A Decade of MOOC in Asian Higher Education

Paulina Pannen[1*] and Rahayu Dwi Riyanti[2]

[1] School of Education and Teacher Training, Universitas Terbuka, Indonesia
paulina@ecampus.ut.ac.id
[2] Indonesia Cyber Education Institute, Universitas Terbuka, Indonesia
rahayudr@ecampus.ut.ac.id
*Corresponding Author

https://doi.org/10.24191/ajue.v21i1.30

Received: 13 November 2024
Accepted: 25 May 2025
Date Published Online: 30 June 2025
Published: 30 June 2025

Abstract: Massive Open Online Courses (MOOCs) have transformed higher education in Asia over the past decade. The Philippines' uLearn Project and Japan's JMOOC initiated the movement in 2013, followed by Chinese universities and Indonesia's PDITT in 2014. In 2016, the Republic of Korea's K-MOOC, Malaysia's MOOC program, and Thailand's Thai MOOC further expanded access to online learning. By utilizing digital technologies, MOOCs enhance affordability, accessibility, and student mobility while fostering lifelong learning. Asian nations have adopted MOOCs through various approaches. China employs a government-led strategy, Indonesia integrates collaborative efforts, while Thailand and the Republic of Korea focus on comprehensive platforms. This study examines MOOC implementation in China, Indonesia, Japan, the Republic of Korea, Malaysia, the Philippines, and Thailand, emphasizing adoption objectives, implementation methods, technological advancements, and educational impacts. The findings indicate rapid development and contextual relevance across the seven countries. These initiatives have significantly expanded access to quality higher education, reinforced lifelong learning, and contributed to reducing educational disparities, thereby promoting social mobility. Key success factors include recognition, quality assurance, and institutional collaboration. Nevertheless, persistent challenges remain, including digital literacy gaps, infrastructure limitations, and the need to enhance the quality of online learning experiences. To ensure sustainable progress, engagement from policymakers, educators, and other stakeholders is essential. Strengthening MOOC development will amplify their contribution to national education strategies, promoting inclusive and equitable learning opportunities. Addressing existing challenges will further enhance their effectiveness and long-term impact.

Keywords: Asia, Higher Education, MOOC

1. Introduction

Massive Open Online Courses (MOOCs) have significantly transformed higher education by providing flexible and accessible quality education and cost-effective learning opportunities, regardless of geographical or economic barriers (Moore & Diehl, 2018). They enable large-scale enrolment and support diverse learners, including traditional students, adult learners, and lifelong learners. The adaptability of MOOCs has facilitated the development of micro-credential programs, enhancing both relevance and educational quality. Universities are increasingly integrating MOOCs into their teaching processes, improving educational quality and extending their reach to diverse learners, including traditional students, adult learners, and lifelong learners.

MOOCs originated in 2008 with the Connective Knowledge course by Stephen Downes and George Siemens (Siemens, 2012). They became popular in 2012 when over 160,000 students from 190

countries enrolled in the course, prompting the expansion of platforms such as Coursera, EdX, Futurelearn, iVersity, and Open2Study. Sabjan et al. (2020) illustrate the growing involvement of 110 million students, more than 900 universities and 13.5 thousand courses in December 2019 as reported in the Class Central MOOC Report. The number of participations indicates the MOOC implementation provides quality and best practices in meeting students' intentions and needs. Initially dominated by institutions in developed regions—Australia, Europe, North America, and the UK—MOOCs are characterized by large-scale participation, digital integration, flexibility, and self-directed learning.

Asian and Southeast Asian countries began embracing MOOCs in 2013. Initiatives included the Philippines' uLearn Project, Japan's JMOOC, Chinese universities on Coursera, and Indonesia's PDITT in 2014, followed by the Republic of Korea's K-MOOC, Malaysia's MOOC programs, and Thailand's Thai MOOC in 2016. These efforts aim to expand equitable access to higher education, promote lifelong learning, and support job mobility. Adoption strategies vary, from government-led approaches in China to collaborative frameworks in Indonesia and comprehensive platforms in Thailand and the Republic of Korea. By integrating MOOCs into national education systems, these countries enhance higher education accessibility while addressing challenges such as digital literacy, infrastructure limitations, and quality assurance.

Table 1

Notable Development of MOOCs in 7 Asian Countries

Year	Country	Note
2013	Philippines	The uLearn Project introduced the country's first MOOCs.
2013	Japan	The Japan Massive Open Online Course Promotion Council (JMOOC) was established.
2013	China	Reputable Chinese universities began offering courses on global MOOC platforms like Coursera and TED in 2013, significantly contributing to MOOC growth.
2014	Indonesia	Indonesia launched its inaugural MOOCs in 2014 through PDITT (Pembelajaran Daring Indonesia Terbuka Terpadu) as a notable initiative.
2014	Republic of Korea	The Ministry of Education explored Korean-style MOOCs, which led to the introduction of the Korean Massive Open Online Course (K-MOOC) in 2014.
2014	Malaysia	The Ministry of Education initiated MOOC projects in 2014, emphasizing uniform criteria and funding.
2016	Malaysia	Thai MOOC, founded by Thailand Cyber University, became the National Digital Learning Platform (NLDP) in 2016.

In 2013, Asian participants accounted for 21.4% of total users on various MOOC platforms (Chen, 2013). The MOOC market in Asia is projected to grow from USD 1.92 billion in 2021 to USD 24.82 billion by 2029, with a 37.7% annual growth rate (Data Bridge, 2024). Since 2013, China has launched over 76,800 MOOC courses, attracting 454 million registered users. Similarly, Malaysia offers 884 courses, enrolling 559,751 students locally and internationally. As of 2021, the Republic of Korea's KMOOC has provided 1,358 courses to over 23 million users, with annual enrolments exceeding 2 million. The platform's usage increased by 57% following the COVID-19 pandemic. ThaiMOOC, with more than 500 courses, serves 1.4 million users, while Indonesia has approximately 1 million registered MOOC learners.

Strategic partnerships play a vital role in strengthening the MOOC ecosystem. Organizations such as ASEAN and SEAMOLEC foster collaboration, with initiatives like SEA MOOCs Network (http://mooc.seamolec.org/) and the AAOU's Asian Learning Portal (https://moocs.aaou.org) supporting capacity building and content hosting. The rapid expansion of MOOCs during the pandemic confirmed their potential as alternatives to traditional education, enhancing access and professional development opportunities. In the post-pandemic era, MOOCs report a 33% completion rate (Despujol

et al., 2022). Integrating MOOCs with Open Educational Resources (OERs) has also been recognized to improve accessibility and cost efficiency. Developing credit bank systems and leveraging blockchain technology for e-credentialing will further support mutual recognition frameworks. Regional collaboration, driven by UNESCO, remains essential for advancing equity, quality, and sustainability in higher education.

2. Methods

This study employs qualitative analysis of documents consisting of 7 (seven) country reports from China, Japan, Indonesia, the Republic of Korea, Malaysia, the Philippines, and Thailand. The country reports were written in 2023, and analyses were conducted in March-August 2024. The analysis was conducted involving two reviewers. The framework to analyse the papers consists of four questions:

1. What is/are the objective of MOOC adoption in Asian higher education?
2. What is/are the approaches employed in MOOC implementation?
3. How have MOOCs in Asian higher education advanced?
4. What are the notable impacts of MOOCs in Asian higher education?

3. Findings and Discussion

3.1 Objectives of MOOC Adoption

There are different reasons for MOOCs being offered in the seven Asian countries as follows:

1. **Opening Access and Providing Equity in Higher Education**: It addresses barriers like limited-quality institutions, high tuition fees, and geographical constraints by offering affordable, flexible online courses. This democratizes education, bridging gaps between urban and rural areas and helping underprivileged students improve their socioeconomic status.
2. **Promoting Educational Fairness and Quality**: It provides standardized, high quality educational materials to a broad audience, ensuring consistent education regardless of location or socio-economic background. It allows students from various regions to benefit from the same high standards.
3. **Enhancing Competitiveness and Global Alignment of Higher Education Systems**: It helps higher education systems stay competitive and aligned with international standards by offering globally recognized courses. It enhances students' employability and career prospects and promotes collaboration and innovation among institutions.
4. **Supporting Lifelong Learning and Skill Development**: It caters to lifelong learning and continuous skill development by offering flexible, accessible courses for learners at different career stages. This helps individuals stay competitive in the job market and fosters continuous personal and professional growth, developing an adaptable workforce.

Although all four objectives may be applied to the seven countries in review, each strongly emphasizes a certain objective based on its situation and conditions.

China

As early as 2003, China's Ministry of Education (MOE) initiated the National High Quality Courses Plan, followed by initiatives such as the Global Open Courses (GOC) in 2011, laying the groundwork for China's MOOC Movement. The objectives of the MOOC Movement in China are as follows:

1. promote education equity across diverse regions and institutions through the sharing of high-quality educational resources
2. facilitate credit transfer and blended learning through online courses, further enhancing the overall quality of education

3. address the surging demand for scalable, open learning from lifelong learners at a cost-effective scale to establish a learning society and a nation committed to lifelong learning for all
4. promote international course exchange and cooperation through the World MOOC and Online Education Alliance.

MOOC Movement in China is based on the need for high-quality learning resources to enhance the standard of education and cater to lifelong learning for all as part of China's education reform.

Indonesia

Since 2014, Indonesia has advanced its MOOC initiatives through the PDITT (Pembelajaran Daring Indonesia Terbuka dan Terpadu), an integrated platform designed to streamline and consolidate faculty efforts in online course development. In 2020, under the Merdeka Belajar policy, MOOCs emerged as a strategic tool for reskilling and upskilling effort, equipping students with industry-relevant competencies to enhance employability and professionalism. Unlike traditional academic programs, Indonesian MOOCs are structured in an unbundled format, focusing on specialized skill acquisition rather than formal degree attainment. These courses facilitate accelerated learning, enabling students to develop specific expertise while ensuring the broader dissemination of high-quality educational content across higher education institutions nationwide.

Furthermore, Indonesian MOOCs contribute to the overall enhancement of higher education quality by providing instant access to global advancements in Industry 4.0, fostering innovation, and expanding educational opportunities. By integrating MOOCs into the national education framework, Indonesia strengthens lifelong learning pathways, promotes equitable access to higher education, and supports workforce development aligned with evolving market demands.

Japan

Japan MOOC or JMOOC was established in 2013 to strongly promote the realization of "MOOCs that expand the individual's value through learning into shared value for society" through collaboration between academia and industry. JMOOC promotes the standardization and deepening of knowledge levels in various fields, supports individuals in their pursuit of learning, and connects individuals' knowledge and skills to social recognition. Two specific characteristics of JMOOC are: 1) It primarily offers MOOCs in Japanese, based on lectures from Japanese universities. By the end of March 2023, it has 616 certified courses, 1,387,575 course registrants, and 1,626,538 learners. Further, 2) Its business operations rely on collaboration among various universities, companies, and organizations. i.e., four special members, 67 regular members, 15 supporting members, and nine individual members.

Republic of Korea

The Korean Massive Open Online Course (K-MOOC) was introduced by the Ministry of Education in 2014. This initiative was developed to address two key challenges in higher and lifelong education in the Republic of Korea (Ministry of Education, 2015). These challenges include the global shift in the higher education paradigm due to MOOCs and the increasing demand for lifelong learning, driven by changes in the job market, society, and culture—primarily caused by advancements in digital technologies and demographic shifts. Under the Ministry of Education's vision of "innovating university education through opening the higher education system," K-MOOC established four key policy objectives: 1) adopting a proactive approach to the global expansion of MOOCs, 2) offering high-quality MOOCs to foster innovations in teaching and learning within higher education institutions, 3) achieving substantial equity in higher education, and 4) laying the groundwork for lifelong learning (MOE, 2015; 2016). Since 2018, K-MOOC's policy focus has shifted towards providing educational opportunities for individual growth through lifelong learning for all citizens. Consequently, K-MOOC enhances the job competencies of adults and workers in response to the fourth industrial revolution and promotes innovative teaching and learning methods (MOE, 2021, 2022, 2023).

Malaysia

The Ministry of Higher Education Malaysia launched MOOC projects (in 2014), formulates unified standards, and provides start-up funding for MOOC operations. Starting in 2016, MOOCs in Malaysia have been institutionally led. As a result, the funding sources and infrastructure are managed and governed independently by HEIs. MOOC is seen to offer flexible online courses in the form of micro-credentials for new knowledge and skills accessible to all Malaysians. Furthermore, Malaysia aims to make teaching and learning of a global quality. As such, it is developed based on global standards and regulated by the Government for quality assurance, allowing global recognition. Malaysia also allows MOOCs to be a means of lifelong learning for the public. The enculturation of MOOCs among HEIs in Malaysia is promoted through various strategies such as providing monetary incentives, promotion, and performance evaluation. As such, it has been recognized and integrated into the existing higher education system in Malaysia.

The Philippines

The University of the Philippines Open University initiated the MOOC movement in the Philippines by introducing the uLearn Project in 2011, and offered its first MOOC in 2013 (Romualdo, 2017). It aims at:

1. articulating the Public Service Function of a fully online open university, which characterizes UPOU
2. responding to address the country's unemployment problem
3. providing training opportunities for individuals supporting advocacies of major concern, including lifelong learning and achievement of the Sustainable Development Goals
4. articulating the openness of open education and serving as the platform for research in open education
5. providing learning opportunities to Overseas Filipino Workers
6. providing learning opportunities in the rise of the gig economy
7. providing learning opportunities for continuing professional development

Responding to the need for reskilling and upskilling, the Philippines MOOC transforms its collection into micro-credential packages for certification programs and develops partnerships with industry to focus on specific learning outcomes and targeted learners.

Thailand

ThaiMOOC initiatives aim at broadening learning opportunities and fostering lifelong learning. Its courses offer open online learning opportunities through videos and various learning resources with formative assessment and learning achievement evaluations. It was launched in 2016 to provide everyone with access to knowledge to enhance work skills and continuous self-improvement. Its system has been regarded as the National Digital Learning Platform – a free learning channel for the public to support lifelong learning. The platform's missions are to develop and provide the central platform for efficient implementation, support the institutions' cooperation in managing MOOCs, expand the learning channel for learners, and raise the learning outcomes to professional and academic qualifications. It operates based on a network of cooperation and uses a variety of systems and mechanisms to link and integrate people's lifelong learning paths.

3.2 Approaches to MOOC Implementation

Across seven nations, diverse approaches and ecological systems are employed to achieve their educational objectives. The following are insights into how each country navigates the landscape of MOOCs.

China

The Government of China is pivotal in strategically directing and overseeing the MOOC ecosystem. By framing it as a national initiative, China emphasizes the important role of higher education institutions in the development and implementation of online education, utilizing their expertise to make substantial contributions to its movement. The Government of China acts both as an organizer and a regulatory body for the entire MOOC ecosystem. Through a series of policies, it has been transitioned from individual institutional efforts to a coordinated national project. The Ministry of Education has been promoting MOOCs since 2013, and by early 2023, 2,970 national online first-class courses were recognized by the MOE.

China hosts 13 platforms, the largest of which are XuetangX and iCourse, to serve as managers and coordinators within its ecosystem. These platforms aggregate course resources from diverse universities, facilitate their promotion and management, and offer teaching and learning services. Higher education institutions act as providers and practitioners in developing and implementing the online education system. iCourse collaborates with a network of 800 universities to offer courses. At the same time, Tsinghua University provides more than 450 courses on XuetangX.

Indonesia

In 2014, Indonesia launched the Pembelajaran Daring Indonesia Terbuka Terpadu (PDITT), later renamed SPADA Indonesia, an integrated open online learning platform to provide high-quality education to a broader audience. This initiative was part of the government's efforts to address nationwide educational disparities and ensure that students from remote and underserved areas have access to quality educational resources. SPADA Indonesia provides various university courses, allowing students to conveniently learn at their own pace. This flexibility is especially advantageous for working professionals and individuals who cannot attend traditional classes due to geographical or financial limitations. SPADA Indonesia helps democratize education and promote lifelong learning among Indonesians.

In addition to SPADA Indonesia, the country has established the Indonesia Cyber Education Institute (ICE Institute). This national MOOC platform provides open online courses from some of the country's top universities. The ICE Institute encourages collaboration among educators and institutions, fosters continuous improvement and innovation in the educational sector, and enhances the quality and accessibility of higher education.

These initiatives demonstrate Indonesia's commitment to leveraging MOOCs to bridge educational disparities and provide equitable access to quality education for all citizens. By promoting the use of MOOCs, Indonesia seeks to develop a more inclusive and competitive higher education system that addresses the evolving needs of its population.

Japan

Japan faces unique societal challenges, such as a rapidly ageing population and high job mobility, necessitating a strong focus on lifelong learning and skill development. To address these issues, Japan has leveraged MOOCs to provide accessible and flexible learning opportunities for its citizens. The establishment of the Japan Massive Open Online Course Promotion Council (JMOOC) has been instrumental in creating and disseminating MOOCs tailored to the needs of an ageing workforce.

JMOOC is operated by a board of directors composed of representatives from its member organizations. These organizations voluntarily provide platforms for JMOOC, including Gacco by NTT Communications, which utilizes Open edX; Open Learning—Japan by Net Learning Co. Ltd., a commercial cloud service; and PlatJaM by JMOOC. Additionally, ten voluntary working groups from member organizations provide policies and directions for its operation and services. Since its inception, it has seen significant growth, with the total number of learners exceeding 1,631,538 as of March 31, 2023. This initiative has been crucial in promoting lifelong learning and skill development, helping Japan address its societal challenges effectively.

Republic of Korea

Korea's Ministry of Education (MoE) initiated the Korean Massive Open Online Course (K-MOOC) to provide continuous learning opportunities for individuals seeking to enhance their skills or transition to new careers. The MoE oversees the K-MOOC delivery system, establishing an annual operation plan and supervising its overall execution. The K-MOOC University Council, consisting of participating universities, serves as a consultative body that disseminates information, shares best practices, and addresses contemporary issues in MOOC development and operation. The Course Evaluation and Selection Committee is responsible for deliberating on the curriculum development and operation, including reviewing course similarities, selecting new courses, and evaluating performance. The K-MOOC Steering Committee advises on management and operational matters, consulting on performance evaluation and project management inspection. Both committees are operated by the Department of K-MOOC Operation at the National Institute for Lifelong Education (https://www.nile.or.kr/index.do).

As the commissioned operating agency, the National Institute for Lifelong Education implements a detailed annual action plan. The National Institute for Lifelong Education plays a pivotal role in implementing the K-MOOC Project, ensuring that the workforce remains competitive and adaptable in an ever-evolving job market.

Malaysia

Malaysia has adopted a multifaceted approach to developing and implementing MOOCs, which are marked by the independent creation of courses by higher education institutions (HEIs) and the support of national policies. The Ministry of Education Malaysia has been instrumental in launching MOOC initiatives, setting standardized criteria, and providing initial funding for its activities. The Malaysia Education Blueprint for Higher Education introduced the Dasar E-Pembelajaran Negara (DePAN), which outlines the national e-learning policy and framework. This policy empowers HEIs to develop and manage their MOOCs, fostering innovation and ensuring that the courses meet the needs of Malaysian students. By integrating institutional autonomy and strategic national policies, Malaysia seeks to enhance higher education quality and accessibility, thereby promoting lifelong learning and skill development.

The Philippines

With government support, the University of the Philippines Open University (UPOU) plays a crucial role in the development and dissemination of MOOCs in the Philippines to address the country's educational needs. A notable initiative is the Online Service Management Program (e-SMP), to bridge the skills gap in the rapidly expanding service sectors. By collaborating with other higher education institutions, UPOU ensures that the courses are relevant and of high quality. This approach enhances the workforce's skill set and promotes lifelong learning and continuous professional development among Filipinos.

Building on the success of e-SMP, UPOU has expanded its services with various Philippine MOOC Certification programs. By continuously diversifying its courses and micro-credential or certification programs, this initiative has successfully attracted a high number of participants across the country.

Thailand

Thailand has made substantial progress in the development and implementation of MOOCs through the Thailand Cyber University Project (ThaiMOOC) (https://thaicyberu.go.th/). Initiated in 2016, it is a collaborative effort involving the Ministry of Higher Education, Science, Research, and Innovation, the Office of Information Technology and Communication Center, and various educational institutions. ThaiMOOC offers affordable, high-quality online courses in various fields to enhance the accessibility of quality education for learners at different stages of their educational and professional journeys. Recognized as a National Digital Learning Platform (NDLP), it plays a crucial role in the

country's educational landscape. Its success is evident from its growing user base, which includes over 600,000 learners. By providing accessible and high-quality education, it significantly contributes to promoting lifelong learning and skill development, thereby advancing Thailand's education system.

The implementation of MOOCs in the seven Asian countries underscores the significant role of government in each nation. Initially, it was predominantly initiated and operated by the respective governments. However, after a decade of development, the implementation has become more distributed, with various institutions, primarily higher education institutions, managing and offering the courses. These institutions utilize diverse learning management systems to ensure MOOCs' scalability, sustainability, and affordability for the Asian population.

3.3 Advancement of MOOC

After a decade of implementation, MOOC has been crucial in transforming higher education institutions across Asian countries. Their widespread adoption by both higher education institutions and the public facilitates their growing significance in the region's educational landscape. By 2024, ThaiMOOC had enrolled over 1.8 million students from more than 120 higher education institutions. Similarly, KMOOC in the Republic of Korea reached a user base of 1 million by 2022. China's Smart Education Platform serves 13.5 million users, offering 44,000 resources for basic education, 19,000 for vocational training, and 27,000 for higher education (Li, Daud, and Rajamanickam, 2023).
The significance of MOOCs was particularly highlighted during the COVID-19 pandemic, as they provided critical supplementary learning resources that supported the continuity of higher education. Their ability to bridge educational gaps and expand learning opportunities has reinforced their role as a fundamental component of modern education in Asia.

Several cutting-edge strategies emerged from these initiatives, including strong collaborations among countries and institutions in sharing quality MOOCs, micro-credentials, and the Academic Credit Bank System (ACBS). Through collaboration, China establishes the East-West Universities Course Sharing Alliance, the Global MOOC Alliance, and the ASEAN-China Global Digital Education Alliance to expand the coverage of its MOOC offerings. KMOOC forms strong partnerships with JMOOC and ThaiMOOC, while the ICE Institute in Indonesia collaborates with several foreign MOOC providers in Asia and Europe. These collaborative efforts across regions have led to the internationalization of higher education.

The credit bank system, pioneered by the Republic of Korea and Thailand, formally acknowledges diverse learning experiences, including qualifications obtained both within and outside the traditional education system, as academic credits. This system allows learners with a high school diploma or equivalent to accumulate credits from various activities and pursue higher education once they reach a specific threshold. The primary target audience includes individuals who did not have the opportunity to study in higher education initially or who discontinued their studies but are motivated to continue reskilling and upskilling. Individuals aiming to meet the requirements for various certifications and qualifications are also part of the target audience. The system identifies specific sources of credit, such as accredited courses, qualification acquisition, passing a bachelor's degree examination for self-education, taking exam-exemption courses, participation in part-time registered courses at colleges, and credit-earning at credit-recognition education and training institutions.

Another advancement in MOOCs is the implementation of micro-credentials, as defined by UNESCO (Beverly, 2022) as:

1. *A record of focused learning achievement verifying what the learner knows, understands or can do.*
2. *Includes assessment based on clearly defined standards and is awarded by a trusted provider.*
3. *Has standalone value and may contribute to or complement other micro-credentials or macro-credentials, including through recognition of prior learning.*
4. *Meets the standards required by relevant quality assurance.*

Micro-credentials are shorter, more focused courses that lead to specific skills or credentials. Malaysia, the Philippines, and Indonesia are among the countries implementing micro-credentials

through their MOOCs. These micro-credentials gain recognition from various parties, including government authorities, making them a more flexible and effective form of education.

3.4 Impact of MOOC

Asian countries have effectively utilized MOOCs to answer challenges related to access and equity in higher and lifelong education. By providing affordable courses that are accessible to anyone, anywhere, and at any time, it has democratized education and included individuals previously excluded due to financial constraints. Over the past decade, it has significantly contributed to higher education development in seven Asian countries by improving accessibility, promoting lifelong learning, fostering societal transformation, and supporting education for sustainable development.

The primary contribution of MOOCs is the enhancement of educational access. Seven countries have reported that MOOCs enable learners from remote and underserved communities to connect with prestigious institutions worldwide. This accessibility benefits students, professionals, and lifelong learners who require flexible learning opportunities tailored to their schedules and needs. Furthermore, seven countries have indicated that MOOCs effectively address the demand for lifelong learning and provide high-quality courses aimed at continuous upskilling, reskilling, career advancement, and personal development.

Seven countries claimed that MOOCs play a vital role in cultivating an informed and skilled population, thereby driving social and economic development and enhancing social mobility. Courses addressing social issues such as sustainability, health, and social justice empower learners to increase their awareness and engage as change agents. By equipping individuals with higher skill sets, MOOCs contribute to innovation and the resolution of complex societal challenges.

The societal impact of MOOCs is profound, as they help mitigate educational inequality by providing equitable learning opportunities and equipping populations with relevant skills and knowledge. This effect is particularly significant in nations such as China, Indonesia, Malaysia, and the Philippines. Moreover, MOOCs actively support Education for Sustainable Development by integrating sustainability topics into curricula. Courses on environmental conservation, sustainable business practices, renewable energy, and social responsibility raise awareness and educate learners about the importance of sustainable decision-making. This educational approach empowers individuals to take informed actions that promote environmental conservation and social responsibility, ultimately advancing sustainable development.

4. Conclusion

The development of MOOCs in seven Asian countries indicates that it has transformed education in Asia by democratizing access to high-quality learning. Asian MOOCs shape higher education through equality, inclusiveness, quality, and lifelong learning principles. It disseminates educational resources, enhancing knowledge across various fields and eliminating traditional barriers. Affordable courses that are accessible virtually enable broad participation, extending opportunities to those previously excluded from quality higher education.

Many Asian countries have embraced MOOCs to advance equity in higher education, promote educational fairness and quality, strengthen competitiveness, and align higher education systems with global standards. The introduction of MOOCs, spearheaded by national governments, highlights the essential role of governmental support in facilitating their growth. Their implementation and operation involve extensive collaboration among higher education institutions across various platforms, with contributions from private sector partners and government policies.

Since their introduction to Asia a decade ago, MOOCs in higher education have undergone significant advancements, including the emergence of international collaborations, the integration of micro-credentials, the establishment of credit banks, and the development of additional features aimed at enhancing the learning experience. These innovations have substantially increased access to quality education, supported governmental efforts to promote lifelong learning, mitigated educational disparities, and contributed to the advancement of education for sustainable development.

Despite the expansion of MOOCs as educational innovations, several challenges persist in their widespread adoption. According to UNESCO (2022), a critical barrier to their implementation is the

recognition by government authorities, higher education institutions, and employers. Without formal acknowledgement, MOOCs face limitations in their integration within the broader education ecosystem. Furthermore, its development and delivery require significant infrastructure investments, including improved internet accessibility, adequate financial resources, and robust institutional support systems. In addition, challenges such as digital literacy, the assurance of high-quality online learning experiences, and institutional capacity constraints hinder their effective implementation. To sustain the development of MOOCs in Asian countries, policymakers and stakeholders must adopt a strategic and collaborative approach, enhancing support to maximize their contributions to national development.

5. Suggestions

This study is based on the seven country reports provided in 2023. Given the rapid technological advancements and the evolution of higher education institutions in Asian countries, it is essential to update this study with the latest developments in MOOCs within Asian higher education. Additionally, a larger sample size and more participating countries will be necessary to offer a more comprehensive understanding of the innovation.

6. Co-Author Contribution

This statement confirms that no conflict of interest is associated with this article. Author 1 conducted the fieldwork, interpreted the results, and authored the entire article. Author 2 performed data analysis, interpreted the results, and reviewed the manuscript.

7. Acknowledgements

This study analysed seven country reports submitted during 2023 as a follow-up of a session on MOOCs in Asian Higher Education at the 35th AAOU Conference in Jeju, Republic of Korea, November 2-4, 2022. The country reports were published in Pannen, P. & Adning, M. (Eds). MOOCs in Asian Higher Education. Universitas Terbuka, 2024, and the contributing authors are 1) China MOOC by Li Wei, Wang Yu, Fan Rongrong; 2) Japan MOOC by Yoshiaki Fukazawa, Yoshinari Okada; 3) MOOC in Indonesia: Potentials and Challenges by Paulina Pannen, Rahayu Dwi Riyanti; 4) Korean Massive Open Online Course (K-MOOC) Service by Heon Joo Suh; 5) Malaysia MOOC: A Country Report by Nurbiha A Shukor, Wan Zuhainis Saad, Azidah Abu Ziden, Tamil Selvi a/p Virasinggam; 6) The Philippine MOOCs: Shaping the Path Towards the University of the Future by Melinda dela Peña Bandalaria; 7) ThaiMOOC: National Digital Learning Platform for Sustainable Lifelong Learning in Thailand by Thapanee Thammetar, Anuchai Theeraroungchaisri, Jintavee Khlaisang.

8. References

Beverly, O. (2022) Towards a common definition of micro-credentials. Paris, UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000381668. Accessed on 10 March 2023.

Chen, J. Chao-Chen (2013) Opportunities and Challenges of MOOCS: Perspectives from Asia. Presented in IFLA WLIC 2013 Singapore. https://library.ifla.org/id/eprint/157/1/098-chen-en.pdf. Retrieved 23 August 2024

Data Bridge (2024) https://www.databridgemarketresearch.com/reports/asia-pacific-mooc-market. Accessed on July 10, 2024.

Despujol, I., Castañeda, L. & Turró, C. (2022) MOOCs as a massive learning resource for a Higher Education Community. The Universitat Politècnica de València experience using the EdX remote access program. Educ Inf Technol 27, 12999–13020 (2022). https://doi.org/10.1007/s10639-022-11140-2. Accessed on 20 August 2024.

Downes, S. (2008). Connectivism and connective knowledge. Innovate. Journal of Online Education, 5(1). Retrieved from https://nsuworks.nova.edu/innovate/vol5/iss1/6. Accessed on 22 May 2024

Li, Y. & Daud, S.N. & Rajamanickam, L. (2023). Review of massive open online courses (MOOC) development in Asia: Present situation, characteristics and prospect. AIP Conference

Proceedings. 050020. https://doi.org/10.1063/5.0165264. Accessed on July 10, 2024

Lohr, S. (2020) Remember the MOOCs? After Near-Death, They're Booming. https://www.nytimes.com/2020/05/26/technology/moocs-online-learning.html May 26, 2020. Accessed on April 14, 2024.

Ministry of Education, ROK (2015), Basic Plan for Korean Massive Open Online Courses (K-MOOC) Service. https://english.moe.go.kr/boardCnts/viewRenewal.do?boardID=265&boardSeq=91029&lev=0 &searchType=null&statusYN=W&page=1&s=english&m=0201&opType=N. Accessed on 30 June 2024.

(2016), Basic Plan for Korean Massive Open Online Courses (K-MOOC) Service.

(2021), Basic Plan for Korean Massive Open Online Courses (K-MOOC) Service.

(2022), Basic Plan for Korean Massive Open Online Courses (K-MOOC) Service.

(2023), Basic Plan for Korean Massive Open Online Courses (K-MOOC) Service

Moore, M.G. & Diehl, W.C. (Eds.) (2018) Handbook of Distance Education. 4th Ed. https://doi.org/10.4324/9781315296135. Accessed on August 21, 2024.

Pannen, P. & Adning, M. (Eds). MOOCs in Asian Higher Education. Universitas Terbuka, 2024.

Romualdo, A., VCD, Palisoc. (2017). UPOU: Pioneering MOOCs in the country. https://up.edu.ph/upou-pioneering-moocs-in-the-country/. Accessed on 17 August 2024

Sabjan, A., Wahab, A.A., Ahmad, A., Ahmad, R., Hassan, S., Wahid, J. (2020) MOOC Quality Design Criteria for Programming and Non-Programming Students. Asian Journal of University Education. Vol. 16, No. 4, December 2020, 61-70. DOI: https://doi.org/10.24191/ajue.v16i4.11941. Accessed 23 August 2024.

Siemens, G. (2012). What is the theory that underpins our MOOCs? Elearnspace. http://www.elearnspace.org/blog/2012/06/03/what-is-thetheory-that-underpins-our-moocs/. Accessed 14 April 2024.