Chinese university MOOCs: Usability, impact, and educational outcomes

QiYang Wang, Lu Zhou, ZiWei OuYang, Tubagus Achmad Darodjat, *Alan Robert White

* Corresponding author. E-mail address: alan.w@mail.rmutk.ac.th

Abstract

This study investigates the use and impact of Chinese university MOOCs (Massive Open Online Courses) on learners, employing a mixed-methods approach with both quantitative and qualitative data. A survey of 21 respondents from Nanning, Guangxi, China, including students, working professionals, and lifelong learners, examined their experiences, perceptions, and challenges related to Chinese MOOCs. Survey results indicated high engagement with MOOCs, with 16 out of 21 participants having used them. However, low course completion rates were noted, as more than half of respondents (14 out of 21) reported not finishing at least one course. Usability was generally positive, with the majority finding the platforms easy to navigate. While internet access and technology were not widespread barriers for participants, professional recognition of MOOCs and their usefulness for career advancement received mixed responses. The study suggests that to increase the impact of Chinese university MOOCs, challenges such as course completion rates, digital access, and standardized accreditation must be addressed.

Introduction

The rise of Massive Open Online Courses (MOOCs) in China has reshaped the nation's educational landscape. Platforms offering open access to high-quality courses and certifications have increased educational accessibility. MOOCs provide flexible learning opportunities, allowing students to engage with academic and professional content without traditional barriers of time, location, and cost. This paper examines the usability, impact, and educational outcomes of Chinese university MOOCs, focusing on their potential to improve learning experiences and professional growth, while addressing issues unique to the Chinese context, such as digital divides, resource disparities, and cultural considerations (Shen et al., 2016; Li, 2021; Tan & Tasir, 2024).

MOOCs in China have contributed to educational equity and innovation by offering numerous free, high-quality courses. These courses promote resource sharing and support lifelong learning (Dong, 2017; Bai et al., 2024). However, uneven access to technology and the need for improved platform management remain significant issues (Zhang et al., 2019). Resolving these issues will maximize the potential of MOOCs in China's educational system.

The rapid development of Massive Open Online Courses (MOOCs) in China has significantly expanded access to higher education, offering flexible, low-cost learning opportunities to a diverse population. Platforms such as iCourse, supported by leading

universities and the Ministry of Education, have democratized education by providing high-quality content to learners across different regions and backgrounds. However, despite their growing popularity and potential for impact, Chinese university MOOCs face persistent challenges that limit their effectiveness. These include low course completion rates, unequal access due to digital divides, variable course quality, and limited recognition of MOOC certifications by employers. While MOOCs are increasingly used for professional development and lifelong learning, questions remain about their usability, perceived value, and actual outcomes among different learner groups. There is a need for a deeper understanding of learners' experiences with Chinese MOOCs, the barriers they face, and the extent to which these platforms fulfill their educational and professional objectives.

This study is significant as it contributes to the growing body of knowledge on the effectiveness and limitations of MOOCs in the Chinese higher education context. With China's increasing emphasis on digital education and lifelong learning, understanding the real-world impact of MOOCs is essential for guiding future policy and practice. By exploring the usability, accessibility, and perceived value of Chinese university MOOCs from the perspective of learners, this research provides critical insights into the strengths and weaknesses of current MOOC platforms. The findings can inform educators, policymakers, and platform developers about areas that require improvement, such as learner engagement strategies, quality assurance mechanisms, and the alignment of MOOC content with labor market needs. Additionally, this study offers a localized perspective that complements global MOOC research by focusing on the unique challenges and opportunities present in the Chinese educational landscape.

The objectives of this research are as follows:

1. To investigate the usage patterns, satisfaction levels, and course completion rates of Chinese university MOOCs among learners from various backgrounds.

2. To identify the primary barriers to effective participation in MOOCs, including technological, motivational, and structural challenges.

3. To assess the perceived value and professional relevance of MOOC certifications in the context of career development and lifelong learning.

4. To explore learners' opinions on the usability, content quality, and support mechanisms offered by Chinese university MOOC platforms.

5. To provide recommendations for improving the design, accessibility, and recognition of MOOCs within China's higher education and professional training systems.

Literature Review

Chinese university MOOCs, such as iCourse, represent an innovative approach to expanding access to quality education. Developed by NetEase and Higher Education Press, and supported by the Ministry of Education, iCourse provides free access to MOOCs from top Chinese universities. This initiative enables individuals to pursue self-improvement and higher education without financial barriers, promoting educational equity and social progress.

MOOCs are designed to offer accessible and inclusive learning opportunities. These courses replicate traditional education through video lectures, discussions, assignments, and exams. Chinese MOOCs, including iCourse, are typically overseen by academic institutions, ensuring consistent quality across offerings. Instructors follow strict processes for course development, including content design, recording, editing, and providing support during the course. Learners who complete the courses earn electronic certifications, endorsed by

instructors, that demonstrate mastery of the subject and enhance their professional credentials.

The platform offers diverse courses from leading institutions, including China's "985" universities, allowing learners to engage with distinguished educators (Xiong et al., 2021). This access to high-quality educational content enhances learning opportunities for a wide range of individuals.

Course completion on the platform is validated with certifications endorsed by instructors, serving as a reflection of academic achievement (Zhang & Chen, 2022). These certifications provide learners with formal recognition of their accomplishments and contribute to their professional qualifications.

The learning experience is further enriched through a combination of short videos, assignments, discussions, and peer interactions, all of which allow learners to progress at their own pace and access real-time support (Liu, 2013). This flexible and interactive format supports various learning styles and fosters a more engaging educational experience.

The introduction of MOOCs like iCourse has transformed higher education in China, breaking down barriers to learning and promoting educational equity. However, some studies have noted the difficulties in achieving broader impact, such as ensuring equal access across different demographics and regions (Tian & Xia, 2017). Despite these challenges, iCourse exemplifies how technology can democratize education and empower individuals to pursue both academic and professional growth.

Chinese university MOOCs represent a transformative approach to education with a global reach. These courses enable individuals from all over the world to enroll and access learning materials regardless of their location, promoting lifelong learning. The courses cater to a broad spectrum of learners, from those seeking introductory courses to those pursuing advanced professional development programs. This flexibility is particularly valuable for working professionals looking to upskill or reskill.

Chinese MOOCs are a significant part of China's education digitization strategy, helping to bridge the global education gap. These platforms provide digital tools for lifelong learning, offering learners flexible access to educational resources.

Chinese university MOOCs, like those on the national platforms, allow learners to acquire professional skills through interactive educational models. This aligns with research emphasizing the potential of MOOCs to promote lifelong learning across various populations (Li, 2019).

Lifelong learning facilitated by MOOCs supports global workforce adaptability. Professionals around the world use these platforms to improve skills while balancing their careers. International research has documented the role of MOOCs in supporting lifelong learning (Bordoloi et al., 2020).

MOOCs promote inclusive, high-quality education, in line with UNESCO's Education 2030 framework. Their global reach makes them an important element in advancing lifelong learning opportunities (Zhang et al., 2019).

The incorporation of MOOC platforms into educational strategies promotes individualized and accessible learning, benefiting adult learners and professionals. This approach has been widely recognized for its positive impact on adult education (Zhang, 2019).

Chinese university MOOCs are mainly asynchronous, allowing learners to progress at their own pace. This flexibility enables students to manage their educational goals alongside personal and professional responsibilities. Research has emphasized the importance of this flexibility, particularly for adult learners and professionals with irregular schedules (Zhang & Chen, 2018).

Although many Chinese university MOOCs are free, some charge nominal fees for certificates or additional features, such as personalized tutoring. This model reduces financial barriers and democratizes access to high-quality educational resources. Studies show that MOOCs enhance inclusivity by providing scalable and affordable education to global learners (Zhang, 2019).

MOOCs are crucial for skill development, career transitions, and industry-specific learning. Certifications from these courses are often recognized in professional settings, making them valuable tools for career advancement. Research confirms that MOOCs help learners meet workforce demands by offering practical, relevant knowledge in an accessible online format (Small et al., 2019).

While Chinese university MOOCs have the potential to expand educational access, they face challenges such as low completion rates, digital accessibility issues, and concerns with quality assurance.

A major issue is the low completion rate, with many learners enrolling in courses but failing to finish due to a lack of motivation, time, or support. The absence of structured classroom environments and direct interactions with instructors and peers contributes to this disengagement. Research indicates that factors like perceived usefulness and learning behavior significantly affect MOOC performance, with self-discipline playing an important role (Wang et al., 2020).

Despite their accessibility, MOOCs face challenges due to the digital divide, which limits participation for learners in underserved or remote areas without reliable internet or modern devices. Research shows that socioeconomic factors such as GDP and regional disparities significantly affect MOOC accessibility, with urban learners benefiting more than those in rural areas (Sun et al., 2022). This divide creates obstacles to equitable knowledge distribution.

The lack of standardized accreditation and inconsistent course quality affects the value and recognition of MOOC certificates. While MOOCs offer flexible learning, the absence of strict quality controls and accreditation processes raises concerns about their utility in professional settings. Studies suggest that establishing standardized evaluation mechanisms could improve the reliability and acceptance of MOOCs in academic and professional contexts (Li, 2017).

Chinese university MOOCs provide accessible opportunities for individuals to acquire new skills, enabling career transitions or adaptation to emerging job requirements. These courses offer training in high-demand fields such as artificial intelligence, cybersecurity, and business analytics. Research indicates that MOOCs allow learners to quickly bridge skill gaps, aligning their capabilities with evolving industry needs (Guo et al., 2019). Furthermore, professional adaptability and job search success have been linked to the targeted skill development MOOCs provide (Pan et al., 2018).

Although employer recognition of MOOCs in China is increasing, challenges persist. Some employers value the skill improvement and lifelong learning potential MOOCs offer, particularly in technical and analytical fields. However, inconsistent course standardization, lack of authoritative certification, and concerns about practical applicability limit widespread acceptance (Li, 2017). Research emphasizes the need for third-party accreditation mechanisms and closer collaboration with industry to improve the credibility and relevance of MOOCs (Zhang & Deng, 2013).

Methodology

This study employed a mixed-methods approach to examine the knowledge and impact of Chinese university MOOCs on learners. Data was collected through both quantitative surveys understand participants' experiences with Chinese university MOOCs and their perceptions of the platform's effectiveness.

A total of 21 respondents from Nanning, Guangxi, China, including students, working professionals, and lifelong learners, participated in the questionnaire survey. These respondents came from different educational backgrounds to understand their different views on Chinese university MOOCs.

The primary data collection method involved a survey distributed online to participants. The survey consisted of both closed-ended and open-ended questions related to learners' use of Chinese university MOOCs, ease of use, course completion rates, satisfaction, and challenges faced. In addition, 21participants were interviewed in-depth to gain a deeper understanding of their motivations, experiences, and perceived outcomes of participating in Chinese university MOOCs.

Survey data were analyzed using descriptive statistics to measure trends in Chinese university MOOCs usage, completion rates, and learner satisfaction. The qualitative interview data were coded and analyzed thematically to identify common themes, such as barriers to completion, reasons for engagement, and the impact of Chinese university MOOCs on career development.

Results and Discussion

The research results indicate a relatively high level of engagement with Chinese MOOCs among the respondents, with more than half (16 out of 21) reporting that they had used these platforms. This suggests that MOOCs are a widely accessible and popular resource for many learners in the sample. However, a significant issue arises with course completion. More than half of the respondents (14 out of 21) reported not completing at least one MOOC course, which points to a common challenge faced by learners: the inability to finish courses despite initial engagement. This could be due to various factors, such as a lack of time, motivation, or course design elements that fail to maintain learner interest.

In terms of usability, the majority of respondents (12 out of 21) agreed that they found it easy to navigate online platforms for MOOCs. This suggests that the user experience of these platforms is generally positive, and technical barriers to entry are not a significant issue for most learners.

Regarding internet access and technology, the responses were more varied. Thirteen respondents (out of 21) were neutral on the matter, indicating that while some individuals may face challenges in accessing the necessary technology or internet resources, this is not a widespread problem among the sample. This finding suggests that for many learners, technical issues do not significantly hinder their ability to engage with MOOCs.

In terms of the professional utility of MOOCs, the majority of respondents (11 out of 21) agreed that MOOCs are a useful resource for gaining new skills. This reflects the recognition of MOOCs as valuable tools for professional development. However, opinions about the recognition of MOOCs in the job market were divided. The largest group of respondents (9 out of 21) remained neutral on whether MOOCs should be recognized by employers as legitimate qualifications, with 8 agreeing but none strongly agreeing or disagreeing. This indicates uncertainty or differing opinions regarding the legitimacy and recognition of MOOCs as qualifications by employers.

Finally, when asked about recommending MOOCs to others for professional development, the responses were also mixed. Most respondents (11 out of 21) were neutral, and 8 agreed. This suggests that while some respondents see value in MOOCs for career advancement, there is hesitance or uncertainty about fully endorsing them, possibly due to concerns over their recognition in professional settings.

Overall, the data shows a positive engagement with Chinese MOOCs, with some mixed opinions on their effectiveness, completion rates, and professional recognition. While MOOCs appear to be a valuable resource for skill development, issues like course completion rates, recognition in the job market, and varied opinions on their usefulness for career advancement may need to be addressed to improve their overall impact.

Chinese University MOOCs (Massive Open Online Courses) have transformed education in China by expanding access to high-quality courses from prestigious institutions. These platforms offer flexible, self-paced learning opportunities that support academic and professional development for learners from diverse backgrounds. By providing courses from renowned universities and instructors, MOOCs foster a culture of lifelong learning and skill development, contributing to increased educational inclusivity (Li, 2019).

However, Chinese University MOOCs face several challenges. Time constraints, lack of motivation, and limited interaction contribute to low course completion rates. Research suggests that improving learner engagement and providing more support can help address these issues (Wang et al., 2020). Unequal access to reliable internet and modern devices, especially in rural and underserved areas, hinders equitable participation in MOOCs (Li, 2019). Additionally, variability in course quality and the absence of standardized accreditation undermine the credibility of MOOC certifications among employers. Research indicates that implementing robust quality control measures and collaborating with employers could help improve the recognition of these courses (Zhang & Chen, 2018).

To enhance their impact, Chinese University MOOCs need to address these challenges by creating more engaging and interactive courses to reduce dropout rates. Expanding internet access and providing technological support can help bridge the digital divide. Furthermore, establishing quality assurance systems and standardized accreditation processes will improve the recognition and value of MOOC certifications (Li, 2017).

To enhance the effectiveness and impact of Chinese university MOOCs, several key improvements are recommended based on the findings of this study. First, course design must be improved to address low completion rates, which remain a significant challenge. MOOC platforms should integrate more interactive and engaging elements, such as real-time discussions, quizzes with instant feedback, gamification features, and live question and answer sessions with instructors. These tools can help maintain learner interest and foster a stronger sense of connection. Additionally, structured learning paths with clearly defined milestones and progress indicators would support learners in managing their time and staying motivated throughout the course duration.

Another critical area for improvement is learner support. Providing academic guidance through moderated discussion forums, peer mentoring, and access to teaching assistants can help reduce dropout rates and enhance the learning experience. Automated reminders and motivational messages can also serve to re-engage learners who may be at risk of disengagement. Personalizing the learning experience using adaptive technologies that tailor content to individual needs and performance levels can further increase retention and satisfaction.

Addressing the digital divide is essential for ensuring equitable access to MOOCs. While many urban learners benefit from robust technological infrastructure, those in rural and underserved areas still face barriers due to limited internet connectivity and access to modern devices. To bridge this gap, there should be greater investment in infrastructure and the

provision of affordable internet or learning devices for disadvantaged populations. Moreover, MOOC platforms should offer offline learning options, such as downloadable course materials and mobile-optimized interfaces, to accommodate learners in low-bandwidth environments.

Improving the quality and credibility of MOOCs also requires the implementation of standardized accreditation mechanisms. Establishing national or third-party quality assurance systems would help verify the academic and practical value of courses, ensuring that certifications carry weight in both academic and professional contexts. Regular evaluations of course content and instructional quality should also be conducted to maintain high standards and relevance in an evolving educational landscape.

To enhance the professional utility of MOOCs, stronger collaboration between course providers and industry stakeholders is necessary. Course content should be aligned with current job market demands, particularly in high-growth fields such as artificial intelligence, cybersecurity, and data analytics. These partnerships can also support the development of recognized credentials or micro-certifications that employers value. Awareness campaigns and employer engagement efforts can further improve the acceptance and integration of MOOC certifications into hiring and promotion decisions.

MOOC platforms should continue to focus on lifelong learning by offering flexible, career-focused programs that cater to adult learners and working professionals. Modular course structures, self-paced learning formats, and practical, skills-based content are essential to supporting ongoing professional development. Further research, including longitudinal studies and learning analytics, should be conducted to evaluate the long-term impact of MOOCs on learners' career progression and educational outcomes. These insights will inform future improvements and ensure that MOOCs remain a relevant and powerful tool for inclusive, high-quality education in China.

Conclusion and Suggestions

Chinese university MOOCs have made significant strides in enhancing access to education and providing flexible learning opportunities for a diverse range of learners. The study found that MOOCs have potential benefits for professional development, with a majority of respondents recognizing the value of these platforms in acquiring new skills. However, the low course completion rates and the varied perceptions about their professional value highlight areas for improvement. To maximize the potential of MOOCs, it is essential to focus on strategies that improve learner engagement, expand access to technology, and establish standardized accreditation processes. Such measures could further enhance the credibility of MOOCs, ensuring that they provide not only accessible learning opportunities but also tangible outcomes in the job market.

Future research on Chinese university MOOCs could further explore several key areas to enhance the understanding of their impact and effectiveness. First, longitudinal studies could track learners over an extended period to assess the long-term benefits of MOOCs in terms of career progression, skill retention, and academic achievement. This would provide deeper insights into the sustained value of MOOCs beyond initial course completion.

Additionally, future studies could focus on understanding the factors that influence course completion rates more thoroughly. Identifying specific barriers such as time management, motivation, or course design elements could guide the development of more engaging and supportive learning environments. Further research could also evaluate the effectiveness of various interventions aimed at increasing engagement and completion, such as personalized feedback, peer support networks, and adaptive learning technologies.

Another promising area for future research is the exploration of MOOCs' role in bridging the digital divide. Studies could examine how rural and underserved populations access and engage with MOOCs, and the effectiveness of initiatives aimed at improving technology access in these regions. Research on the intersection of MOOCs and social equity could identify strategies to ensure more equitable participation.

Finally, the question of employer recognition and the professional credibility of MOOC certifications warrants more attention. Investigating employer attitudes toward MOOC qualifications across different industries, as well as the potential for third-party accreditation, could help determine how MOOCs can be better integrated into the job market. Research on the development of standardized quality control measures and their influence on the credibility of MOOCs could also be valuable.

Exploring these areas in future research will not only improve the design and impact of MOOCs but also contribute to a more comprehensive understanding of how digital education can support lifelong learning and workforce development.

References

Bai, X., Xie, Z., Liu, J., Xue, Z., Ma, H., & Luo, C. (2024, April). Analysis of Massive Open Online Public Art Courses: Based on data from the Smart Education of China Higher Education. In *2024 6th International Conference on Computer Science and Technologies in Education (CSTE)* (pp. 283-287). IEEE.

Bordoloi, R., Das, P., & Das, K. (2020). Lifelong learning opportunities through MOOCs in India. *Asian Association of Open Universities Journal, 15*(1), 83-95.

Decheng, Z., & Jinxin, C. (2018). Curriculum analysis based on Chinese university MOOC platform. *Education Journal, 7*(3), 68-74.

Li, X., Chen, Y., & Gong, X. (2017). MOOCs in China: A review of literature, 2012–2016. In *New Ecology for Education—Communication X Learning: Selected Papers from the HKAECT-AECT 2017 Summer International Research Symposium* (pp. 21-32). Springer Singapore.

Li, Y. (2021, January). The impact of massive open online courses globalization on educational equity. In *2021 2nd International Conference on Education, Knowledge and Information Management (ICEKIM)* (pp. 248-251). IEEE.

Shen, J., Ye, M., Wang, Y., & Zhao, Y. (2016, April). Massive open online course (MOOC) in China: Status quo, opportunities, and challenges. In *2016 IEEE Global Engineering Education Conference (EDUCON)* (pp. 1106-1108). IEEE.

Small, J., Deacon, A., Walji, S., Jaffer, T., & Jawitz, J. (2019). Building capabilities: Using MOOCs to make transitions in work. *Open Praxis, 11*(4), 427-441.

Sun, M., Xiong, L., Li, L., Chen, Y., Tang, J., Hua, W., & Mao, Y. (2022). Digital divide in online education during the COVID-19 pandemic: A cosmetic course from the view of the regional socioeconomic distribution. *Frontiers in Public Health, 9*, 796210.

Tan, X., & Tasir, Z. (2024). A systematic review on massive open online courses in China from 2019 to 2023. *International Journal of Academic Research in Progressive Education and Development, 132*(2), 160-182.

Tian, J., & Xia, Z. (2017, April). MOOCs in China's universities: Practice, characteristics and trends. In *2017 3rd International Conference on Information Management (ICIM)* (pp. 378-382). IEEE.

Wang, Y., Dong, C., & Zhang, X. (2020). Improving MOOC learning performance in China: An analysis of factors from the TAM and TPB. *Computer Applications in Engineering Education, 28*(6), 1421-1433.

Yan, L. (2013). A report on MOOCs participation in China. *Tsinghua Journal of Education*.

Zhang, J., Sziegat, H., Perris, K., & Zhou, C. (2019). More than access: MOOCs and changes in Chinese higher education. *Learning, Media and Technology, 44*(2), 108-123.

Zhang, K., Bonk, C., Reeves, T., & Reynolds, T. (2019). MOOCs and open education in the Global South. *MOOCs and Open Education in the Global South*.

Zhang, Y. (2019). Research on the transformation and innovation development of adult education in newly-built undergraduate institutions in MOOC age.

Zhang, Z., & Chen, M. (2022). To MOOC or not to MOOC: An empirical study of Chinese students' MOOC learning. *Focus, 5*(8), 55-62.