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Managing Continuing Education in the Digital Age: A Case Study of Online Programs in China

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Abstract

The digital age has profoundly transformed continuing education, especially in China where online programs have expanded opportunities for adult learners. Continuing education – alternative higher education pathways for adults – has been part of China's system since the 1950s, but gained new prominence after the 1980s economic reforms. This article adopts a theoretical review and case study approach. We analyze policy documents, recent statistics, and scholarly studies from the last five years to examine how China manages continuing education in the digital era. Key sources include government guidelines, national platforms, and empirical research on online learning outcomes and learner experiences. We find that China's continuing education sector has undergone massive digital expansion. Online programs now enroll millions of adult learners, supported by government initiatives like the Smart Education of China platform launched in 2020. During the Corona Virus Disease pandemic, a nationwide "Classes Suspended but Learning Continues" campaign moved education online, accelerating digital adoption in continuing education. By 2021, online and open education students comprised roughly one-quarter of all higher education enrollments. Performance data indicate that well-managed online instruction can yield equal or even improved academic outcomes for learners. However, challenges such as quality assurance, digital divides, and varied student engagement remain. China's case demonstrates that with strong policy support and technological infrastructure, large-scale online continuing education can be achieved, expanding access to lifelong learning. Effective management in the digital age requires a shift from quantitative expansion to qualitative improvement. China is implementing reforms to standardize programs, ensure a blend of online/offline learning, and align continuing education with national development needs. This study offers insights for other countries on balancing innovation with oversight in continuing education.

Keywords: Continuing Education; Online Learning; Lifelong Learning; Digital Age; Adult Education; Educational Policy

1. Introduction

Continuing education (CE) refers to post-secondary learning opportunities for adults to upgrade skills or qualifications outside the traditional full-time degree pathway. In China, CE operates in parallel to the regular higher education system, encompassing part-time and online programs, adult education colleges, self-taught examinations, and open universities. These alternative pathways have historically played a crucial role in expanding educational access. In fact, correspondence and part-time programs have existed since at least the mid-20th century; the first Chinese correspondence courses began in the early 1900s and by 1953 Renmin University established one of the earliest accredited correspondence programs. Modern continuing education as a distinct sector took shape after China's Reform and Opening period. Following economic reforms in the late 1970s, there was intense demand for trained personnel that exceeded the capacity of regular universities. The government responded by reviving and expanding adult higher education in the 1980s. In 1979, China founded the Central Radio and Television University (CRTVU) – now the Open University of China (OUC) – to deliver distance learning at scale. This innovation, inspired by the UK Open University model, provided a "second chance" for millions who missed out on college during earlier tumultuous periods. Ever since, open and distance education (ODE) institutions like the OUC have become pillars of China's higher education massification. Research shows that the OUC alone has enrolled and graduated roughly one-tenth of all Chinese higher education students since 1979, underscoring the pivotal contribution of continuing education to upskilling China's workforce.

Entering the 21st century, the digital revolution opened new frontiers for continuing education. The proliferation of the internet, educational technology, and online learning platforms enabled CE programs to reach learners far beyond the confines of evening classrooms or broadcast TV courses. By the late 2010s, China began integrating online education into the mainstream of its continuing education system. Dozens of leading universities launched "network education" colleges to offer online degree programs for adult learners. The Ministry of Education (MOE) supported this with pilot initiatives and investments in ICT infrastructure. As a result, China built what officials describe as "the world's largest online education system". By 2024, over 97,000 Massive Open Online Courses (MOOCs) had been developed across more than 30 platforms, attracting some 483 million registered learners in China. A national online learning hub – the Smart Education of China platform – was rolled out in 2020, consolidating over 90,000 digital learning resources (from K-12 materials to 27,000 MOOCs for higher education) and serving as a "one-stop" portal for millions of users. This government-funded platform proved invaluable during the Corona Virus Disease pandemic, when it facilitated large-scale distance learning and trained over 10 million teachers in online instruction. The pandemic was a watershed moment globally and in China for continuing education. In early 2020, Corona Virus Disease forced the sudden closure of schools and universities nationwide. To ensure learning continued during lockdowns, China's MOE launched an unprecedented campaign to move classes online under the slogan "stop classes without stopping learning". Overnight, tens of millions of students – including adult learners in CE programs – transitioned to online learning from home. This

nationwide experiment dramatically accelerated the adoption of digital delivery for continuing education and familiarized both learners and instructors with online platforms. By necessity, even institutions that had been slower to embrace online education were pushed into rapid implementation of e-learning tools like live-streamed lectures, MOOCs, and interactive apps (e.g. Tencent Classroom, DingTalk, Rain Classroom). The result was arguably the largest remote learning trial in history. While challenging, this experience demonstrated the feasibility of online education at massive scale and spurred lasting changes in attitudes. Chinese educators and adults alike became more accepting of online modes of continuing study after this period. Notably, China was one of the first countries to resume in-person classes post-lockdown, but by then a "digital mindset" had taken root in continuing education management.

Today, managing continuing education in the digital age has become a strategic priority for China. The country's leadership views lifelong learning and skill development as critical to national goals in the era of the Fourth Industrial Revolution. Government policy strongly emphasizes making continuing education an integral part of human capital development to support economic transformation. The State Council and MOE have in recent years issued plans to reform and modernize continuing education, aiming to "align talent cultivation with national strategies and market demands". In March 2025, the MOE released new guidelines for managing continuing education programs and off-campus adult teaching sites, underscoring that universities must treat continuing education as a core function alongside regular education. Institutions are urged to leverage digital technology and focus CE offerings on advanced and urgent-need fields such as artificial intelligence, advanced manufacturing, big data, green energy, healthcare, and other emerging industries. This reflects China's recognition that the digital economy requires continuous upskilling of the existing workforce. Recent employment surveys show surging demand in high-tech sectors: in 2024, 45% of Chinese companies were seeking IT and internet talent, 29% needed big data professionals, and 27% had urgent hiring needs in AI-related roles. By expanding online continuing education in these cutting-edge areas (for example, the MOE in 2024 approved 914 new high-quality online vocational training courses on topics like intelligent robotics, new-energy vehicles, and drone technology), the education system is directly responding to labor market needs. In short, China's continuing education landscape is rapidly evolving, shaped by digitalization, policy support, and societal demand for lifelong learning. This Introduction has outlined the context and significance of the topic. Next, we describe our methodology for examining this case, followed by results detailing how online programs are implemented and what outcomes have been observed. We will then discuss the broader implications of managing continuing education in the digital age, using China's experience as a reference point, before offering our conclusions.

2. Methodology

This study employs a qualitative research methodology centered on document analysis and literature review. Given that the focus is a "theoretical overview" of continuing education management, we did not conduct primary surveys or interviews. Instead, we systematically

collected and examined secondary data from a range of relevant sources published in the last five years (2020–2025). Our sources include:

Policy and Regulatory Documents: Key official policies, plans, and guidelines on continuing education in China were reviewed to understand the government's management approach. This included the 2022 Implementation Plan for Continuing Education Reform (as described in government releases and analyses) and the 2025 MOE guidelines for continuing education management. We also drew on related laws (e.g. the updated Vocational Education Law 2022) and the national strategy for digital education mentioned in speeches at the 2023 World Digital Education Conference.

Statistical Data: We analyzed enrollment and participation statistics from recent years to gauge the scale and trends of online continuing education. Notably, we used Ministry of Education data cited in 2021 and 2022 reports for total enrollments. For example, MOE's statistics for 2021 (accessible via the Open University of China and Open Praxis study) provided the proportion of higher education students enrolled in ODE (open/distance education) programs. Additional data on numbers of courses, platforms, and users in online education were obtained from Ministry statements and media coverage.

Case Studies and Scholarly Literature: We reviewed academic studies examining various aspects of online continuing education in China. This included research on learning outcomes of online vs. offline instruction, surveys of learner experiences and satisfaction, analyses of digital inequality in education access, and historical reviews of the evolution of China's ODE system. To ensure recency, we emphasized studies from 2019 onward, such as Guo and Wan (2022) on the pandemic digital divide, Zhang et al (2025) on online continuing education for midwives, and Qi (2024) on student attitudes toward lifelong learning and CE.

Media Reports and International Analyses: Authoritative news articles and reports were used to capture up-to-date developments. For example, China Daily (2025) provided details on the latest MOE guidelines and their rationale. The UNESCO news release (2024) about the Smart Education Platform of China offered insight into national initiatives leveraging ICT for education equity. An analytical brief from the Australian Embassy in Beijing's education section (2024) was particularly useful for understanding the scope of the 2022 continuing education reforms and their implementation timeline. We also consulted international perspectives on lifelong learning (e.g. UNESCO 2024) to situate China's efforts in a global context.

Our approach was to triangulate information from these diverse sources to build a comprehensive picture. We treated China's online continuing education initiatives as a case study, identifying key themes such as expansion, quality assurance, learner support, and policy innovation. Given that much of the data is qualitative or descriptive, we used thematic analysis to synthesize findings. Where quantitative data were available (e.g. enrollment numbers, survey results, learning outcome metrics), we incorporated them to add empirical grounding.

It should be noted that many official documents were available only in Chinese; however, we relied on translations or summaries provided in English-language sources (e.g. Chinese state media, UNESCO reports, or academic articles) for those. All information cited in this article is

drawn from publicly available sources, which are duly referenced. By focusing on materials from the past five years, we aimed to capture the current state of continuing education in the digital age, recognizing that this is a fast-evolving field. The Methodology thus combines policy analysis with literature review in a case study framework. This allows us to not only describe what changes have occurred in China's continuing education, but also to critically discuss how these changes reflect broader trends and what challenges remain. In the next section, Results, we present the key findings from our analysis, structured around the major facets of managing online continuing education in China.

3. Results

3.1. Expansion of Online Continuing Education – Scale and Access

Continuing education in China has expanded dramatically through online programs in recent years. Data indicate that by 2021, roughly 12 million students were enrolled in various continuing higher education programs, accounting for about 25% of all higher education enrollments in the country. This proportion aligns with findings from Xiao et al. (2025), who noted that about one-fourth of Chinese higher education students in 2021 were in open and distance education, and ODE students made up around 30% of all graduates that year. A significant subset of these learners pursues online degree programs offered by both dedicated open universities and the continuing education colleges of conventional universities. In 2022, China's higher education system enrolled a total of 17.35 million people in adult diploma and undergraduate programs, of which approximately 2.8 million (16%) were in the "online education" stream of continuing education. These online programs are typically delivered via university-run web platforms and apps, enabling working adults to study remotely on a flexible schedule. The reach of online continuing education has also been extended through national platforms. The Smart Education of China platform, launched by the Ministry of Education's National Center for Educational Technology, is a prime example. By consolidating high-quality digital resources for learners of all ages, it has become "one of the largest collections of digital learning resources in the world," containing tens of thousands of courses for vocational and higher education. As of 2023, this platform had over 13 million registered users and was instrumental in providing access to students in remote and rural areas during the Corona Virus Disease disruptions. Moreover, China leads globally in the development of Massive Open Online Courses. By the end of 2024, the country had built 30+ MOOC platforms hosting over 97,000 MOOCs that attracted nearly 500 million accumulated learners. This explosion of online content has lowered barriers for adults seeking continuing education. Professionals across China can now tap into courses from top universities or training providers without needing to relocate or leave jobs. For instance, the Open University of China offers over 1,100 programs largely via online and blended modes, reaching learners in every province. Similarly, many conventional universities (over 1,700 of them) run continuing education divisions that increasingly use online delivery to extend their programs nationwide. The flexibility of online learning is especially valued by adult learners. A recent nationwide survey of 12,122 Chinese midwives underscores this – among those who had participated in online continuing education, the vast majority (94.8%) cited flexible scheduling as the top motivator for

choosing online courses. These learners appreciated being able to study at convenient times while juggling work and family commitments. The same survey found that more than half of the respondents had experienced blended learning (combining online with some face-to-face elements) and only about one-third relied on purely online formats. This suggests that while fully online programs are popular, many adults benefit from a mix of digital and in-person interaction, which can cater to different learning preferences. Overall, the rapid expansion of online continuing education has substantially improved access to lifelong learning in China. Groups that traditionally faced barriers – such as rural residents, full-time workers, and women with home duties – can now engage in higher education remotely. For example, mid-career professionals in distant provinces are able to enroll in specialized courses offered by elite institutions in Beijing or Shanghai via online platforms, an opportunity that hardly existed two decades ago. This democratization of access contributes to greater equity in education and workforce development. As one UNESCO report noted, digital innovation enables education and skills training "for individuals at every stage of life, irrespective of geographical location or socio-economic background," forming the foundation of a true learning society. China's massive investments in online continuing education align with this vision by bridging distance and resource gaps for learners.

3.2. Policy Reforms and Quality Assurance Measures

Alongside expansion, Chinese authorities have undertaken significant reforms to improve the management and quality of continuing education in the digital era. Recognizing issues that accumulated over years of rapid growth – such as inconsistent standards, unclear program positioning, and variable quality – the MOE in 2022 initiated a comprehensive reform of the continuing education sector. A central goal of the reform is to "transition from scale expansion to quality improvement". One major change has been the standardization and unification of what was previously a fragmented system. Historically, various terms were used for different adult education modes (e.g. "correspondence education," "night university," "network education"), and admission routes varied. Starting from 2023, the MOE has eliminated older terminology in favor of the uniform term "non-full-time education" for all continuing education programs. Admissions for undergraduate-level continuing education at regular universities are now unified through the national adult higher education entrance examination, rather than separate institutional exams. This makes entry more transparent and ensures that all learners meet basic requirements. Similarly, the format of diplomas is being standardized – whereas in the past some adult programs issued only a degree certificate without the usual graduation certificate, now continuing education graduates will receive standardized certificates, with an annotation of the study mode but equal legal validity. These steps address the long-held perception in China that continuing education credentials are a "second class" option compared to full-time degrees. By tightening standards and unifying credentials, the MOE aims to boost the credibility of online and adult degrees in the eyes of employers and society. Quality assurance has also been strengthened specifically for online programs. The 2022 reform agenda explicitly requires that online programs include some face-to-face learning components. According to official guidelines, in a given adult degree program, in-person instruction (including practical training sessions) should comprise at least

20% of total teaching hours. This marks the end of the experimental phase (1999–2021) during which universities could offer fully online degree programs. Going forward, most programs will adopt a blended model – for example, an online student might be required to attend a certain number of weekend lab sessions or an intensive on-campus residency to complement their online coursework. Consequently, purely online degrees (which were permitted during the pilot phase) may no longer be allowed under the new rules. Officials believe this blend will improve educational outcomes by providing direct practice and interaction, thus guarding against the pitfalls of isolated e-learning. In tandem, universities are being encouraged to design engaging, interactive online activities that maintain rigor. This includes using live webinars, moderated discussion forums, group project tools, and other active learning approaches rather than relying solely on self-paced videos. Many institutions are investing in training their faculty to teach online effectively and in upgrading learning management systems to support these features. The government's quality drive is further evident in the selection of high-quality courses for nationwide sharing. In late 2024, the MOE released a curated list of 914 excellent online vocational training courses, covering cutting-edge skills from AI and data science to intelligent manufacturing. By promoting the use of vetted, high-quality digital courseware, the MOE aims to raise the standard of content in continuing education programs across different regions. It also sets up evaluation and certification systems – for instance, new vocational skill standards and competency certificates are being developed for emerging job roles (like data labeling specialists in AI) that continuing education programs can adopt. Another aspect of reform is aligning continuing education offerings with national priorities. The 2025 guidelines explicitly urge universities to open new programs in advanced and strategic fields where skilled talent is in short supply – such as quantum technology, semiconductor engineering, AI, green low-carbon technologies, elderly care services, and so forth. Programs that lack relevance or have persistently low outcomes are being phased out or restructured. In 2022, an MOE plan listed problems like "unclear positioning" and "low-quality talent cultivation" in some continuing education providers and set targets to resolve these. Consequently, many universities have reviewed their adult education curricula to ensure they meet current labor market and societal needs. For example, a number of institutions have introduced new digital economy-related majors in their evening and online colleges, while trimming older majors with waning demand. The reform also addresses governance and oversight. By 2021, over 1,700 higher education institutions were involved in continuing education, including numerous private providers and satellite learning centers. The MOE is tightening supervision of these entities. Off-campus teaching sites run by universities now face stricter licensing requirements and regular inspections to curb any irregularities. The aim is to eliminate substandard "diploma mills" and ensure that all providers – whether public or private – adhere to the same high standards. In essence, China's management of continuing education is moving from a period of laissez-faire expansion into a new phase of regulated, quality-oriented development. This mirrors a broader trend in Chinese higher education reforms, often characterized as shifting focus "from quantity to quality" in the pursuit of excellence. While encouraging innovation (like online delivery and novel programs), authorities are simultaneously instituting guardrails to maintain academic credibility. It is a delicate balance: overly strict rules could stifle the flexibility that makes online continuing education attractive, yet too little

oversight risks undermining the legitimacy of the qualifications earned. The reforms of 2022–2025 represent an ongoing effort to strike that balance.

3.3. Learner Outcomes and Challenges in the Digital Modality

The rapid rise of online continuing education has prompted questions about its effectiveness compared to traditional formats. Evidence from China's experience suggests that well-implemented online programs can achieve strong learner outcomes, though certain challenges persist. A growing body of research has analyzed academic performance during periods of online instruction. One landmark study took advantage of the pandemic's "quasi-natural experiment" to compare student results in online vs. in-person semesters at a Chinese university. The study examined over 123,000 course records of undergraduates and found that in the fully online semester (spring 2020), students' overall academic records improved significantly relative to prior in-person semesters. Interestingly, grades not only rose during the online term, but this positive effect carried into the subsequent semester after returning to campus, especially for sophomore cohorts. The researchers suggested that the structured nature of online courses and the abundance of digital resources might have helped students learn more efficiently, with lower variance in performance due to the standardized delivery. These findings reinforce earlier observations that online education can be as effective as, or in some cases more effective than, face-to-face teaching – provided that students are engaged and self-motivated. Indeed, Chinese students' feedback during Corona Virus Disease was mixed but often positive: some reported greater initiative and focus when learning online at their own pace, while others missed the immediacy of classroom interaction. On the continuing education front, many adult learners appreciate the convenience of online study and credit it with enabling them to complete degrees that would otherwise be unfeasible. In a 2024 survey study of 300 university students (undergraduate and graduate) who engaged in continuing education activities (like online courses or certificate programs) outside their degree curricula, Jiang (2024) found broad endorsement of lifelong learning values. A majority of participants had taken online courses or industry certificate training in addition to their regular studies, and they overwhelmingly agreed that these continuing education experiences had benefited their academic performance, career prospects, and personal growth. High levels of self-directed learning and adaptability were reported, with students indicating they felt more prepared for the dynamic job market as a result of their continuing education engagement. These positive outcomes suggest that when learners are motivated – as adult learners often are – the online format can deliver substantial value. However, not all outcomes have been uniformly positive, and several challenges temper the success of online continuing education (Wu & Deng, 2022). One well-documented issue is the digital divide among learners. China's online learning boom during Corona Virus Disease revealed stark disparities in access to technology and internet connectivity. A study by Guo and Wan (2022) focusing on high school students (which has parallels in adult education) found that the move to online learning exacerbated existing inequities. Students from poorer households or rural areas had fewer devices, spottier broadband, and less conducive study environments, which negatively impacted their online learning outcomes. In continuing education, similar divides exist – working adults in major cities generally have good access to digital devices and networks, whereas those in remote or

impoverished regions may struggle. The Chinese acknowledges this challenge and has made efforts to improve digital infrastructure nationwide. Initiatives under the Education Digitalization Strategy aim to connect all regions to high-speed internet and provide subsidies or community learning centers for those without personal. The Smart Education platform's outreach to western China, where it provided 170,000 MOOCs to universities in underdeveloped regions, is one example of bridging resource gaps. Still, closing the digital divide is an ongoing process; as of 2021, about 40% of China's rural population remained offline, and globally more than half of young people lack internet access, meaning equitable access is a continuous concern. Another challenge lies in student engagement and pedagogical adaptation. Successful online learning requires a degree of self-discipline and new teaching strategies. Some research has noted that learners with poor time-management skills or low intrinsic motivation fare worse in online courses. In the context of continuing education, many adult students must balance coursework with full-time jobs and family responsibilities. The midwives survey revealed that the number one barrier to online continuing education was workplace pressures and lack of time, cited by 85.9% of respondents. Additionally, over 85% of those midwives expressed a desire for more interactive and engaging online learning methods (e.g. live discussions, hands-on virtual simulations) rather than the passive lecture-based approach that some online courses take. This feedback highlights the need for continuing education providers to invest in better instructional design for the digital format. If online programs are too static or isolating, adult learners may lose interest or find it hard to complete them in the face of competing obligations. The human element – such as prompt instructor feedback, peer interaction, and mentoring – remains crucial even in an online environment. Chinese universities are gradually adapting by training teachers in online pedagogies and using tools like AI tutors and discussion forums to increase interactivity. Nevertheless, maintaining learner engagement and ensuring practical skills are effectively taught online (especially in fields requiring hands-on practice) are areas requiring ongoing innovation. Quality assurance in outcomes is another focal challenge. The Chinese caution regarding fully online degrees is partly due to concerns about the rigor and credibility of some programs. There have been instances of subpar "diploma mills" or students not truly engaging yet obtaining degrees – problems that tarnish the reputation of continuing education. This has led to policies such as the reintroduction of some face-to-face components and stricter monitoring of exams (e.g. requiring important exams to be taken in person at proctored centers). A very illustrative policy decision came in early 2023, when the Chinese Service Center for Scholarly Exchange announced that foreign degrees earned purely online would no longer be recognized for certification. During Corona Virus Disease, Chinese students were temporarily allowed to enroll in overseas online programs while travel was restricted, but once borders reopened China swiftly reverted to its stance that legitimate foreign degrees must involve on-campus study. The rationale given was concern over quality and the proliferation of fraudulent or low-quality online offerings. While this policy targeted foreign programs, it reflects the broader skepticism toward wholly online education credentials. The implication for domestic continuing education is that standards must be kept high to earn societal trust. Encouragingly, many Chinese employers and industries are becoming more accepting of online and part-time degrees, especially as the prestige of some online programs (like those from Tsinghua or Beijing Normal University's online colleges) rises.

But lingering biases mean continuing education graduates sometimes have to prove their skills more. This is why the government's current reforms, which emphasize that CE graduates meet the same professional requirements and have comparable competencies, are so important for long-term outcomes. Lastly, it's important to acknowledge the special needs of older adult learners in continuing education. As China's population ages, more seniors and middle-aged adults are pursuing further education or re-training. However, older learners may not be as digitally fluent. Studies on senior employees, for instance, indicate that many face difficulties adapting to new technologies and software tools, given slower learning curves for digital skills. Zhang and Li (2025a, 2025b) note that many enterprises find their veteran workers need additional support and training to use digital platforms, since lack of prior exposure leaves a skills gap. This is relevant for continuing education, as programs targeting older adults (for career or personal enrichment) must account for potentially lower baseline tech skills. Ensuring user-friendly platforms, offering digital literacy support, and blending traditional learning methods can help include these groups. In sum, the Results indicate that China's online continuing education programs have significantly expanded access and can achieve positive learning outcomes. However, challenges including the digital divide, engagement and quality concerns, and varying learner needs require continuous management attention. The next section, Discussion, will delve deeper into what these findings mean – how China's strategies address these challenges and what lessons can be drawn for managing continuing education in the digital age.

4. Discussion

China's experience with managing continuing education in the digital era offers rich insights into both the opportunities and complexities of lifelong learning in the 21st century. In this Discussion, we interpret the results in a broader context and examine the implications for theory, policy, and practice. Several key themes emerge: the quest to balance scale with quality, the role of government in steering digital education, the importance of equity and inclusion, and the evolving perception of continuing education in society.

4.1. Balancing Mass Expansion and Quality Control

One of the most striking aspects of China's case is the sheer scale achieved in online continuing education. By building extensive digital infrastructure and opening the floodgates to adult learners, China has managed to massify higher education in a way that many countries struggle to do. The enrolment of over 12 million continuing education students – including millions online – by the early 2020s is a testament to this inclusivity. The advantages of such mass expansion are clear: it has allowed China to rapidly upskill its workforce and democratize access to knowledge. From a human capital perspective, continuing education has been a major contributor to China's educational attainment improvements over the past decades. However, massification without quality control can lead to credibility issues. Chinese policymakers have been keenly aware of the risk that if continuing education is seen as low-quality or a shortcut to a diploma, it would undermine the value of these programs. This concern is reflected in the 2022 reforms, which essentially tightened the reins after a period of laissez-faire growth. The

introduction of minimum face-to-face requirements and standardized exams, and the phasing out of sub-par programs, all signal an effort to enforce quality standards. In theoretical terms, this reflects the classic tension between access and excellence in higher education. China is attempting to find an optimal point where continuing education can be both large-scale and high-quality. The concept of an "optimal zone" balancing autonomy, innovation, and accountability (as discussed in literature on higher ed governance) is useful here. Too much emphasis on quantity (enrollments, graduation rates) can dilute academic rigor, whereas too strict a quality regime could reduce accessibility. China's recent measures suggest a belief that scale and quality are not mutually exclusive – with calibrated management, you can have both. The expectation is that by raising entry standards (through unified exams) and improving pedagogy, continuing education degrees will become truly equivalent to regular degrees in terms of graduate capabilities. The coming years will test this: for instance, will employers start valuing a part-time online master's from a top university on par with a full-time master's? If China succeeds, it could provide a model for how to massively expand lifelong learning opportunities without sacrificing educational outcomes.

4.2. The Strong Role of the State in Digital Continuing Education

Another notable feature of the Chinese case is the proactive and central role played by the government in guiding the digital transformation of continuing education. Unlike some countries where online education growth has been more market-driven or decentralized, in China the MOE and other agencies have been hands-on – developing national platforms, issuing detailed regulations, and even curating content. This top-down approach has benefits and drawbacks. On one hand, it enabled a swift and coordinated response during the pandemic (e.g. the nationwide online learning directive). It also allowed the pooling of resources to build infrastructure like the Smart Education platforms that individual institutions might not have created alone. The state's heavy investment (financial and political) in continuing education signals that lifelong learning is seen as a public good tied to national development. This aligns with China's general model of education governance, which emphasizes aligning education with state goals. The continuing education guidelines explicitly mention serving national strategies such as innovation-driven development and rural revitalization. In essence, continuing education is being leveraged as a policy tool to retrain the workforce for emerging industries (AI, green tech, etc.) and to promote social inclusion (e.g. offering programs for "people's livelihoods" like community services). However, a strong state role can also introduce rigidity. One risk is bureaucratic overregulation that could stifle the flexibility of continuing education. For example, requiring 20% face-to-face instruction, while understandable for quality reasons, could pose difficulties for students in remote areas or those with jobs that cannot accommodate travel. It essentially means fully remote degrees will disappear, which might disadvantage those far from any university center. Another example is the blanket non-recognition of foreign online degrees – while it protects against fraudulent programs, it also shuts out potentially high-quality opportunities and suggests a lingering institutional bias against online learning. The challenge for Chinese policymakers will be to remain adaptive and open to course corrections. If some regulations prove too limiting, adjustments may be needed (for instance, perhaps exceptions for certain fully online courses with proven quality). It's noteworthy that the government is also championing innovation within the

regulated framework – encouraging colleges to use AI, big data, and new pedagogies in teaching. The recently held World Digital Education Conference in Shanghai (2023) emphasized "Digital Education: Application, Sharing, and Innovation", highlighting China's commitment to integrating cutting-edge technology in education. This top-level endorsement of digital innovation could empower educators to experiment with new methods (like virtual reality training simulations for continuing education in technical fields) under the umbrella of government-supported initiatives. In summary, the state's guiding hand has so far been instrumental in scaling up continuing education quickly and systematically in China. It ensures alignment with national priorities and helps mobilize resources at scale. But maintaining a balance between regulation and innovation requires ongoing dialogue between policymakers, educators, employers, and learners. Other countries looking at China's model might consider how central coordination (for example, a national lifelong learning portal or standards framework) can accelerate progress, while also being mindful to preserve institutional autonomy and responsiveness.

4.3. Ensuring Equity and Inclusion in the Digital Learning Society

One of the promises of online continuing education is that it can make learning opportunities more inclusive – reaching people who previously had limited access to higher education. China's initiatives reflect this ethos; officials often speak of using digitalization to promote education equity between urban and rural areas. The concept of a Learning Society discussed at the World Digital Education Conference envisions "learning avenues accessible to all, throughout life", which is a powerful ideal. In practice, China has made notable strides on inclusion. Continuing education programs explicitly target adults who missed out on regular college (often due to economic or geographic constraints). The Open University system has provincial branches and collaborates with local learning centers to reach remote communities. During the pandemic, special efforts were made to provide devices and internet packages to students in impoverished areas to enable online learning. Furthermore, China's focus on vocational continuing education – evident in the push for online vocational skill courses – addresses inclusion by upskilling blue-collar workers and those in declining industries so they are not left behind in the new economy. However, as our results showed, the digital divide remains a significant challenge. The reality is that not everyone can equally benefit from online continuing education. Apart from connectivity issues, there are differences in digital literacy and self-directed learning skills. Less-educated or older learners may find it harder to navigate online platforms. This suggests that achieving true equity will require more than just providing access – it needs support structures. China could strengthen training for learners on how to learn online effectively (some universities now offer orientation modules on this). Additionally, blended models where local centers provide tutoring or discussion groups can help bridge the gap for those who struggle alone online. The government's emphasis on "learning cities" and community education centers is a promising approach. By developing local hubs equipped with technology and facilitators, they can ensure that even those without personal devices or conducive environments can join the digital learning wave. Another inclusion aspect is catering to diverse learning needs. For instance, continuing education is not only for career advancement – it also serves personal development, especially for retirees or older adults who pursue learning for enrichment. China has seen a boom in "社区大

学” (community education programs) for seniors (sometimes called “universities for the aged”). Many of these have gone online recently, offering courses from smartphone photography to health management. But designing senior-friendly online content is crucial – it might involve larger fonts, simpler interfaces, and very clear instructions. The fact that older employees often lack digital skills and need tailored training (as Zhang & Li noted) extends to older learners in general. A one-size-fits-all approach to online education could leave some groups out. Inclusivity therefore means customization: the platforms must adapt to different users. Encouragingly, the rise of AI in education might allow more personalized learning experiences. Adaptive learning systems could support weaker learners by providing extra practice or remediation, while allowing advanced learners to skip ahead. China’s investment in AI tutors and intelligent grading for MOOCs is already underway. If implemented ethically and thoughtfully, such technology could enhance equity by giving each learner the support they need. In conclusion on this point, China’s journey underscores that making continuing education truly inclusive in the digital age is a multifaceted endeavor. It requires infrastructure, yes, but also human support and pedagogical innovation. Other countries can learn from both China’s successes (e.g. national platforms, huge content libraries) and its ongoing struggles (digital divide, engagement of disadvantaged groups) when formulating their own lifelong learning strategies.

4.4. Changing Perceptions of Continuing Education and Lifelong Learning

Finally, it is worth discussing how the digital age may be transforming the very perception of continuing education in China. Traditionally, adult education in China was sometimes viewed as a “second chance” route for those who could not enter regular universities – essentially a fallback option. However, with the advent of the knowledge economy and the concept of lifelong learning gaining traction, this attitude is evolving. The government and society are increasingly recognizing that learning is not confined to one’s youth, and that mid-career or even post-retirement education is valuable and normal. The UNESCO (2024) report highlights how lifelong learning is being embedded into the societal fabric, with every individual encouraged to engage in continuous learning. China appears to be embracing this philosophy at policy levels. For example, the term continuing education) in Chinese policy discourse is often mentioned alongside building a learning society and improving national educational attainment. The fact that in 2021 the MOE’s Party Secretary openly wrote about the need to develop continuing education as part of China’s education power strategy indicates high-level support for destigmatizing adult learning (Yue & Xu, 2022). Moreover, Chinese employers, especially in forward-looking industries, are now more supportive of employees pursuing further studies. Many companies partner with universities to offer online professional master’s programs or specialized certifications for their staff. This reflects a shift: continuing education is no longer seen as merely remedial or hobbyist, but as essential for career progression and innovation. The positive attitudes captured in Jiang’s 2024 study – where young students already see continuing education as integral to personal development – bode well for the future. The next generation may view periodic upskilling or knowledge expansion as a normal part of working life, rather than a sign of initial educational deficiency. In fact, China may leapfrog some Western countries in this regard; the sheer pace of technological change in China (e.g. rapid digitization of industries) could normalize mid-career

education upgrades more quickly. That said, some stigma does linger. The existence of markings on certificates indicating "adult education" and anecdotes of employers preferring full-time degree holders illustrate that parity is not yet fully achieved. The government's approach is partly to eliminate those distinctions over time (through reforms making credentials more uniform) and partly to improve the quality such that outcomes speak for themselves. If employers see that graduates of, say, a part-time online Master of Computer Science can perform just as well on the job as those from a full-time program, their biases will naturally fade. Tracking and publicizing the success of continuing education alumni (for example, entrepreneurs or skilled technicians who trained via CE) could help change perceptions. Another important aspect is fostering a culture of lifelong learning. Culturally, China (influenced by Confucian values) has always esteemed education, but it traditionally focused on young learners and formal exams (like the Gaokao). The idea that one should continue learning throughout life is gaining policy support – for instance, community libraries, cultural centers, and online lecture series for citizens are being promoted. However, it requires a cultural shift for individuals to invest time in learning for learning's sake, especially after they have stable jobs. The increasing availability of convenient online formats certainly lowers the barrier. People can take courses on their smartphone during a commute or listen to open lectures on a smart TV at home. As these practices become commonplace, social attitudes will adjust. Interestingly, the pandemic might have accelerated this cultural shift; during lockdowns, many adults tried online courses either for self-improvement or simply out of interest, and some discovered an appetite for learning new things. In this light, China's strong push in continuing education can also be seen as part of a broader social development goal: to create an educated, skilled populace ready to adapt to changes. In the long run, that is as much a cultural endeavor as an educational one. Other countries observing China may take note of how government rhetoric and media narratives are used to elevate the status of lifelong learning (e.g. featuring stories of rural farmers learning e-commerce online or laid-off workers retraining for solar panel installation). Changing perceptions is a gradual process, but China's case shows that policy can influence it – for example, when the MOE emphasizes that non-full-time education is an "integral part" of talent cultivation, it sends a message that CE is not secondary, but rather a co-equal component of the education system.

In reflecting on the Chinese experience, one must acknowledge China's unique context: vast population, and rapid economic changes. Not all aspects are directly replicable elsewhere. However, the core challenges China faces – expanding access, maintaining quality, achieving equity, and fostering a learning culture – are universal in the digital age. The strategies deployed, from national online platforms to regulatory reforms to targeted support for disadvantaged learners, provide a valuable repertoire for policymakers worldwide. As one analysis pointed out, the Chinese case exemplifies how digital transformation and the concept of a learning society can reinforce each other. Technology is used to break down traditional barriers to learning, and in turn the demand for lifelong learning drives further technological and institutional innovation. The Chinese proverb live till old, learn till old is being reified through policy and practice, updated for the digital era. Going forward, continuous monitoring and research will be needed. For instance, longitudinal studies on career outcomes of online continuing education graduates would shed light on program effectiveness. International cooperation (China working with UNESCO and

others) can facilitate exchange of best practices, such as how to credential micro-courses or how to incentivize employers to support employee education. China's ongoing reforms are still unfolding – it will be instructive to see by, say, 2030, how the continuing education landscape has evolved after these interventions. Will the enrollment share rebound or stabilize? Will completion rates improve due to better support? Those answers will further inform the global discourse on lifelong learning.

5. Conclusion

The management of continuing education in the digital age, as exemplified by the case of online programs in China, demonstrates both transformative progress and the need for careful balancing of priorities. China has leveraged digital technology and strong policy direction to expand continuing educational access to tens of millions of adult learners, firmly embedding the principle of lifelong learning into its education system. The rapid expansion of online programs – through national platforms and university initiatives – has significantly lowered barriers for working adults to pursue further education, thus contributing to human capital development and personal empowerment on an unprecedented scale. Crucially, this expansion has been coupled with reforms aiming to ensure quality and relevance. Recent policies indicate a clear shift from unchecked growth to regulated improvement: standardizing credentials, enforcing minimum face-to-face learning in online programs, unifying admissions, and aligning curricula with strategic skills needs. These measures reflect a recognition that continuing education must deliver genuine value – in learning outcomes and societal trust – not just nominal diplomas. Early evidence, such as improved student performance during well-supported online semesters and positive learner attitudes towards continuing education's impact, suggests that with proper management, online continuing education can be highly effective. At the same time, the Chinese case underscores challenges that are likely common globally. Bridging the digital divide remains an ongoing battle – investment in infrastructure and inclusive design are imperative to ensure no learner is left behind in the online era. Fostering engagement and supporting learners' differing needs (from young professionals to seniors) requires pedagogical innovation and support services, not just technology. Quality assurance in online learning is a concern worldwide; China's cautious stance on fully online credentials highlights the importance of robust standards and perhaps offers a lesson that a prudent mix of online and offline elements can enhance credibility. The evolution of China's continuing education also illustrates a broader cultural shift towards embracing lifelong learning as a norm. The elevation of continuing education's status – through government rhetoric, employer recognition, and the sheer visibility of successful online learners – is gradually eroding the old biases. In the years ahead, one can expect continuing education (especially via digital means) to become even more integral to career paths and personal growth trajectories in China. Learners will increasingly move in and out of formal education throughout their lives as needed, blurring the line between "initial" education and "continuing" education.

In conclusion, China's case study offers a microcosm of the promises and complexities of managing continuing education in the digital age. The key takeaway is that scale and innovation must be accompanied by strong governance and support systems. When managed well, online

continuing education can be a powerful engine for individual advancement and socio-economic development – it embodies the idea that education is not a one-time provision but a lifelong endeavor. Other nations, while differing in context, can glean insights from China's initiatives: invest boldly in digital learning infrastructure, but also build frameworks to ensure quality and equity. As we collectively navigate the digital transformation of education, the ultimate goal should resonate with what China and UNESCO have articulated – to build inclusive, high-quality lifelong learning systems where learning is accessible to all, any time and anywhere. Achieving this will require concerted efforts across policy, technology, and pedagogy, but the progress in China's continuing education reform offers optimism that the vision of a true learning society is attainable in the digital era.

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