

# The Impact of Online Learning on Education Sustainability in China

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**Abstract:** The ubiquitous nature of the Internet and the accessibility of mobile devices have generated an increasing demand for online teaching and learning. With the advantages of accessibility, affordability, flexibility, and life-long learning, online learning is quickly sweeping across educational institutions at all levels around the world. This paper examines the benefits of online learning and its strengths in promoting inclusive quality education and lifelong learning opportunities for all. Concentrating on education quality and lifelong learning in China, this paper further discusses how to enhance education sustainability through online learning in the Chinese context.

**Keywords:** online learning; education sustainability; quality education; lifelong learning

## 1. Introduction

Education is fundamental to the economic and social development of every country, so it is necessary to find ways to make quality and lifelong education accessible and affordable to all with the help of the latest technology available. Online learning's core feature is to enable learners to learn anytime anywhere by using computer and it is generally associated with the terms flexible. With the popularization of Internet and mobile devices, online education has become a popular way of learning for learners all over the world. It has great advantages in social members' continuing education, which could alleviate the contradiction between the rapidly growing educational demand of social members and the relative insufficiency of traditional education supply (Iqbal & Ahmad, 2010). Additionally, many students choose to study online specifically for the flexibility that is offered, or the purpose of combining their studies with other responsibilities in their lives. For students who live in regional and rural areas, such flexibility can be even more important, taking into consideration of the additional difficulties they face in accessing campus facilities. In this regard, online learning has the potential to contribute positively towards access to lifelong education and quality education.

## 2. Online Learning

### 2.1 Concept of Online Learning

Online learning has roots in the tradition of distance education, which goes back at least 100 years to the early correspondence courses (Means, Toyama, Murphy, Bakia, & Jones, 2009).

According to Khan (1997), online learning is an innovative method to instruct students in remote areas, which involves all types of learning that is done using the computer or other information and communications technology (ICT) resources. Singh and Thurman (2019) defined online learning as "learning experiences in synchronous or asynchronous environments using different devices (e.g., mobile phones, laptops, etc.) with internet access". In synchronous learning environment, students attend live lectures, there are real-time interactions between teachers and learners, and also instant feedback. In contrast, learning content in asynchronous learning environment is not available in the form of live lectures or classes; it is available at different learning systems and forums. Instant feedback and immediate response are not possible under such an environment (Littlefield, 2018).

The term is often used as an overlapping concept with blended learning, e-learning, online courses, and online or distance education (Singh & Thurman 2019). These terms are considered to be synonymous and used interchangeably (Adarkwah, 2021, Dhawan 2020, Sun & Chen 2016). The reason is probably that most of the terms have in common the ability to use a computer connected to a network, that offers the possibility to learn from anywhere, anytime, in any rhythm, with any means (Cojocariu, Lazar, Nedeff, & Lazar, 2014). However, there seemed to be some agreement that there was a difference between the meaning of distance learning, e-learning, and online learning, since they have different learning environments with a variety of characteristics (Moore, Dickson-Deane, & Galyen, 2011). Maheshwari (2021) also think there is a difference in online learning and e-learning, though they are mostly used interchangeably.

In this study, we incline to adopt a rather inclusive concept of online learning, that is, online learning is an instructional environment supported by the internet and it can be fully online or blended with face-to-face interaction. Based on this perception, we will not make a special effort to distinguish online learning, e-learning and blended learning.

### 2.2 Benefits of Online Learning

As an informative, situating, constructive and communicative tool in the process of education, online learning has become increasingly popular because of its potential for providing more flexible access to content and instruction.

First of all, the online learning mode could eliminate both time and geographical barriers in education for learners as well as teachers who can log on at any time, from any place. The benefits of online learning may also include effective learning strategies, quality of the interaction, and preparation time taken versus collaborative learning and face-to-face supportive learning environments (Paulsen & McCormick, 2020). It may enhance the interaction between students and instructors, and among students at large. In addition, it allows more students, who do not want to attend face-to-face classes to participate in online education and it may allow instructors, students, and university administrators to collect data, feedback, and evaluation regarding their online experiences (Bell & Federman, 2013). Online learning is a tool that can makes the teaching-learning process more student-centered, more innovative, and even more flexible (Dhawan, 2020).

### 2.3 Online Learning and Education Sustainability

As a way to disseminate knowledge, promote learning and stimulate innovation, education is crucial to both individual and social development. For a long time, education has been deemed as an important impetus for economic and social development, and an effective way to reduce poverty and boost prosperity. In 2015, the United Nations adopted the 2030 Agenda for Sustainable Development, which included 17 Sustainable Development Goals (SDGs). Among them, SDG 4, “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”, which can be directly implemented through the development and improvement of online learning (Zhang, Shaikh, Yumashev, & Chłqd, 2020). Therefore, it is necessary to find ways to make quality education, accessible and affordable to all, using the latest technology available (Iqbal & Ahmad, 2010).

Fortunately, online learning has great potential to accomplish the objectives set for sustainable development (Portuguez Castro & Gomez Zermeno, 2020). It is arguable that online learning has the potential to promote quality, inclusive and lifelong education by offering more options (Caird & Roy, 2019), since it is a way of opening education to populations who had restricted access because of geography, status or physical handicap (Carr-Chellman, 2005). The expansion of online learning in the higher education sector is making university access more possible than ever before (Stone, 2017), encouraging students who may not otherwise have envisaged university as an option for them, to enroll as online students in a university program of study. In addition, the flexible learning environment provided by online learning has the potential to contribute positively towards equal access to higher education, particularly when students living in regional and rural areas face difficulties in accessing campus facilities (Stone, Freeman, Dymont, Muir, & Milthorpe, 2019).

## 3. Education Sustainability in China

As the largest developing country in the world, China has made great achievements in the development of education. In the past few decades, education development has correspondingly made significant contributions to alleviating poverty and promoting prosperity. However, in education there are still some aspects with room for improvement.

### 3.1 Quality Education

As education is crucial to human development and is considered as a human right, quality education is of vital importance and should be guaranteed.

Quality education refers to the comprehensive education to promote the all-round development of people, which has always been the focus of China’s educational reform. But for example, Dello-Iacovo (2009) pointed out a range of problems, such as paying too much attention to rote learning and examinations, excessive homework, teacher-centered learning, neglecting low-achieved students and failing to cultivate creativity. Guo, Huang and Zhang (2019) argued that these criticisms mainly stem from the highly selective National College Entrance Examination. The number of students who can be enrolled to universities is limited, so the competition to enter colleges and universities is quite fierce. The intense competition and heavy learning tasks not only seriously affect students’ learning enthusiasm and interest, but also greatly affect their physical health. Besides, under the pressure of exams and success, many primary and middle school students work hard and have little spare time to enjoy their childhood.

At the higher education level, more emphasis has been placed on developing students’ generic skills and facilitating students’ surface approach to learning with a lack of emphasis on students’ independence and autonomy (Yin, Lu, & Wang, 2014). This kind of education can help students master basic knowledge and theories, but it often limits the development of students’ personal interest, creativity and other personal skills.

### 3.2 Lifelong Learning

Lifelong learning refers to the ability to continuously acquire, fine-tune, and transfer knowledge and skills throughout their lifespan (Parisi, Kemker, Part, Kanan, & Wernter, 2019). It has been identified as the key to achieving sustainable development and quality education in the 2030 Agenda for Sustainable Development (Webb, Holford, Hodge, Milana, & Waller, 2019), so ensuring lifelong learning is another important issue to address in order to maintain sustainable development in China.

As the most populous country in the world, with the rapid development of economy and society, China has made great achievements in building a lifelong learning system and a learning society in the past few decades (Li, 2013). In 2019, the Chinese Ministry of Education officially issued an educational development plan, namely, China’s education modernization 2035 (MOE of China, 2019). This plan placed emphasis on eight concepts including ethics as the priority of education, well-round development, people-orientation, lifelong learning, personalized teaching, integration of knowledge and practice, integrated development, co-construction and sharing. One of the main development goals of China’s education modernization is to establish a modern education system that provides lifelong learning for al (Zhu, 2019). These policies highlighted the general stages and components of education, consisting of continuing education, vocational education, national qualifications, academic achievement certification and so on, but neglected the individual features that generate and sustain learning (Chen & Liu, 2019). Apart from the comprehensive national-level strategy, a positive environment with adequate learning materials and social conditions should also be created to promote lifelong learning at the personal level.

## 4. Promoting Education Sustainability via Online Learning

It has been argued that to ensure a long-term sustainable development in China, a healthy and well-educated labor force is a key asset (Zhang & Kanbur, 2009). To have a well-educated labor force, enhancing quality education and lifelong education is crucial and requires practical measures from various dimensions. In general, we can encourage more balanced distribution of educational resources and enhance

the accessibility of quality education.

Apart from the countermeasures at the top-level, as a more concrete, convenient and cost-effective way of learning, online learning is obviously a good choice to help to implement lifelong and quality education. According to Zhang, Shaikh, Yumashev and Chład (2020), education for sustainable development is a concept that includes various element, such as, providing students the opportunity to acquire the skills, ability to act, perceptions and knowledge necessary to ensure sustainable development, lifelong learning at all public levels (family, school, workplace, etc.), and enhancing the harmonious development of personality. All of these components can be associated with online learning programs.

In view of the specific Chinese educational context, to promote online learning and therefore to enhance educational sustainability, the following measures may be helpful. On the one hand, technological and institutional infrastructure should be fully invested to remove the technology and data-related constraints. For example, constructing reliable and speedy ICT infrastructure in rural and remote areas, establishing a sound network education resource sharing platform, and providing more high-quality open online courses for learners to choose from. Besides, emphasis should be placed on the penetration of mobile technology and the development of mobile learning applications. Mobile devices and mobile learning apps have various advantages like portability, instant power-on, on-demand, and the ability to accommodate multimodal learning styles and preferences (Kang & Lin, 2019), which could certainly benefit lifelong learners.

On the other hand, digital literacy is another issue that needs to be addressed to promote online learning. Digital literacy is defined as the ability and awareness to use emerging digital technologies to perform tasks in a digital learning environment (Perera, Gardner, & Peiris, 2016). Being digitally literate today is not limited to having digital skills that just include understanding the hardware and knowing how to use the software. It consists of a set of abilities to adapt to the knowledge society which include knowledge, skills, behaviors of effective use digital technology and smart devices such as smartphones, tablets, laptops and personal computers (Anthonysamy, Koo, & Hew, 2020). In this case, teachers, students and especially the elders should be given adequate training and retraining of information technology application to provide them with practical and functional knowledge of the mobile devices, internet and associated areas of ICT. In this way, they could use digital tools to reproduce and create something new, use online materials to construct new knowledge, and evaluate the validity of Internet information, which could accordingly enhance the effectiveness of online learning.

## 5. Conclusion

Education for sustainable development is currently seen as a new direction of education for all people and for a lifetime, which can be facilitated by online learning, as it has the potential to promote quality, inclusive and lifelong education by opening education to populations who had restricted access. The present analysis of quality education and lifelong education can provide insights for policy making and research on the sustainable development of education in China.

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