ability	17 (7.2%)	56 (23.73%)	159 (20.34%)	4 (1.69%)	2.36
Curriculum Arrangement	Pay attention to the cultivation of students' problem consciousness and academic thinking, set up academic paper writing and paper standard courses	148 (62.71%)	66 (27.97%)	20 (8.47%)	2 (0.85%)	3.53
	The school focuses on cultivating students' global view of art history and offers courses on art history at Chinese and foreign countries	153 (64.83%)	23 (9.75%)	58 (24.58%)	2 (8.85%)	3.39
	Set up other interdisciplinary knowledge courses to improve the students' knowledge structure	17 (7.2%)	69 (29.24%)	146 (61.86%)	4 (1.69%)	2.42
	Pay attention to the academic frontier dynamics at home and abroad, broaden the academic vision and international visual threshold	64 (27.12%)	149 (63.14%)	20 (8.47%)	3 (1.27%)	3.16

	Set up classical courses to cultivate students' literacy	20 (8.47 %)	67 (28.39%)	145 (61.44%)	4 (1.69 %)	2.44
Employment	The school pays attention to the cultivation of employment ability and offers employment guidance courses	19 (8.05 %)	65 (27.54%)	148 (62.71%)	4 (1.69 %)	2.42
	Pay attention to calligraphy teaching practice, strengthen the study of pedagogy, psychology and teaching methods	2 (0.85 %)	59 (25 %)	22 (9.32%)	153 (64.83 %)	1.62
	Tutors often care about students' study and life, and give employment guidance and suggestions	62 (26.27 %)	153 (64。83%)	19 (8.05%)	2 (0.85 %)	3.17
	During the postgraduate period, part-time calligraphy inside or outside the school	140 (59.32 %)	71 (30.08%)	20 (8.47%)	5 (2 。12%)	3.47
	In addition to calligraphy and seal cutting professional skills, what other calligraphy-related skills are there	17 (7.2%)	64 (27.12%)	151 (63.98%)	4 (1.69 %)	2.40

Appendix C

Reliability Analysis Results

Cronbach

Items	Sample Size	Cronbach α
20	33	0.966

Appendix D

Expert Validity Evaluation Form

	Very high validity	Higher validity	Moderate validity	Slight validity	No validity
Structural validity	0.8				
Content validity		0.7			