THE CHINESE UNIVERSITY PHOTOGRAPHY EDUCATION IN ERA OF LIVE STREAMING, SHORT VIDEOS AND IMAGES

WANG, X. X.[1] – MOHAMED, S.[1] – ADNAN, W. H.[1*]

[1] *Faculty of Communication & Media Studies, Universiti Teknologi MARA, Selangor, Malaysia.*

**Corresponding author*
e-mail: wardatul[at]uitm.edu.my

(Received 15th May 2025; revised 18th August 2025; accepted 29th August 2025)

Abstract. The rapid development of new media has resulted in popular communication methods such as live streaming and short videos, which has had a huge impact on the media sector. This study investigates the state of photography education at Chinese colleges in the context of rising media's difficulties and potential. The research covers the historical development of photography programmes, the impact of live streaming and short videos on photography education, curriculum design, and talent cultivation approaches through in-depth interviews with photography department heads and teachers from five applied universities in China. The findings show that live streaming and short videos have a good impact on photography education, increasing job options for students and forcing schools to upgrade their teaching methods and material. However, the incorporation of live streaming and short videos introduces new issues, such as the need for curriculum change and a scarcity of trained teachers. Recommendations are made to solve these difficulties, including increasing interdisciplinary collaboration, working with industry training institutions, and upgrading talent cultivation programmes. The findings of the study provide important insights for the ongoing improvement and transformation of practical university photography teaching.
Keywords: *Chinese University, photography education, live streaming, short videos, images, China*

Introduction

In the rapidly evolving media landscape, the field of photography education in Chinese universities is facing new challenges and opportunities (Zhang, 2021). The emergence and widespread adoption of live streaming and short videos have completely changed the consumption and creation of visual content (Cheng et al., 2023). These new media forms and platforms have not only transformed related industries, such as e-commerce and social platforms' preference for live streaming and short videos but have also directly influenced the demand for photography-related skills and expertise (Zhang, 2021). Thus, this issue must be addressed in order to ensure the survival of the photography education in the present. Traditionally, the foundation of photography education in Chinese universities has been built upon traditional photography techniques and principles, and still photographers have enjoyed a favourable employment ecosystem. However, the rise of live streaming, short videos, and digital imagery has brought about a shift in the talent demand within the industry. There has been a decline in demand for traditional still photographers, while the demand for talents in live streaming and short videos has surged. Additionally, with the advent of the AI wave, AI-powered image generation technology can create images solely based on textual descriptions, posing significant challenges to the field of visual imagery (Amato et al., 2019). In this era of real-time and interactive visual experiences, it is crucial for photography students to be equipped with skills to effectively utilise these emerging media forms. The adoption with the emerging new technology helped users and in preparing better photography results that will satisfy many. The shortage of skills

among users lead to a gap of fulfilling demand with quality photos, videos and videography.

Therefore, exploring the future of photography education in China universities specifically in the context of live streaming, short videos, and images are needed to ensure demands are fulfilled and satisfied by users. The focus is on understanding the current development status, talent cultivation, and curriculum reform in applied photography programs, as well as whether emerging media forms like live streaming and short videos are being integrated into the current talent development models. The rise of live streaming and short videos, the media industry is undergoing significant transformation for many to catching up to stay relevant. These new forms of communication have been widely adopted and popularised in areas such as e-commerce and social platforms. The present study also intends to investigate the challenges and experiences faced by these institutions in incorporating these emerging media forms into their curricula. In this new media landscape, the photography profession is also facing unprecedented challenges and opportunities. While the rapid growth of live streaming and short videos has created more opportunities for some photography students in the job market, it has also brought pressure to traditional static image photographers by reducing job opportunities. To better adapt to this new media environment, photography education needs corresponding reforms and upgrades to meet the needs of students and the industry (Nao, 2019). Scholars have proven the importance of the new skill to be equipped towards its learners to ensure the relevancy and demand in the industry.

Therefore, to addresses a notable research gap, examining the impact of these new media forms on photography education within Chinese applied universities. Secondly, the findings offer valuable insights to guide and inform the reform and transformation of photography education in China universities. Furthermore, understanding the challenges and experiences associated with integrating live streaming and short videos into the curriculum, the study provides practical recommendations and educational strategies for other universities to adopt similar changes. To achieve the aforementioned objectives, the specific goals of this research are as follows: (1) RO1: To understand the status of talent cultivation in China university photography education under the influence of live streaming and short video environments; (2) RO2: To explore the advantages and challenges of integrating live streaming and short videos into the current talent cultivation model; and (3) RO3: To propose reform recommendations for China university photography education to adapt to the new media era.

Literature review

Overview of photography education in Chinese Universities

The development of photography education in China began with the introduction of photography art from the West during the late Qing Dynasty (Xue, 2023). Photography as an educational discipline in China can be traced back to the establishment of photography organisations, such as "Guangshe" in Beijing, "Zhonghua Photography Study Society" in Shanghai, and "Jingshe" in Guangzhou in the 1920s (Guo, 2022). Notably, the Chinese Photographers Association, founded in 1956, has played a significant role in promoting photography education (Chen et al., 2019). in 2012, the Chinese Ministry of Education marked a pivotal moment in the formal development of photography as a profession in China. This move entailed the official classification of

photography as a sub-discipline under the broader umbrella of "Art Studies" (Li et al., 2021). This recognition underscored the profound significance of photography in the realm of visual arts education and acknowledged its evolving role within the Chinese cultural landscape. This shift from the categorisation of "photography" to the broader concept of "visual imagery" is indicative of a transformative journey that photography education in China is currently undergoing. The transformation represents a departure from the traditional emphasis on humanistic and sociological aspects within photography and points towards a more encompassing approach. This redefinition of photography education reflects a changing paradigm in Chinese society. It acknowledges that photography has transcended its conventional boundaries and evolved into a versatile medium for creative expression (Hu, 2022). The classification of photography as "visual imagery" recognizes its power to encapsulate, communicate, and evoke emotions, ideas, and concepts through images. Moreover, this reclassification is emblematic of the digital age, where technological advancements have democratised photography and visual representation (Lopez-Mugica and Whyke, 2024). Today, virtually anyone with a smartphone can be a photographer, and the scope of visual imagery extends beyond traditional photographic techniques to encompass digital media, graphic design, and multimedia art.

Visual imagery encompasses not only photographic images but also dynamic images, streaming media, and even a complex amalgamation of technological mediums and concepts like VR and AR (Larsen and Sandbye, 2020). The distinction between photographic art and visual art, photographic technology and digital technology, photographic images and digital images, has become increasingly blurred, often depending solely on the specific context and reference of these terms (Bate, 2020). In today's digital age, the forms of photography have become more diverse and technologically advanced. Photography techniques have become simpler, emphasizing collaborative photography. The applications of photography have become broader and more complex (Liebenberg, 2018). However, photography education also faces many more challenges due to the current changes and the evolution of new technology.

Evolution of media forms and platforms

When discussing the evolution of media forms and platforms, it's essential to consider the historical progression of media, which has evolved in response to technological, societal, and cultural changes. This evolution can be divided into several key eras: Print Media Era (15th-19th Century): The invention of classical printing technology revolutionised the spread of books and cultural knowledge, opening doors for the dissemination of knowledge during the Renaissance period. In the late 17th century, the first newspapers emerged, giving birth to the field of journalism, and newspapers became a primary medium for information dissemination. Telegraph and Telecommunications Era in 19th-20th Century has shown the development of communication. The proliferation of the telegraph changed the way communication occurred, enabling instant messaging and expanding the speed and reach of information transmission. Meanwhile, telecommunications, such as telephones, became a part of people's daily lives, further reducing communication barriers. Meanwhile, the broadcast and television Era in the 20th to 21st century has contributed to the rise of radio broadcasting and television further transformed the media landscape. Radio stations became major sources of news, entertainment, and culture, while international broadcasting helped spread global news and information. Television altered how people

entertained themselves at home and fostered the advertising and television production industries (Sanjeev, 2023).

Streaming and online video platforms like Netflix, Hulu, YouTube, TikTok, etc., disrupted the television and film industries, allowing viewers to consume content on-demand (Helmond and Van Der Vlist, 2019). New Media Era (Early 21st Century): Many scholars consider this era to be the age of new media, emphasizing user-generated content, personalized experiences, and global connectivity (Shutsko, 2020). Virtual reality and augmented reality technologies have elevated media experiences to new heights, impacting entertainment, education, and various other fields (Wang, 2021). Artificial intelligence is used for content recommendation, automated content generation, and intelligent assistants, further customizing media experiences. In this era, media is no longer one-way communication but a multi-directional interactive experience, with media consumers becoming participants (Nansen et al., 2023). Photography, as a form of visual communication, has thrived in the 20th and 21st centuries (Larsen and Sandbye, 2020). With advancements in communication technology and the widespread adoption of smartphones, short videos and live streaming have become dominant forms of communication. The technological advancements of the new media era have driven the proliferation of live streaming media, which has become a common part of life and entertainment for people in China (Wang, 2021). As of now, short videos and live streaming are widely used on e-commerce and social media platforms and have surpassed static two-dimensional images in terms of popularity and engagement (Si, 2021). These new media forms offer real-time, interactive, and immersive experiences, revolutionising communication and content consumption (Zheng and Ni, 2020).

Impact of live streaming and short videos on photograph

The rise of live streaming media and short videos has had profound effects on static images in several aspects. Firstly, there's an enhancement in real-time and interactivity. Live streaming media and short video platforms are renowned for their real-time nature and interactivity (Kang et al., 2021). These platforms make visual content more immediate and interactive, allowing viewers to comment, like, or share live content in real time. This trend fosters a closer interaction between photographers and their audience, transforming visual works into real-time shared and discussed subjects. Secondly, there's increased diversity in content creation. Short videos and live streaming platforms offer photographers new opportunities to showcase their creativity (Woodcock and Johnson, 2021). Through these platforms, photographers can create various types of content, from short video stories to real-time live events, thereby attracting a broader audience. Lastly, there's an expansion in the speed and reach of visual content dissemination. The characteristics of live streaming media and short videos enable photographic works to be rapidly disseminated globally. A captivating live stream or short video can garner millions or even billions of viewers on social media within a short timeframe (Arisanty et al., 2020). From these various perspectives, the outlook for the development of photographic images may not be optimistic, but static images still possess their unique advantages (Henning, 2023). The rise of live streaming and short videos has disrupted the job market for photography professionals. While there is a growing demand for talent in live streaming and short video-related fields, the demand for traditional static image photographers have decreased significantly (Xiaojun, 2020). Job postings for photography and image post-production

have declined, while positions related to live streaming have experienced significant growth. This shift in demand poses challenges for photography education programs to adapt their curricula to meet the changing industry landscape.

Current challenges and opportunities

Photography education faces challenges in talent development, curriculum design, and industry alignment. The lack of specialized programs and structured pathways for live streaming and short video-related professions contributes to a talent gap in these areas. However, this new media landscape also presents opportunities for universities to innovate and integrate live streaming and short videos into photography education. Successful case studies from leading institutions like China Media University and Sichuan Institute of Cultural Arts demonstrate the potential of incorporating live streaming and short videos in photography education to bridge the gap between industry demands and talent supply. Hence, photography education in Chinese universities is at a critical juncture, as it navigates the impact of emerging media and technologies. Addressing the challenges and embracing the opportunities presented by live streaming and short videos can help universities better prepare photography students for the dynamic media industry. As the field continues to evolve, collaboration with industry partners, interdisciplinary integration, and technology-driven curricular updates are key to cultivating skilled professionals who can thrive in the ever-changing world of photography and media.

Materials and Methods

This research adopts a qualitative research method, primarily relying on in-depth interviews and literature collection as data sources (Deterding and Waters, 2021). In-depth interviews are commonly used in qualitative research to engage in oral conversations with participants and gather their perspectives and opinions (Knott et al., 2022). The present study focuses on the photography programs of five applied universities, and the interviewees include department heads, professors, associate professors, and lecturers to ensure diversity in the sampling. The total sample size for this study consists of 9 individuals, including 5 heads of the photography department and 4 instructors within the same department. The criteria for selecting the research sample includes undergraduates from recognised universities applied undergraduate institutions recognised by the Ministry of Education, with the photography program established for minimum of five years, a teaching team of no less than ten faculty members, and student enrolment of no fewer than 100 for each intake. Participant that participating in the study must have working experience of minimum of two years. The research is limited to applied undergraduate-level universities recognised by the Ministry of Education, excluding graduate schools, colleges, vocational institutions, and extracurricular training organisations. The research focuses on talent cultivation programs, curriculum design, teaching methodologies, and reform proposals in the field of photography. Through in-depth interviews, the study aims to explore the strengths and challenges of photography education in the context of new media such as live broadcasting and short videos and propose directions for reforming photography education to adapt to the new media era.

During the interview process, a semi-structured interview outline is employed to ensure flexibility and consistency. The collected interview data will be categorised and

summarised using software tools called Envoi to facilitate data analysis and synthesis. Additionally, the study includes an analysis of professional talent cultivation programs and literature collection to support the research content and gain deeper insights into the development trends of photography programs. This is aims to propose reform suggestions for photography education in Chinese universities, fostering talents who can meet the demands of the new media era and promoting the integration of photography education with emerging media (*Table 1*).

Table 1. *Background information regarding on informant.*

Sample	Gender	Age	Position	Background
Informant 1	Male	38	Head of Photography Department	Holds a Master's degree and has over 10 years of experience in the field of photography.
Informant 2	Male	62	Head of Photography Department and Dean	Holds an undergraduate degree with over 30 years of experience in photography-related work, including 6 years as a Dean.
Informant 3	Male	52	Head of Photography Department and Dean	Holds an undergraduate degree with over 20 years of experience in photography-related work, including 4 years as a Dean.
Informant 4	Female	54	Head of Photography Department and Dean	Holds a Master's degree with over 17 years of experience in photography-related work, including 2 years as a Dean.
Informant 5	Female	49	Head of Photography Department	Holds a Master's degree with over 10 years of experience in the photography discipline.
Informant 6	Male	43	University lecturer in photography	Formerly a professional commercial photographer, he became a university lecturer in photography in 2017.
Informant 7	Male	36	Associate professor of photography	He has been teaching photography for 9 years, mainly teaching commercial portrait photography and advertising photography.
Informant 8	Female	48	University professor of photography	She teaches photography post-processing courses at the university and is the owner of an advertising agency.
Informant 9	Male	33	University lecturer in photography	He mainly teaches courses related to short film creation at the university, and is also a short food video blogger on the Internet.

Results and Discussion

The impact of short videos and live streaming on talent cultivation in Chinese photograph education

The five applied universities in Sichuan Province that participated in the survey all lean towards applied education, focusing on cultivating versatile talents with practical application skills and innovative spirit. Four of these universities offer a diverse range of directions in photography education at both the undergraduate and junior college levels. These include static photography, dynamic video photography, film and television production, and cinematography technology, mainly divided into dynamic image and static video specialisations. However, one university primarily focuses on traditional photography without branching into dynamic video.

> "*Our photography program is mainly divided into two directions: film and television photography, and film and television production. Film and television photography focuses on photography, covering main courses like images, composition, and aesthetics. Film and television production focuses on post-production, with main courses in editing, special effects, and color grading*".
>
> (Informant 3/Head of Photography Department and Dean/17 December 2023)

The surveyed schools primarily adopt a project-oriented practical teaching model in their photography programs, emphasizing the combination of theory and practice. They enhance students' practical skills through collaborative education methods. The teaching approach is outcome-oriented, stressing immersive practical training while completing projects. Additionally, these schools collaborate with the industry, providing students

with real work environment experiences and transitioning from specialised talent cultivation to more comprehensive professional training. These teaching models lay a solid foundation for students' diverse career paths and entrepreneurial activities in the photography field.

> "*Our program emphasizes the combination of theory and practice. After teaching theoretical courses, we arrange a significant amount of 'practical training courses' to ensure students have a solid theoretical foundation and proficient skills. Additionally, each semester, we organize field trips and inspections to help students understand the industry's development prospects. For example, in a course, we set at least 60% practical content, with the remaining 40% being theoretical content. The distribution of 'theoretical courses' and 'practical training courses' depends on the specific course attributes. For instance, 'History of Photography Development' is purely a theoretical course, while 'Commercial Portrait Photography' has 70% practical content and 30% theoretical content*".
>
> (Informant 4/Head of Photography Department and Dean/26 October 2023)

> "*Our program has established long-term cooperation with CCTV, China Film Archive, Emei Film Studio, Sichuan TV, and Chengdu TV, adopting joint education forms. This provides sufficient practical teaching foundations for students' practice activities, theoretical research, and observations. Consequently, many of our teachers have been working in these practical bases for a long time rather than in school classrooms*".
>
> (Informant 5/Head of Photography Department/18 October 2023)

The photography programs in the surveyed schools show a polarization in student enrollment and employment trends. In the static photography direction, employment prospects have been declining, with some students facing difficulties in finding jobs or even switching careers. Similarly, the number of new students enrolling in this specialization has been decreasing. In contrast, the film and television production direction has seen optimistic enrollment and employment trends. The rise of the short video industry has significantly increased the demand for skills in this area, leading to high employment rates for students, attracting many new students to this specialization. Overall, the prevalence of short videos and live streaming has improved employment rates in the dynamic imaging direction of photography education, while adversely affecting employment for students in traditional static photography. This conclusion further explains the phenomenon proposed by scholar Yan Hao: there is a significant gap between current higher photography education and the societal demand for photography talents. Many graduates from higher education institutions find it difficult to secure jobs related to their specialization, despite a high demand for such talents in the society (Yan, 2022). This supply-demand contradiction is the fundamental reason for the necessary reform and innovation in higher photography education.

> "*The overall employment situation for our static photography (undergraduate) program has been poor in recent years. Especially since 2021, the employment rate of our graduates has not met the minimum level required by the Ministry of Education. Graduates face employment difficulties and career changes, which has drawn the attention and concern of our school leadership*".

(Informant 2/Head of Photography Department and Dean/27 November 2023)

"*As I mentioned earlier, our photography school includes static photography and film and television production (dynamic imaging) directions in undergraduate education. The employment situation in the static photography direction has been declining year by year, while employment in the dynamic film and television production direction has been rapidly increasing. Due to changes in employment trends, new students have significantly shifted their preferences. Especially since 2020, the number of students enrolling in the film and television production (dynamic imaging) direction has sharply increased, for example, from four classes initially to nine classes. Meanwhile, the number of applicants for the photography (static photography) direction has consistently decreased, from seven classes initially to five classes. Students are smart; they choose to study specializations with better employment prospects*".

(Informant 1/Head of Photography Department/10 November 2023)

"*Our school's photography program has consistently ranked first in employment in recent years. Due to the popularity of short videos and live streaming, our students are in high demand. The employment rate for our photography and film production direction has been over 90% in recent years, reaching 98% last year despite the challenges posed by the COVID-19 pandemic. The Ministry of Education was skeptical and even formed a special task force to call our graduates to verify the authenticity of the data*".

(Informant 3/Head of Photography Department and Dean/17 December 2023)

The curriculum structures of the photography programs in the five surveyed schools all include courses related to dynamic video skills, although the proportion of these courses varies by school. Most schools have long offered courses such as non-linear editing, short film creation, special effects production, post-production editing, and cinematography. Only one school has a smaller proportion of dynamic video courses, mainly focusing on static photography teaching, and this school has also been at a disadvantage in student employment in recent years

"*Since our program was established in 2010, we have always included dynamic video teaching. The earliest course was called microfilm production, and we have since added many related courses. For example, courses like Fundamentals of Cinematography, Special Effects Production, Film Production, and Post-production Editing all fall under dynamic video teaching content*".

(Informant 3/Head of Photography Department and Dean/17 December 2023)

The live streaming courses in the photography programs of the five surveyed schools are currently in an exploratory stage. These programs have not yet incorporated live streaming skills into a mature course system. However, one school has already started exploring this field through project practices or new media-related courses, establishing an integrated production studio and real live streaming rooms, providing preliminary teaching in image and video live streaming. Another school plans to include live streaming skills in the next talent cultivation plan for the upcoming student cohort. These dynamics indicate that as the live streaming industry continues to grow and

develop, schools are gradually adjusting and enhancing their course content to meet market demands.

> "*We plan to include live streaming-related courses in the talent cultivation plan for next year (2024). This course has been newly added as a pilot project in our new media introduction course, currently covering theoretical concepts. Although we haven't set up a separate theoretical course, there are many live streaming practice projects*".
>
> (Informant 3/Head of Photography Department and Dean/17 December 2023)

> "*Our decision to offer live streaming-related teaching started in early 2020 when the COVID-19 pandemic was severe. Our admissions office approached our department, hoping we could conduct a live stream for admissions to let students and parents understand our campus and teaching environment through the internet. At that time, none of us had experience with live streaming, but to complete the task, I selected a few top-performing students to form a live streaming team for the admissions work. Thanks to our solid foundational training, students quickly transferred their knowledge to live streaming technology. The first live stream was very successful, and since then, our department has handled all the school's live streaming tasks. Two years later, our department decided to make our live streaming training base, involving every cohort in live streaming skill training, compiling experiences and methods from each practical training into teaching materials, and gradually forming a complete course. Currently, we lack enough teachers to fully implement live streaming courses across the program*".
>
> (Informant 4/Head of Photography Department and Dean/26 October 2023)

Incorporating live streaming into photography education: Advantages and challenges

All respondents agree that photography education faces significant challenges in adapting to these new media formats. The progress of technology leads to continuous updates in media dissemination forms, posing a huge challenge for school administrators and educators, often requiring them to introduce new teaching content before it matures. When discussing the introduction of live streaming-related courses in photography majors, six respondents view it positively. They believe that photography lays the foundation for dynamic video, and dynamic video imaging is inseparable from live streaming in terms of technology. The media format of live streaming is essentially real-time dynamic video, whether it's live broadcasting or video streaming, both fall under the category of image communication. Photography majors who aspire to engage in live streaming technology-related industries possess professional technical expertise and competitive advantages.

> "*Photography majors are well-suited for careers in live streaming technology. For example, live streaming technology mainly includes: pre-photography and cinematography, lighting and scenery, live broadcasting direction, video shooting and promotion, audio and video post-production, new media operation, and promotion. These positions require talents with backgrounds in photography and video production, which are precisely within the scope of photography major basic teaching content. Job seekers with a background in photography possess excellent*

live streaming technology and presentation skills, which are inherent advantages for them to enter the live streaming industry".

(Informant 1/Head of Photography Department and Dean/10th November 2023)

"*From the perspective of photography, live streaming still holds a significant advantage. Fundamentally, aspects such as lighting, framing, and equipment operation are fundamental knowledge in photography. The visual composition in live streaming predominantly involves still images with occasional camera movements, which aligns with the strengths of photography majors. Live streaming fixes the frame, allowing for a simple understanding of its advantage in terms of compositional aesthetics*".

(Informant 5/Head of Photography Department/18th October 2023)

Among the nine respondents, one mentioned that live streaming technology is just one aspect of the live streaming ecosystem, with more emphasis on teamwork and dynamic image generation in commercial live streaming. Positions related to live streaming not only require basic live streaming technology but also demand higher adaptability and coordination skills. Employers seek more diverse talents, such as those with knowledge in psychology, marketing, and business operations, necessitating curriculum reforms that integrate interdisciplinary and industry convergence, which is also a challenge currently faced by photography major talent cultivation.

"*Nowadays, companies require graduates to have diverse and composite skills. During recruitment, HR usually assumes that a photography major student can take both photos and videos. If a student can do both, then they can surely work in live streaming-related jobs. In the eyes of recruiters, any job related to the camera is similar. Therefore, photography majors need to acquire relevant skills. Hence, talent cultivation programs need to be more diversified to meet the employment needs of students*".

(Informant 2/Head of Photography Department and Dean/27th November 2023)

During the interviews, two respondents mentioned that the biggest challenge in incorporating live streaming-related courses into photography majors is the lack of teaching staff and the immaturity of related knowledge areas. Without reference models to learn from, they can only update talent cultivation programs cautiously, leading to a hesitant attitude towards whether to include live streaming-related teaching in the curriculum. However, one respondent from a university believed that live streaming media and short videos have a more negative impact on university photography education. According to the interviews, the current majors still mainly focus on cultivating talents related to static images, but the demand for static images in the job market has significantly decreased, leading to a noticeable decline in employment rates due to graduates' inability to meet employer demands.

"*Incorporating live streaming into photography education still faces many issues. Firstly, there is no mature curriculum system to reference; it's like feeling one's way in the dark. Secondly, it's challenging for schools to recruit teachers with relevant educational backgrounds because this field is still too new. Currently, photography*

majors can provide support for teaching live streaming technology, but to cultivate complete live streaming talents, cooperation with other majors may be necessary".

(Informant 6/University Photography Lecturer/23rd December 2023)

Participants in the survey believe that balancing teaching between emerging media and traditional principles is a constant challenge for educators. Although the development of emerging media technology is rapid, the basic theories and principles of traditional photography remain essential knowledge for students. Educators should encourage students to explore new technologies while retaining the teaching of traditional photography skills to ensure students have a solid foundation and comprehensive understanding of the industry. This conflict between old and new is particularly challenging for older teachers. In the environment of emerging media and technological iteration such as AI image technology and live streaming media, teachers often struggle to keep pace with the times, mainly guiding students to explore and learn new technologies and communication methods while also imparting fundamental theories and principles.

"*I think achieving 'balance' now is difficult, especially for older teachers. For example, one student documented his learning process from film photography to digital imaging in class through short videos, then operated multiple video platforms, gaining 2 million followers on his account. When it came to final assignments, the student submitted the short videos he shot on his video platform. It was only then that the teacher realized the seriousness of the situation, making it very difficult to evaluate the student. This incident drew attention and discussion among teachers*".

(Informant 7/Associate Professor of University Photography/4th January 2024)

Most respondents believe that "technical skills" are not the sole goal of university education, usually requiring comprehensive training in theoretical foundations, overall quality, and long-term career development. When formulating talent cultivation programs, schools tend to adopt multi-dimensional considerations. They mainly consider student employment needs, reference programs from other schools, professional conference discussions, social needs, school resources, and national standards. Regarding school resources, on the one hand, schools learn about and discuss the latest industry trends and demands through external learning and internal meetings. On the other hand, they consider their own teaching resources, such as faculty strength and laboratory resources. Additionally, student employment market demands and corporate hiring standards are crucial factors to ensure that the cultivation program meets both educational standards and market demands.

"*However, it's still a challenging task for photography majors to introduce live streaming-related courses since it's essentially starting from scratch, with no mature learning objects to reference. Comparing talent cultivation programs requires consideration from various aspects*".

(Informant 1/Head of Photography Department/10th November 2023)

Different schools have varying update cycles for talent cultivation programs in photography majors. Some schools choose to update their curriculum annually or biennially to align more closely with industry needs and rapid technological changes.

Others opt for updates every four years, allowing for significant changes after a complete undergraduate learning cycle. Considering numerous factors in talent cultivation programs and update frequency makes it challenging to be highly adaptable to the job market. This conclusion also explains the problem raised by scholar Gong Yuhui, who stated that the backwardness of talent cultivation programs and curriculum settings in Chinese universities' photography majors is the most significant issue currently. Photography major talents cannot meet the demands of today's job market, requiring reforms and adjustments in new cultivation goals, teaching methods, course content, practical forms, and industry alignment. The gap between school talent cultivation and social demands has long been a dilemma faced by Chinese university education.

> "*Although we know that the job market lacks relevant talents, talent cultivation in university education takes time, and educational reforms also need to meet many conditions. We cannot be as flexible as social training institutions*".
>
> (Informant 4/Head of Photography Department and Dean/26th October 2023)

Photograph education: Curriculum innovation and reform

The reform of photography education in China has never ceased. Looking back at the development of university photography majors, in the early stages, photography education mainly focused on teaching static two-dimensional images. During the film era, darkroom techniques were the key focus of photography education, with core courses including darkroom technology, film development and printing, photography optics, lighting techniques, photography basics, and composition skills. The main objective was to train photography students to master comprehensive skills such as shooting, developing, printing, and enlarging. As black and white film became obsolete and digital cameras became commonplace, photography was separated into two categories: still image photography and motion picture cinematography (Bate, 2020). Dynamic, real-time, authentic, and interactive photos gained popularity as network technology advanced, and static images constituted the cornerstone of image-related courses, while photography education progressively moved towards teaching dynamic images (Hu, 2022). The emergence of live streaming media, artificial intelligence imaging, AR, VR, and other emerging media forms presented the media industry with new challenges and opportunities, prompting active reforms and explorations in talent cultivation within relevant university majors.

In response to the evolving landscape of emerging media and the development of artificial intelligence, Chinese universities are actively reforming their photography majors to adapt to the ever-changing technological environment. For instance, the Communication University of China, based on the concept of "Big Photography," has fully utilized its professional advantages in "integration and interaction." It has established teaching teams for 3D photography, micro-aerial photography, and VR imaging, and has set up a direction for "virtual image production". Similarly, the Sichuan Academy of Fine Arts has designed courses in film and photo photography, silent film creation, feature film creation, comprehensive studio practice, film sound processing, screenwriting, film editing, audio-visual language, film art design, and film lighting design. It has also reached an agreement with Panda Film and Television Shooting Base to integrate student practice, internships, and employment closely with the film and television base (Han, 2022). Respondents provided suggestions for

reforming photography education: strengthening interdisciplinary and cross-disciplinary teaching, as single-skilled talents are insufficient to meet societal demands; closely cooperating with industry or social training institutions for live streaming-related courses to cultivate applied talents through industry-education integration projects; and maintaining close contact with the internet and technology industries to understand the latest technologies and industry changes and anticipate future talent demands.

> "*I believe that in the future, students need to be proficient in basic skills, but the industry will require more diverse composite talents. For example, understanding psychology, user psychology, data analysis, and statistics in mathematics, knowledge in marketing and promotion, internet platform operation, and traffic understanding. Comprehensive theoretical knowledge should also be enhanced, rather than solely providing technical learning*".
>
> (Informant 8/University Photography Professor/12th January 2024)

Respondents believe that the future development trend of photography majors is towards broader interdisciplinary integration and the development of composite skills. The consensus in the industry is that photography education must adapt to the evolving needs of the media industry, with increasing emphasis on dynamic, interactive content, and interdisciplinary capabilities. It is expected that photography education will not only embrace technological aspects but also integrate new media technologies.

> "*I think interdisciplinary integration should be the future development trend of photography majors. The communication methods in the future will certainly be diverse, and the talent demand in photography majors should be composite. I believe that by integrating art, drama, and film studies, providing a more diverse theoretical and knowledge framework, and leveraging the advantages of interdisciplinary, we can cultivate composite professional artistic talents required by society*".
>
> (Informant 5/Head of Photography Department/18th October 2023)

> "*We actively communicate and learn from live streaming training institutions while offering short video-related courses. At the same time, we collaborate closely with the school's live streaming industry incubation park. Interested students in pursuing careers related to live streaming can enter the live streaming industry incubation park for work practice through concentrated internships or project-based learning. After working in the live streaming park for a period, they can then lead newly arrived students in practice exercises in a 'learning by teaching' manner, forming a positive ecosystem of production, learning, and research*".
>
> (Informant 9/University Photography Lecturer/26th January 2024)

The research findings indicate that considerable changes and innovations are required for photography instruction in the age of new media. For starters, while the current project-based teaching paradigm and industry-education integration are effective, they require more support to keep up with fast evolving media technologies. Strengthening interdisciplinary and cross-disciplinary instruction is a critical step toward developing versatile skills. Schools may provide students with additional hands-on opportunities to improve their skills in dynamic video and live streaming technologies by working closely with industries and social training organizations.

Secondly, photography programs need to be more flexible in curriculum design and promptly updated to meet industry demands. There are differences among schools in the update cycles of talent training programs: some update their curriculum annually or biennially to closely align with industry demands and rapid technological changes, while others opt for a four-year cycle to allow for significant changes after a complete undergraduate study period. Regardless of the approach taken, schools need to adjust curriculum content in a timely manner based on market demands and technological developments to ensure that students graduate with the latest industry-relevant skills. Additionally, the research indicates that photography students face challenges in the job market, particularly in the traditional static image photography direction. With the rise of new media formats, the market demand for static image photography has declined, while the demand for dynamic video and live streaming technologies has significantly increased. Schools need to focus more on cultivating skills in new media technologies in their curriculum design to help students gain a competitive advantage in the job market. Finally, the majority of respondents underlined that, while emergent media technologies are rapidly evolving, students must still understand the fundamental theories and principles of classical photography. To ensure that students have a firm foundation and thorough grasp of the industry, educators should encourage them to experiment with new technology while still teaching conventional photographic techniques. Teachers face a problem in balancing the old with the new, but it is also critical for guaranteeing students' overall development. Lastly, the future development trend in photography education will be increasingly diverse, embracing not only the advancement of photography abilities but also the incorporation of new media technologies. Photography education may better satisfy market demands and create more professionally adept individuals by updating the curriculum on a regular basis and implementing innovative teaching methods.

Conclusion

This study examines the opportunities and problems facing photography education in the new media era by examining the photography programs at five applied universities in Sichuan Province. These educational establishments prioritize applied learning, seeking to develop flexible learners with pragmatic abilities and a creative mindset. Though one university currently concentrates mostly on traditional still photography, the schools offer a variety of programs at both the undergraduate and vocational levels, including dynamic cinematography and static image photography. The research found that the photography programs adopt a project-oriented, practical teaching model, emphasizing the integration of theory and practice. Through collaborative education and industry-education integration, the schools provide students with real-world work experiences. However, there is a divergence in enrollment and employment situations within the photography programs: the employment prospects for static image photography are unsatisfactory, leading to difficulties for students, while the outlook for dynamic cinematography, especially with the rise of short video industries, is highly optimistic. Furthermore, the development of short videos and live streaming poses new requirements for photography education. Although most schools have incorporated dynamic video skills into their curriculum, the teaching of live streaming skills is still in the exploratory stage. Some institutions are beginning to explore the field of live streaming through project practices or courses related to new media and plan to

incorporate live streaming skills into their curriculum. In conclusion, the research results demonstrate that photography education faces significant challenges in adapting to new media formats. Technological advancements continually reshape media communication, posing a major challenge for school administrators and educators alike. Some interviewees noted that commercial live streaming requires teamwork and dynamic image generation, demanding not only basic live streaming skills but also high-level adaptability, coordination abilities, and interdisciplinary knowledge.

Acknowledgement

This research is self-funded.

Conflict of interest

The authors confirm that there is no conflict of interest involve with any parties in this research study.

REFERENCES

[1] Amato, G., Behrmann, M., Bimbot, F., Caramiaux, B., Falchi, F., Garcia, A., Geurts, J., Gibert, J., Gravier, G., Holken, H. (2019): AI in the media and creative industries. – ArXiv Preprint arXiv:1905.04175v1 34p.
[2] Arisanty, M., Wiradharma, G., Fiani, I. (2020): Optimizing Social Media Platforms as Information Disemination Media. – Jurnal ASPIKOM 5(2): 266-279.
[3] Bate, D. (2020): Photography: the key concepts. – Routledge 320p.
[4] Chen, S., Zhou, D., Shi, Z. (2019): Photographic Praxis in China, 1930s-1980: A Conversation with Chen Shuxia, Shi Zhimin, and Zhou Dengyan about Shi Shaohua and the Friday Salon. – Trans Asia Photography 9(2): 24p.
[5] Cheng, X., He, H., Jiang, Y. (2023): Analysis of User Participatory Design and Gamification in Modern Media. – In International Conference on Human-Computer Interaction, Cham: Springer Nature Switzerland 15p.
[6] Deterding, N.M., Waters, M.C. (2021): Flexible coding of in-depth interviews: A twenty-first-century approach. – Sociological Methods & Research 50(2): 708-739.
[7] Guo, Q. (2022): When Kodak Came to China: Photography, Amateurs, and Visual Modernity, 1900-1937. – Heidelberger University 209p.
[8] Han, X. (2022): The importance of aesthetic ability in arts education: A case study of undergraduate students of universities in Chengdu city of Sichuan province China. – Heliyon 22p.
[9] Helmond, A., Van Der Vlist, F.N. (2019): Social media and platform historiography: Challenges and opportunities. – TMG-Journal for Media History 22(1): 6-34.
[10] Henning, M. (2023): Photography: the unfettered image. – Taylor & Francis 218p.
[11] Hu, H. (2022): Finding You Is My Courage: New Stories of Homecoming in Chinese Photography Since the 2000s. – Photography and Culture 15(3): 255-277.
[12] Kang, K., Lu, J., Guo, L., Li, W. (2021): The dynamic effect of interactivity on customer engagement behavior through tie strength: Evidence from live streaming commerce platforms. – International Journal of Information Management 56: 16p.
[13] Knott, E., Rao, A.H., Summers, K., Teeger, C. (2022): Interviews in the social sciences. – Nature Reviews Methods Primers 2(1): 15p.
[14] Larsen, J., Sandbye, M. (Eds.) (2020): Digital snaps: The new face of photography. – Routledge 288p.

[15] Li, M., Sharpley, R., Gammon, S. (2021): Towards an understanding of Chinese tourist photography: evidence from the UK. – In Current Issues in Asian Tourism: Volume II, Routledge 16p.
[16] Liebenberg, L. (2018): Thinking critically about photovoice: Achieving empowerment and social change. – International Journal of Qualitative Methods 17(1): 9p.
[17] Lopez-Mugica, J., Whyke, T.W. (2024): Revisiting a de-Humanized Shanghai: Speculative Realism in Zhou Ming's Contemporary Object-Oriented Materialist Documentary Photography. – Photography and Culture 22p.
[18] Nansen, B., Gould, H., Arnold, M., Gibbs, M. (2023): Media, mortality and necro-technologies: Eulogies for dead media. – New Media & Society 25(8): 2163-2182.
[19] Sanjeev, S. (2023): Digital Footprints in Mass Communication: Networking the Concepts. – Comminication & Journalism Research 12(1): 33-41.
[20] Shutsko, A. (2020): User-generated short video content in social media. A case study of TikTok. In Social Computing and Social Media. – Participation, User Experience, Consumer Experience, and Applications of Social Computing: 12th International Conference, SCSM 2020, Held as Part of the 22nd HCI International Conference, HCII 2020, Copenhagen, Denmark, July 19–24, 2020, Proceedings, Part II 22, Springer International Publishing 17p.
[21] Si, R. (2021): China livestreaming e-commerce industry insights. – Springer Singapore Pte. Limited. 121p.
[22] Wang, C.L. (2021): New frontiers and future directions in interactive marketing: inaugural Editorial. – Journal of Research in Interactive Marketing 15(1): 1-9.
[23] Woodcock, J., Johnson, M.R. (2021): Live streamers on Twitch. tv as social media influencers: Chances and challenges for strategic communication. – In Social Media Influencers in Strategic Communication, Routledge 14p.
[24] Xiaojun, Y. (2020): Study on The Communication Impact of Live Streaming E-Commerce Mode in China. – Uppsala Universitet 105p.
[25] Xue, X. (2023): Photography in the Late Qing Dynasty: A Comparative Study. – Journal of Education, Humanities and Social Sciences 8: 1-15.
[26] Zhang, Z. (2021): Infrastructuralization of Tik Tok: Transformation, power relationships, and platformization of video entertainment in China. – Media, Culture & Society 43(2): 219-236.
[27] Zheng, Y., Ni, W. (2020): Analysis on transformation and development of traditional enterprise based on internet celebrity economy. – Journal of Education and Praxis Research 1(6): 1-9.