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International Centre
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联合国教科文组织高等教育创新中心

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南方科技大学
SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY

2018 Seminar on ICT Application in Higher Education for Asian and European Countries

Using Online Learning and MOOC to Promote Quality Higher Education Development

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2018 Seminar on ICT Application in Higher Education for Asian and European Countries:

Using Online Learning and MOOC to Promote Quality Higher Education Development

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ABOUT THE OUTPUT DOCUMENT

This publication is an output of the 'Seminar on ICT Application in Higher Education for Asian and European Countries,' sponsored by Ministry of Commerce of the People's Republic of China. UNESCO International Centre for Higher Education Innovation and Center for Higher Education Research of Southern University of Science and Technology, jointly organized the Seminar to meet the needs of ICT development in higher education in Asia and Europe. With Online Learning and MOOC as the themes, the Seminar intends to enhance the ICT capacity of various stakeholders of the higher education sector, namely: policy makers, university faculty members, and technical personnel.

A total of 37 participants from 9 different states across Asia and Europe have attended the Seminar. Together, they have completed a series of workshops, learned about online education and MOOC, and visited demonstration organisations in China, which offered them a comprehensive overview of the stated topics as well as the ICT development in higher education of China. This document summarizes the background, overall design, and execution, as well as case studies of the Seminar. This document will be used to showcase the outcomes and further expand the influence of the Seminar.

Participating Countries

(by alphabetical order)

Cambodia

Lithuania

Malaysia

Mongolia

Pakistan

Palestine

Serbia

Slovakia

Uzebekistan

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Acknowledgements

UNESCO International Centre for Higher Education Innovation (UNESCO-ICHEI) expresses its sincere gratitude to the speakers for generously sharing their respective expertise in ICT Application in Higher Education, namely: Dr. Timothy Hew, Ms. Ying Tang (Hong Kong SAR); Dr. Xuelin Shi, Dr. Yuan Li, Ms. Nancy Kang, Mr. Lei Zhou (China). We would also like to thank the leading Chinese companies for offering highly interactive and insightful site visit opportunities, which are: Huawei, USI Education (Shenzhen); XuetangX (Beijing), Optics Valley (Wuhan), and CreateView Education Science (Guangzhou). Lastly, we would like to thank all other contributors for offering invaluable guidance, service, and help before, throughout and after this Seminar.

Preface

Professor Ming LI

Director

UNESCO International Centre for Higher Education Innovation

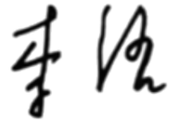
Sponsored by the Ministry of Commerce of the People's Republic of China, the 2018 Seminar on ICT Application in Higher Education for Asian and European Countries is co-organized by UNESCO International Centre for Higher Education Innovation (hereafter as UNESCO-ICHEI) and Center for Higher Education Research (CHER) of Southern University of Science and Technology (SUSTech). Featuring the topics of Online Learning and MOOC, the Seminar has attracted a total of 37 participants from 9 different states across Asia and Europe, which are: Cambodia, Lithuania, Malaysia, Mongolia, Pakistan, Palestine, Serbia, Slovakia, and Uzbekistan.

I believe that the Seminar is of great significance: Within the context of a knowledge-driven economy society with rapid ICT development, higher education is faced with more than ever challenges. It is crucial for the higher education sector to keep up with the progress of frontier technologies. Otherwise, its graduates will not be able to meet the real needs of society. UNESCO-ICHEI is committed to supporting UNESCO member states with reinforcement of their higher education systems by improving the ICT capacity of HEIs, enhancing access to higher education, and assuring the quality of teaching.

Among all ICT application in higher education, MOOC first emerged in the United States in early 2012. A year later, Chinese Higher Education Institutions (HEIs) joined this wave and experienced rapid development. After a short period of time, remarkable progress has been made in developing China's quality online learning platforms and in cultivating skilled professional talents in this field. We can now proudly declare that MOOC in China is now on par with that in developed countries. For example, various Chinese universities have offered online courses on internationally renowned online learning platforms and a number of HEIs have joined hands with professional organizations in establishing over ten domestic MOOC platforms. A number of 3,200 MOOCs produced by over 460 HEIs have been recorded, making China the top country in producing MOOCs across the globe. According to Class-Central, XuetangX of China ranked number 3 among the top 5 global MOOC platforms in 2017, in terms of the total number of registered users.

It is generally believed that Online learning and MOOC can and will be beneficial to the development of higher education, such as helping improve teaching in HEIs and meeting challenges in talent cultivation. Therefore, it is essential for developing countries to take full advantage of this opportunity and actively promote online learning in higher education as a way to sustain the coordinated development of higher education. Only through the sharing of good educational resources can we offer a better education to all and promote equity in education.

We hope that this Seminar will serve as a beginning to share and exchange Chinese experience of ICT application in higher education with universities and institutions in Asia and Europe. It is also hoped that this Seminar will enable us to build long-term partnerships and facilitate close cooperation among HEIs in the region to enhance mutual understanding, deepen friendship, and ultimately improve the overall quality of higher education.



Shenzhen
November, 2018

Executive Summary

Co-organized by UNESCO-ICHEI and CHER, the Seminar on ICT Application in Higher Education for Asian and European Countries 2018 with Online Learning and MOOC as the focus,aims to enhance the ICT capacity of various stakeholders of higher education. The Seminar sets out to help these countries to cultivate talents, improve the quality of universities, and promote equity in higher education by tapping into Shenzhen's strength in the ICT industry and sharing China's experience of ICT application in higher education.

Specifically, the Seminar has the following three characteristics:

1. Diverse Participants

A total of 37 policy makers, university faculty members, and technical personnel from Cambodia, Lithuania, Malaysia, Mongolia, Pakistan, Palestine, Serbia, Slovakia, and Uzbekistan completed the Seminar successfully. Specifically, 13 participants are officials from the Ministry of Education, 17 are faculty members of HEIs, and 7 are technical engineers.

2. Enriched Teaching and Practices

To accommodate the actual needs of participants, the Seminar has divided the curriculum into three parts: core courses, general courses, and practice. It is believed that this curriculum has greatly improved participants' understanding of ICT application in higher education and expanded their expertise in related fields. It has also given them the opportunity to observe and learn from the experience and practices of ICT application in China's higher education.

3. Direct and Effective Partnership

Together, UNESCO-ICHEI and CHER have created a database of the participants who have participated in the Seminar. It serves as a foundation, allowing UNESCO-ICHEI and CHER to build and foster a network of direct and effective partnership with relevant ministries, universities and organizations in respective countries for collaboration and exchange in the future.

Chapter 1
Background

1.1 Digital Opportunities and Challenges in Higher Education

In today's knowledge-driven economy, as pointed out by an OECD report in 2008, higher education is the key to a country's competitiveness. Leaders around the world are becoming increasingly aware that higher education is driving economic development forward[1]. Therefore, 'to invest in higher education as a major force in building an inclusive and diverse knowledge society, and to advance research, innovation, and creativity' has been a subject of increased attention from various governments[2].

With the rapid development of ICT, learning has become ubiquitous. The World Education Innovation Summit (WISE), held in October 2014, released the survey report titled *Schools in 2030*. The report points out that future schools will be transformed from a place where students receive theoretical knowledge into a social environment which is more like a 'conference room'. 93% of the 645 expert representatives from around the world said they would like to see schools adopt new methods to better assist participants in their studies and preparation for future careers. In May 2015, UNESCO adopted the *Qingdao Declaration*[3], which advocates for member states to 'seize the digital opportunity' to support The Education 2030 Framework for Action proposed by the Incheon Declaration and Framework for Action4. Both declarations are clear statements in favor of the use of ICT to strengthen education systems, foster access and equity in education as well as to promote the effective pedagogical use of ICT. Later, in June 2016, the International Meeting on Innovation and Entrepreneurship Education held in Shenzhen further reinforced this proposal. It is suggested that governments, industry partners and all other education stakeholders join forces to tap the potential of open distance learning to create 'equitable, dynamic, accountable, and sustainable learner-centered digital learning ecosystems.'[5]

Indeed, ICT has changed the way knowledge is acquired fundamentally. There is no doubt that ICT will continue to play an important role in every aspect of our life, especially in higher education, in a more systematic and comprehensive manner. Higher education should keep up with the upgrading of new technologies. The application of ICT in higher education not only serves as a useful supplement to the traditional education model but more importantly, makes learning at anytime and anywhere possible. This will surely drive the reform in higher education.

[1]Santiago, Paulo et al. Tertiary Education for the knowledge society Volume 1, Special Features: governance, funding, quality. Paris, 2008
[2]UNESCO. UNESCO World Conference on Higher Education Final Report. Paris, 2009
[3]UNESCO. Qingdao Declaration. Qingdao, 2015
[4]UNESCO. Incheon Declaration and Framework for Action for the implementation of Sustainable Development Goal 4. Incheon, 2015
[5]UNESCO-ICHEI. Shenzhen Consensus. Shenzhen, 2016

1.2 ICT Application in Higher Education

With the rapid development of ICT in the 1990s, people started to pay more attention to its impact on social development. The term 'ICT application (or informationtisation)' came into being and began to popularize. Under this context, higher education, which plays a critical role in promoting the economic and social growth of a country, becomes even more important and has been placed as priorities on national agendas. For example, 'Information Superhighway' introduced by the United States identified the application of ICT in education as a gateway to education reform in the 21st century.

According to definition, ICT is an 'electronic means of capturing, processing, storing, communicating information[6].' It is an umbrella term that includes any communication device or application, encompassing: a series of modern technologies, as well as the various services and applications associated with them, such as video conferencing and online learning. The list of ICT components is exhaustive, and it continues to grow. Some components, such as computers, radios, and telephones, have existed for decades. Others, such as smartphones, digital TVs, and robots, are more recent entries.

The application of ICT in higher education is highly beneficial as it provides opportunities for instructors and students to operate, store, process and retrieve information, encourage independent and active learning, as well as motivate instructors and students to continue using learning outside school hours[7]. On top of this, it has the potential of not only engaging students in learning activities to increase their learning, but also helping them solve complex problems and enhance their cognitive skills.

Figure 1 – The Four Rationale for Introducing ICT in Education[8]

[6]Heeks, R. Information and Communication Technologies, Poverty and Development. Manchester, 1999

[7]Jonassen, D.H., & Reeves, T.C. 'Learning with Technology: Using Computers as Cognitive Tools'. In D.H Jonassen (Ed.), Handbook of research for educational communication and technology (pp. 693-719). New York: Simon and Schuster, 1996

[8]Cross, M. & Adams, F. ICT Policies and Strategies in Higher Education in South Africa: National and Institutional Pathways. Higher Education Policy. 2017, 20(1), 73-95

ICT application in higher education implies a brand-new form of education. It refers to the process of education reform and development facilitated by the extensive use of ICT. It is believed that its application will play a bigger role in addressing challenges facing mankind in the 21st century, and will become an important part of education reform across the globe.

Specifically, the usage of ICT in higher education can be categorized into three areas, as shown in table 2 below.

Research & Development	Teaching & Learning	Community Engagement
Example:	**Example:**	**Example:**
Complex calculations	Learning/Course	Student/HR management
Cross-institution/nation	Management Systems;	Systems;
research	Virtual Library;	University-Industry
Access to academic	E-Learning Platforms;	Partnership (technology
resources	Digital Learning Materials	transfer)

Table 1 – ICT Application in Higher Education by Categories

Despite the potentials ICT has shown in higher education, there is not yet a universal mechanism to measure the level of ICT application in higher education. However, we can get a glimpse of the ICT development around the world through some figures published by numerousinternational organizations and non-government authorities. For example, International Telecommunication Union (ITU) has been publishing the Measuring the Information Society Report[9] annually since 2009. The report is widely recognized as the repository of the world's most reliable and unbiased global data and analysis on the state of global ICT development. By 2017, 176 countries/regions have been included in the report.

The ICT Development Index (IDI), as featured in the report is a unique benchmark to measure the level of ICT development in countries and regions across the world over time. Specifically, it uses a three-stage model to depict a country's transformation to becoming an information society, as illustrated in Figure 2.

Stage 1: ICT Readiness – reflecting the level of networked infrastructure and access to ICT

Stage 2: ICT Use – reflecting the level of intensity of ICTs in the society

Stage 3: ICT Impact – reflecting the results/outcomes of more efficient and effective ICT use

Figure 2 – The Three-Stage Model of a Country's Transformation to Becoming an Information Society

[9]International Telecommunication Union. Measuring the Information Society Report. Geneva, 2017.

For a country to advance through these stages, it requires a combination of three factors – ICT access, ICT use, and ICT skills, which are further divided into 11 indicators (see Figure 3). Together, these indicators track progress in all of the factors of ICT development, taking into consideration technology convergence and the emergence of new technologies.

ICT access	Reference value	(%)
1.Fixed-tephone subscriptions per 100 inhabitants	60	20
1.Mobile-cellular telephone subscriptions per 100 inhabitants	120	20
3.International Internet bandwith (bit/s) per internet user	2'158'212*	20
4.Percentage of households with acomputer	100	20
5.Percentage of households with Internet access	100	20

ICT use	Reference value	(%)
6.Percentage of individuals using the Intemet	100	33
7.Fixed-broadband subscriptions per 100 inhabitants	60	33
8.Active mobile-broadband subscriptions per 100 inhabitants	100	33

ICT skills	Reference value	(%)
9.Mean years of schooling	15	33
10.Secondary gross enrolment ratio	100	33
11.Tertiary gross enrolment ratio	100	33

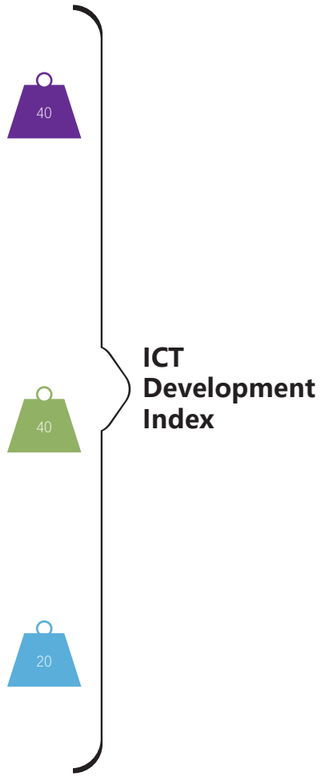


Figure 3 – ICT Development Index – indicators, reference values and weights

According to the 2017 report, in spite of the rapid expansions of ICT, there are still considerable differences between countries and regions. Within the top ten countries/regions (see Table 2), seven countries are in Europe, and three in the Asia-Pacific region. These countries have experienced a relatively long period of steady economic and social development, which contributes significantly to the level of ICT development.

IDI Rank	Country/Region	IDI Value
1	Iceland	8.98
2	Korea (Rep.)	8.85
3	Switzerland	8.74
4	Denmark	8.71
5	United Kingdom	8.65
6	Hong Kong, China	8.61
7	Netherlands	8.49
8	Norway	8.47
9	Luxembourg	8.47
10	Japan	8.43

Table 2 – List of 2017's Top Ten IDI Countries/Regions

As a reference point, the 2017 IDIs of all nine states who participated in the Seminar are listed in Figure 4. In general, the three European countries ranked significantly better with an average of 6.95, whereas that of the Asia-Pacific region is only 4.25. It is clear that their IDI rankings correspond with their economic development.

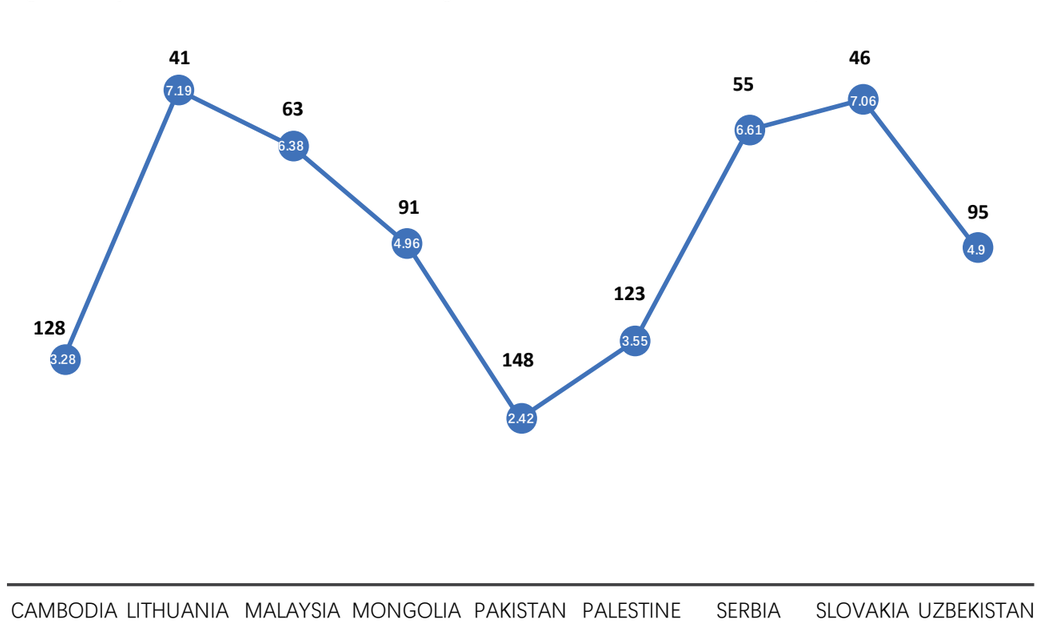


Figure 4 – Rankings of 2017's IDIs among the 9 Participating States of the Seminar

Apart from the IDI calculated by ITU, the World Bank[10] also released statistics that shed some lights on the ICT landscape around the world. It stated that more than 75% of people worldwide had access to a cell phone. However, internet access through either mobile or fixed broadband remained expensive in many countries due to a lack of ICT infrastructure. Furthermore, it estimated that out of the global population of 7.4 billion people, more than 4 billion still did not have access to the internet. Additionally, it estimated that only 1.1 billion people had access to high-speed internet.

Together, these data have showed that there remains a huge discrepancy, also known as digital divide, among the countries in terms of ICT. Simply put, individuals in more developed countries enjoy more and easier access and thus have a greater ability to seize on the advantages and opportunities powered by ICT.

[10]World Bank. World Development Indicators (2016), Mobile Cellular Subscription. Retrieved from https://data.worldbank.org/indicator on November 2, 2018

1.3 Role of ICT in Higher Education

Speedy growth of ICT is taking place all over the world. Its introduction and unprecedented application in higher education has generated varied responses. Its opportunities can be categorized as the areas relating to access and equity, pedagogy for quality learning, and capacity building.

Access and Equity in Higher Education

In spite of the fact that teachers are traditionally the focus of teaching and learning process, ICT is a very powerful tool for diffusing knowledge and information. ICT is emerging as an important strategy to provide widespread and easy access to quality higher education at a more affordable price and a timelier fashion.

Pedagogy for Quality Learning in Higher Education

Another important dimension of higher education sector influenced by ICT integration is the improvement in the quality of learning. Traditional learning processes are undergoing a paradigm shift to promote competency and performance. Such curricula tend to require access to a variety of information sources, information forms, and types; adopt student-centred learning settings; apply problem-centred and inquiry-based activities within authentic settings; and transform teachers to the role of facilitators and mentors[11].

Capacity Building/Training in Higher Education

Apart from enhancing student's learning experience, capacity building/training of educational personnel can benefit from the adoption of ICT. Technology facilitated learning would result in the preparation of staff regarding innovative pedagogic methods, new ways of teaching and interacting, regular sharing of new practices among the teaching community and increasing the opportunities for their participation. The resources to train competent teachers/academic talents can be made available to larger audiences through flexible and virtual settings.

Evidential Support for Innovative Practices

Lastly, ICT has the potential to drive innovative and effective ways of teaching and learning through research. With the use of these technologies, data collection, process, and analysis of teaching and learning outcomes through ICT is made feasible. More evidence can be found to support innovative teaching and learning approaches and drive them forward.

[11]Neeru, S. ICT in Indian Universities and Colleges: Opportunities and Challenges, Management and Change, Vol. 13, No.2, 2009, pp. 231-244

Although ICT offers a number of benefits, there are some risks and challenges of using ICT in higher education. To ensure its sustainable development, stakeholders need to constantly reflect and draw conclusions along the way, and come up with proper mitigation mechanism.

The first and most obvious difficulty is the high cost of investment. From purchasing and installing, to operating, maintaining and replacing – each stage would require financial input. Whether it is an HEI located in a more developed region or one lacks financial resources, it is vital for the stakeholders to make long-term strategic plans with full consideration of their own needs and situations.

At the same time, in the process of introducing ICT, there is a possibility that HEIs might make some common mistakes: a) installing learning technology without reviewing students' needs and availability of existent content; b) imposing new systems using the top-down approach without involving faculty and students; c) using not relevant (even inappropriate) content from other regions without customizing it appropriately; and d) producing low-quality content that has poor instructional design and is not adapted to the technology in use .

Some other risks include the creation of a digital divide within students as some might be more familiar with ICT and can reap more benefits and learn faster than others. Similarly, it may shift the attention from the primary goal of the learning process to developing ICT skills, which is the secondary goal. Lastly, it can affect the bonding process between the teacher and the student as interactions take place through a virtual environment rather than face-to-face conversation. Together, these are some of the risks that stakeholders need to consider when applying ICT in higher education.

[12] UNESCO. ICTs for Higher Education – Background Paper Commonwealth of Learning. Paris: 2009

1.4 Online Learning and MOOC in Higher Education

Online Learning arises as a response to the development of ICT in higher education. It is a general term used to refer to computer-enhanced learning, which deals with both the technologies and associated methodologies in learning using networked and multimedia technologies.

From a technical perspective, online education overcomes the barriers of time and space, enabling access to study anytime and anywhere. According to UNESCO, it can provide access to 'the best gurus and the best practices or knowledge available'.[13] From an educational perspective, online education allows learners to take control of their learning at their own paces log their learning progress over time, place and varied activities. In addition, Online Learning allows for higher participation and greater interaction. It challenges the concept of face-to-face traditional education. The components of Online Learning include e-portfolios, cyberspaces, digital libraries, and online learning object repositories. All the above elements create a digital identity of students and connect all the stakeholders in this process.

In 2012, Massive Open Online Course (MOOC) became a global phenomenon with Coursera and edX entering the scene of Online Learning. Since then, MOOC has taken a steady growth to an extent that the New York Times called 2012 'The Year of the MOOC[14]'. MOOC, is online learning designed to teach learners at scale.

In particular, the Online Learning and MOOC movement is marked by 4 distinctive features: **scalability, optimal resource utilization, self-paced learning,** and **removal of other constraints.** These four features are also in line with the current job market where any skills become obsolete in a decade or so. With the rapid technological changes, constant learning is the most pressing need of the day. Therefore, this movement is playing a critical role in transforming the higher education sector.

[13] UNESCO. Open and Distance Learning Trends, Policy and Strategy Considerations. Paris, 2002

[14] Pappano, Laura. The Year of the MOOC, Published on November 2, 2012 in The New York Times, Retrieved from https://www.ntimes.com/2012/11/04/education/edlife/massive-open-online-courses-are-multiplying-at-a-rapid-pace.html

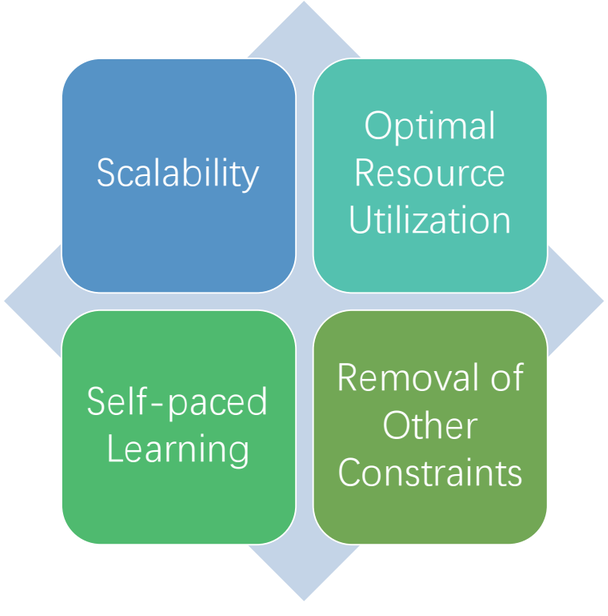


Figure 5 Features of Online Learning and MOOC

According to Class Central[15], the MOOC landscape has grown rapidly over the last five years. As can be seen from the following two figures (Figure 6 & 7), it has included 9,400 courses, involved more than 900 universities and attracted 81 million students in the world by 2017. New courses are being added each year steadily with a rapid increase since 2015, making the current total number of MOOCs available to register for at any point of time larger than ever.

Figure 6 – The Global Landscape of MOOC (Source: Class Central)

[15] Class Central. A Product at Every Price: A Review of MOOC Stats and Trends in 2017, Published on January 22, 2018. Retrieved from https://www.class-central.com/report/author/dhawal/

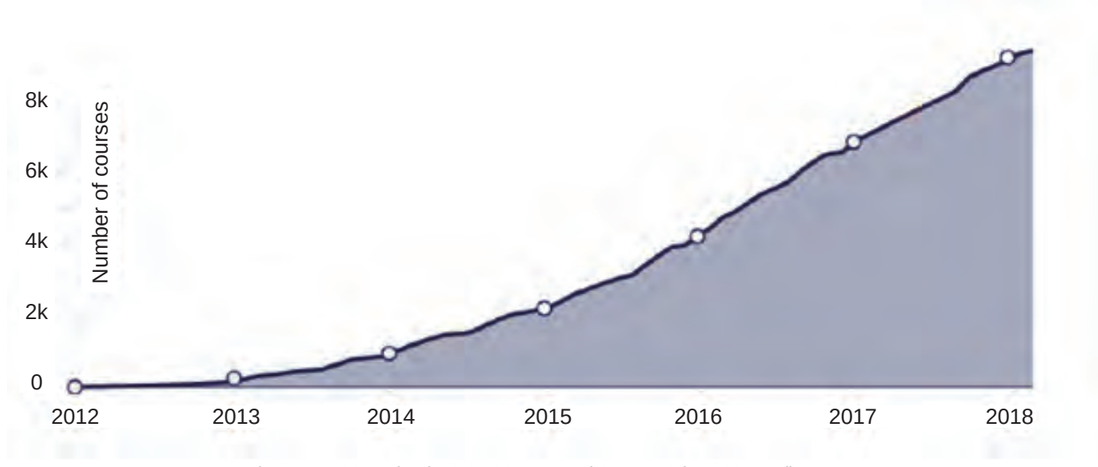


Figure 7 – Growth of MOOC Courses (Source: Class Central)

With the passage of time, some problems regarding greater adoption of Online Learning and MOOC have emerged. For example, there is the challenge of ensuring quality and equity. Online Learning and MOOC should be designed to serve the interests of those who need it most, rather than for the sake of popularity. Other challenges include the low completion and high dropout rate, a lack of effective monitoring and evaluating system, just to name a few (see Figure 8). It is essential for MOOC platforms and HEIs to address these problems. Also, relevant stakeholders should consider how Online Learning and MOOC can better supplement formal education to have a greater impact.

Figure 8 – Challenges Towards Great Adoption of Online Learning and MOOC

This movement of Online Learning and MOOC has been one of the most hotly-debated topics in higher education over the past few years and is sure to continue. While opinions have been extremely polarizing – with some people claiming it as the greatest leap for education and some dismissing it as another fad, it is certain that it will have a great and far-reaching impact on higher education in the future. It has the potential to solve some of the big problems facing higher education, including unsustainable costs, participation rates, and outdated teaching and learning environment. And for these reasons, this movement should be supported by the higher education community and various stakeholders, as they will supplement traditional higher education to extend to more people in different parts of the world.

Chapter 2
Overview of the Seminar

The 2018 Seminar on ICT Application in Higher Education for Asian and European Countries was held from June 19th to July 9th in Shenzhen, China. During this 21-day Seminar, participants were exposed to a wide range of well-crafted activities such as seminars and lectures, hands-on workshops, site visits as well as cultural events. This chapter is an overview of the Seminar, including its participants, curriculum design, and activities.

2.1 Participants

In total, 37 participants from Cambodia, Lithuania, Malaysia, Mongolia, Pakistan, Palestine, Serbia, Slovakia, and Uzbekistan participated and completed the Seminar successfully.

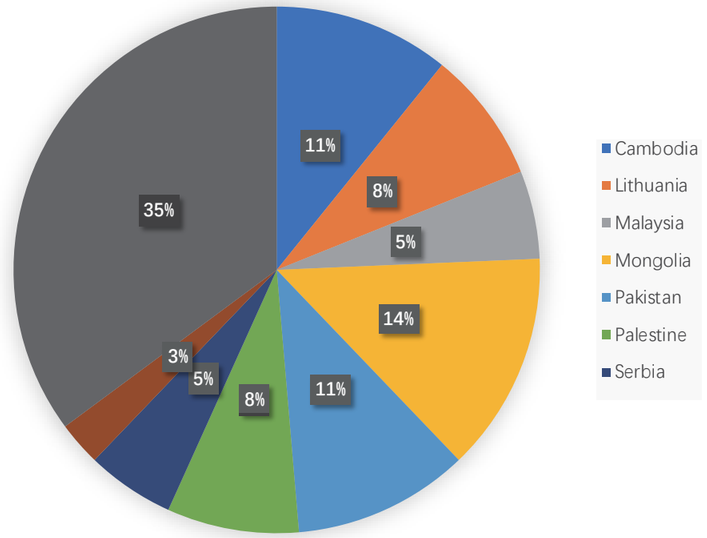


Figure 5 Features of Online Learning and MOOC

Among all, 13 participants hold positions from government organizations in respective countries (policy makers), 17 are university faculty members, and 7 are technical personnel. Over half of them hold master's degree or above.

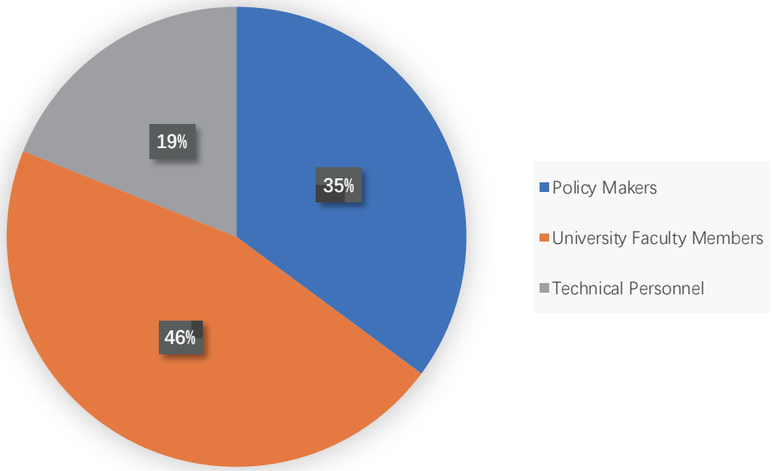


Figure 10 – Profession Distribution of the Participants

In addition, participants are different in terms of age, work experience and gender. The majority of them are under 40 years old. 21 participants are aged between 30 to 39; 6 of them are aged between 20 to 29; and 10 are aged between 40 to 49. Only 8 out of the 37 participants are female.

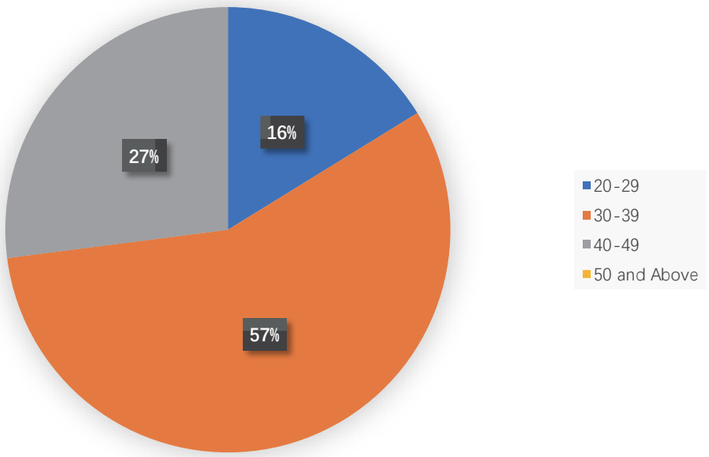


Figure 11 – Age Distribution of the Participants

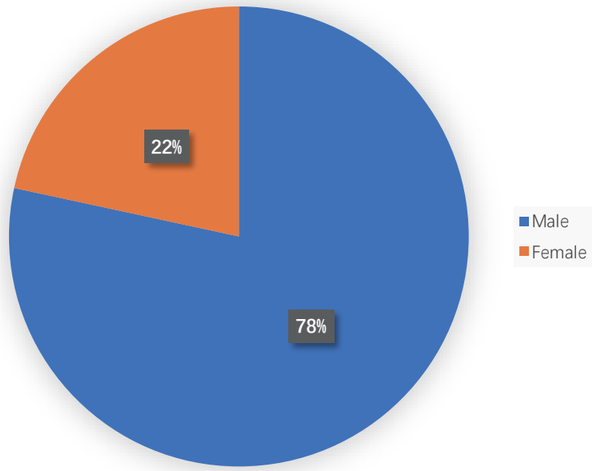


Figure 12 – Gender Distribution of the Participants

Diversity in the participants' backgrounds create diversity in needs. Therefore, adjustments have been made in the curriculum design so as to meet different demands and interest of different participants.

2.2 Curriculum Design

a. Learning Objectives

As previously stated, a majority of countries have realized the importance of ICT in higher education and started exploration in this field, from policy-making to applications in teaching and research. This process involves various stakeholders and requires the joint efforts of all. Only when all stakeholders in this field take a series of actions to enhance their capacities can we truly achieve our goal.

Specifically, we have classified these stakeholders into three groups, which are: policy makers, university faculty members, and technical personnel. Based on the UNESCO ICT Competency Framework for Teachers published in 2011, UNESCO-ICHEI has designed the seminar specifically for these three groups. These three groups and their respective objectives are as follows:

Policy Makers:

- To enhance their awareness of the role of ICT in higher education;
- To advance their understanding of Online Learning and MOOC in higher education;
- To strengthen their capacity of Online Learning and MOOC related policy-making; and
- To help them gain new insights into ICT-enabled higher education ecosystems.

University Faculty Members:

- To enhance their awareness of ICT in higher education and apply accordingly in academic activities;
- To advance their systematic understanding of Online Learning and MOOC in higher education;
- To encourage them to use innovative and creative pedagogical approaches in higher education;
- To develop their capability to integrate Online Learning and MOOC into curriculum to optimize their teaching in accordance with their own needs and practices;
- To further their holistic understanding of the application Online Learning and MOOC in teaching through hands-on practice; and
- To improve their ability to critically identify and evaluate the use of ICT in educational settings.

Technical Personnel:

- To raise their awareness of how ICT supports higher education;
- To increase their knowledge and capacity of Online Learning and MOOC in higher education; and
- To enhance their capability to contribute to the development and integration of ICT within their respective organizations/universities.

b. A Task-oriented Approach

A task-oriented approach follows a sequence of certain stages, and is based around the completion of a central task. The Seminar has adopted this approach with the hope to reinforce learning objectives throughout the process.

Preparation Phase:

The objective of this phase is to familiarize participants with the purpose and meaning of the Seminar.

Tasks:

- To collect literature regarding ICT application in higher education in the respective country;
- To collect policies and projects on ICT application in higher education in respective countries and universities;
- To identify a case study for ICT application in higher education in respective countries and universities;
- To collect resources that reflect ICT application in higher education; and
- To understand the task requirements of the Seminar.

Requirements:

- To collect resources and prepare report/presentation.

Training Phase:

This stage requires the participants to complete the courses, achieve the capacity building goals within the framework, and draft a micro MOOC lesson plan. Policy makers, university faculty members and technical personnel are encouraged to work together to complete the task of the seminar during the designated time.

Tasks:

- To establish a working group by country and to foster an in-depth understanding of the country or university's needs for ICT application in higher education in terms of its necessity, goals, and significance;
- To create a practical micro MOOC lesson plan through the takeaways from the lectures/workshops, site visits;
- To complete a briefing of ICT application in education; and
- To design materials for the production of micro-MOOC session.

Requirements:

- To complete the learning content;
- To participate in group discussions and idea exchanges;
- To design and complete a micro-MOOC lesson plan; and
- To engage in discussions for improvement.

Progress Tracking Phase:

The organizers of the Seminar need to further understand the participants' development for their professional needs after the event in order to modify and improve the design for the next training stage.

Tasks:

- To understand the impact of the Seminar on the future work of the participants; and
- To further understand the needs and development of the participants.

Requirements:

- To design data tracking tools;
- To conduct data analysis and processing; and
- To modify and improve the relevant courses based on the collected data.

c. Modules

The curriculum is also divided into six modules by types. Modules 1, 3 and 4 focus on the professional development of ICT capacity building related to Online Learning and MOOC through a series of seminars and lecturers; Module 2 offers an overview of the Chinese culture, language and history by means of lectures and cultural activities; Both modules 5 and 6 target at hands-on practice and emphasize interaction and exchange regarding Online Learning and MOOC through site visits and workshops. Together, these modules complement each other to offer participants a comprehensive overview of the topics of the Seminar.

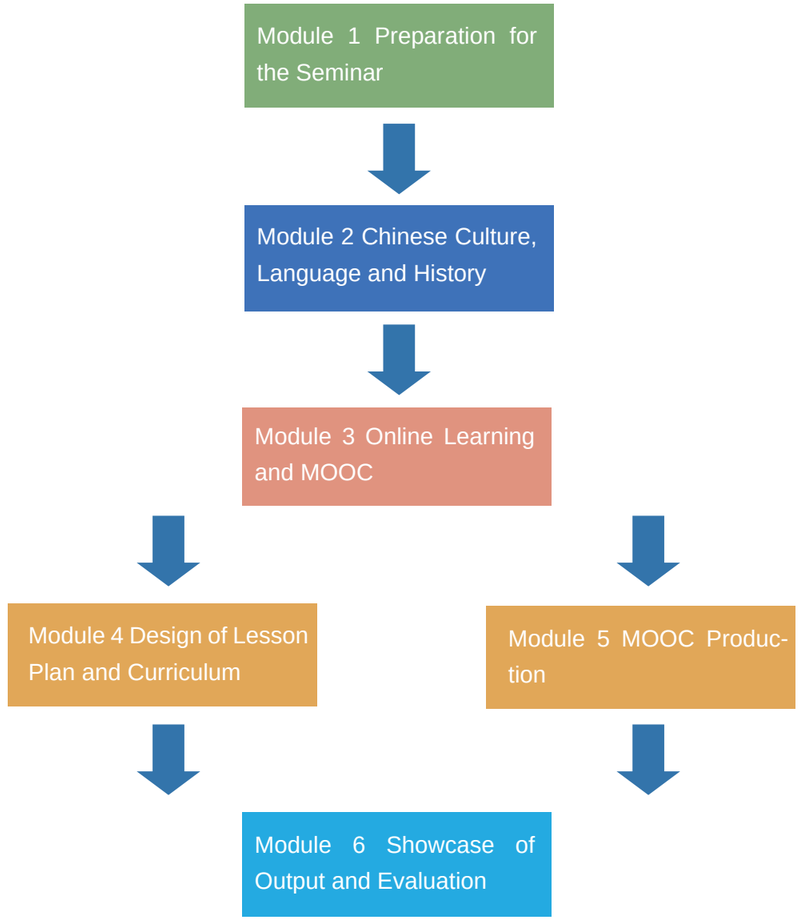


Figure 13 – Modules of the Seminar

2.3 Summary of the Seminars/Lectures

A. The Past, Present and Future of MOOC– Dr. Timothy Hew, Associate Professor, Faculty of Education, The University of Hong Kong

This session reviewed the brief history and some facts of MOOC. Then, it moved on to discuss the dilemma in MOOC such as access, quality, and costs. Notwithstanding, MOOC have their own merits and can have a significant impact if planned and used properly using the ABCD approach.

History of MOOC

The term MOOC was coined to refer to a course developed by Stephen Downes and George Siemens entitled Connectivism and Connectivity Knowledge in 2008. Their intention was to exploit the possibility for interactions between a wide variety of participants made possible by online tools so as to provide a richer learning environment than traditional tools would allow. 25 students attended the course on the campus of the University of Manitoba, and a further 2300 from around the world participated online. MOOC with an emphasis on interactions and connectivity is regarded as cMOOC.

Later, in the fall of 2011, Stanford offered three online courses for free. Peter Norvig and Sebastien Thrun offered their Introduction to Artificial Intelligence to an initial enrolment of over 160,000 students from around the world. Over 20,000 students completed the course. This type of MOOC focused less on interaction between students and more on exploiting the possibilities of reaching a massive audience is called xMOOC.

The ABCD Approach

The ABCD Approach can be incorporated into a lesson plan template for MOOC, which consists of three parts: Course Background, Detailed Lesson Plan, and Assessment.

√ **Actor**: Students are the focus of MOOC.

√ **Behaviour**: The objectives need to be defined clearly as well as be observable and measurable.

√ **Condition**: Students need specific situations to achieve their expected learning outcomes.

√ **Degree**: Students will achieve different levels of learning outcomes.

Guides to Using MOOC

√ Insert memory tests in online videos to reduce loss of focus and improve learning of content;

√ Segment videos into short chunks, which are ideally less than 6 minutes;

√ Record the instructor's head and insert it into the presentation video as a human face gives a more intimate and personal touch;

√ Try to record the instructor sitting at a desk making direct eye contact;

√ An instructor writing on a digital tablet is more engaging than using PPT slides.

B. Engaging Adult Learners: Characteristics and Strategies – Dr. Timothy Hew, Associate Professor, Faculty of Education, The University of Hong Kong

Dr. Hew started by introducing the changes in the current higher education landscape. With students coming from diverse backgrounds, age groups, and experiences, multiple challenges have been raised. It is crucial for educators to incorporate some assumptions about adult learners into their instructional strategies in order to engage them more effectively.

Andragogy and Principles of Adult Learning

'Andragogy' refers to the art and science of adult learning and was originally coined by German educator Alexander Kapp. Later in 1984, Malcolm Knowles, an American adult educator, suggested 4 principles to be built into the instructional design to make sure the course is motivational, interactive, and relevant. This has been summarized as four instructional strategies:

√ **Self-directed learning:** There are four stages in self-directed learning, in which educators fill the roles of authority coach, motivator, guide, facilitator, consultant, and delegator. By setting goals with students, giving them ownership of their learning, and involving them in the process, students ultimately transform from dependent learners to self-directed learners.

√ **Collaborative Learning:** They are five key points to collaborative learning, which are: structuring collaborative tasks, orienting and training students to participate, forming groups, facilitating student collaboration, and evaluating students in collaborative situations.

√ **Problem-based learning:** Problem-based learning focuses on solving a 'real life problem.' A process of defining the problem, explaining 'what we know about the problem' and 'what we need to know,' generating the possible solutions, trying out the solutions, and revising the solutions if necessary is followed.

√ **Experiential/Workplace Learning:** Experiential/Workshop learning emphasizes the immediate relevance of knowledge. This learning strategy relates what they have learned to show what kinds of impact this knowledge has on their jobs or personal lives.

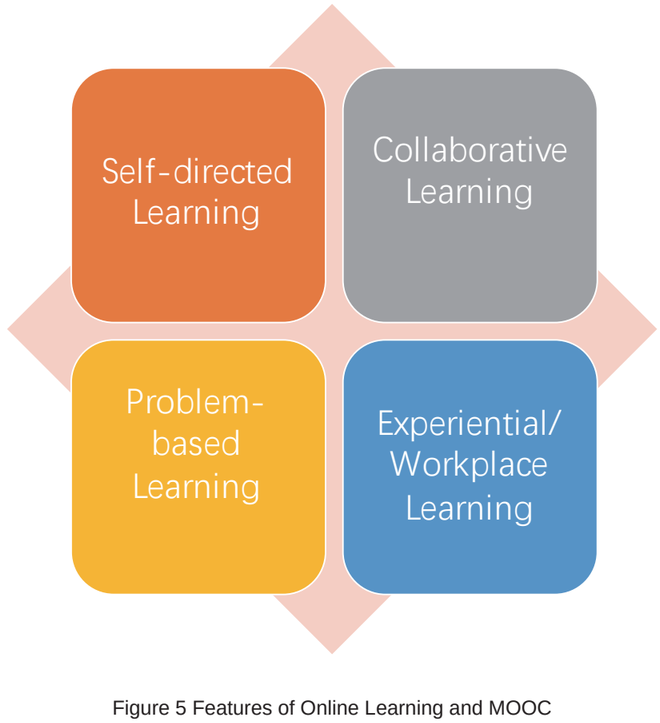


Figure 5 Features of Online Learning and MOOC

Assumptions about Adult Learners

There are four assumptions about adult learners that educators need to be aware of. Adult learners are interested in problem-solving, accumulating a growing reservoir of experience, expect to apply what they have learned immediately, and want to control and direct their learning themselves. With these characteristics in mind, it is believed that the learning outcomes and interaction will be much greater.

C. ICT in Chinese Higher Education– Dr. Xuelin Shi, Deputy-dean of Digital Education Institute, People’ s Education Press

Dr. Shi started this session from giving an overview of the entire landscape of the Chinese Higher Education. It has been well recognized that great progress has been achieved in China in recent years. For example, the following Table shows the basic development statistical data for Chinese Higher Education from 2010 to 2014. It shows that the whole scale of higher education in China has been expanded in the last five years with a rising gross enrolment rate.

Year	Total Number of enrolled students (in 10 thousand)	Gross Enrollment Rate(%)	Total Number of Colleges and Adult Colleges	Total Number of Enrolled Master-Students(in l0 thousand)	Total Number ofEnrolled Ph. Dstudents(in l0 thousand)
2010	3105	26.5	2723	127.95	25.89
2011	3167	26.9	2762	137.46	27.13
2012	3325	30.0	2790	143.60	28.38
2013	3460	34.5	2788	149.57	29.83
2014	3559	37.5	2824	153.50	31.27

Source: Ministry of Education of the Pcople's Republic of China: National Educational Development Statistical Bulletin(Years 2010 - 2014)

Along with this massification, the application of ICT in Chinese higher education since last century has also entered a rapid development era. This is reflected in the increasing coverage of computer-based automation systems and management systems across campuses in China. This is the result of the promotion of ‘universal access to ICT, learning resources, and cyber learning space by the Chinese national government. With the emphasis on these three aspects, significant improvements in terms of the levels of teachers’ digital literacy, the number of ICT equipment applied in the classroom settings, and teacher-student interaction have been recorded.

In April 2018, the Chinese Ministry of Education released ‘Educational Informatization 2.0: Action Plan’ for the next 5 years. This document marked the transition from Education Informatization 1.0 to 2.0 with the distinction of integrating and innovating ICT application in higher education. In the future, along with the development of cloud computing, artificial intelligence, virtual reality and MOOC, there is no doubt ICT application will continue to have more fundamental impact on higher education.

D. Building a MOOC Platform: From the Perspective of SUSTech – Dr. Yuan Li, Deputy Director, Teaching Affairs Office, SUSTech

It is commonly agreed that ‘technology is a double-edged sword.’ Despite its rapid development, the wider adoption of MOOC in higher education today is still faced with various challenges. As MOOC moves from an experimental technology to a more standard learning resource, MOOC platforms and university course developers alike are spending more time thinking about how to make MOOC accessible.

At SUSTech, the Teaching Affairs Office and MOOC Production team have stepped up to the challenge of creating accessible MOOC content. As a young university, SUSTech has been actively learning from the experiences of other counterparts across the world to develop its own system of building MOOC.

To start with, the adoption and promotion of MOOC on campus would require support from the university at policy level. The top-down approach guarantees that relevant departments will have the full support to establish a comprehensive system with consideration of credit transfer, evaluation and technical support. Second, despite the top-down approach, there should also be a bottom-up approach where the opinions from faculty, students and support personnel are heard. This will prevent the division of gap and encourage both sides to come to the middle ground. Third, while building the MOOC platform, the university needs to take a balanced curriculum design into consideration. In SUSTech’s case, it integrates humanity and arts course into its science and engineering curriculum. This creation of diversity and balance makes sure that students will have a good selection of choices. Last, the university has implemented a system with incentives to encourage teachers and students to take active participation in MOOC. These are some of the approaches SUSTech has been taking.

2.4 Summary of Site Visits

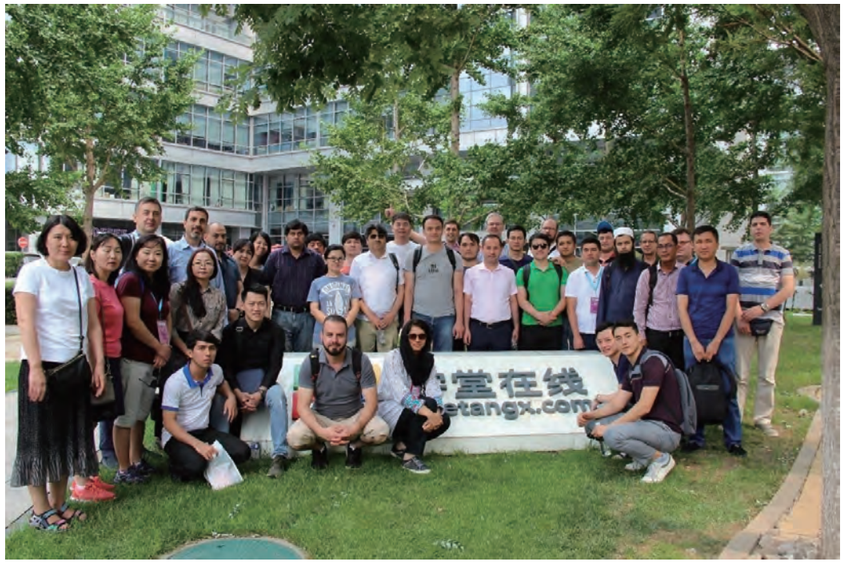
Huawei

Huawei is a leading global information and communications technology (ICT) solutions provider. They have established a competitive ICT portfolio of end-to-end solutions in telecom and enterprise networks, devices, and cloud technology and services. Their ICT solutions, products, and services are used in more than 170 countries and regions, serving over one third of the world's population. With 180,000 employees, Huawei is committed to enabling the future information society, and building a better-connected world.

USI Education Technology

USI Education Technology is a Chinese company based in Shenzhen that offers professional solution to address smart education. In recent years, the company is active in responding to the Chinese government's initiative in enhancing the level of ICT application in education, which is to ensure universal access to ICT, quality learning materials and cyber learning space. Specifically, it has independently developed different prototypes of all-in-one classroom devices, portable audio and video recording products, smart terminal products, touch technology products, teaching software, and cloud platforms. Together these products offer convenience and security for schools across China to enhance their capacity of ICT application in teaching and learning. It is considered to be one of the top companies in China that address to the government's initiative.

XuetangX



XuetangX was founded by MOOC-CN Information Technology (Beijing) Co. Ltd. and the Chinese Ministry of Education Research Center for Online Education. XuetangX offers interactive MOOCs from the world's best universities, colleges, and organizations. For example, courses from Tsinghua, Fudan, MIT, Harvard, and many other universities can be taken here for free. It aims to provide advanced systematic education to the public and offer opportunities to every single Chinese citizen to enjoy the best education available around the world. Currently, it is also actively engaged in global partnerships to offer micro-degree programs and such.

CreateView Science Education

创显科教
Createview Edu-Tech

CreateView Optoelectronics Technology Co. Ltd. is a company based in Guangzhou that focuses on designing products for smart teaching, developing regional educational plans, offering teacher training services, providing big data added services, as well as devising comprehensive smart solutions for the educational sector. It has become one of the leaders of China's smart education service operators.

2.5 Summary of Workshop

The workshop intends to offer participants a chance to apply their learning into practice. In this particular session, participants worked in groups by country to design a micro-MOOC from the beginning to end, on the topic of ICT application in higher education in their respective countries and institutions. Each group followed the process of MOOC production as illustrated in Figure 15. Notably, the workshop received professional guidance and support from Lifu Technology & Media Company (Guangzhou).

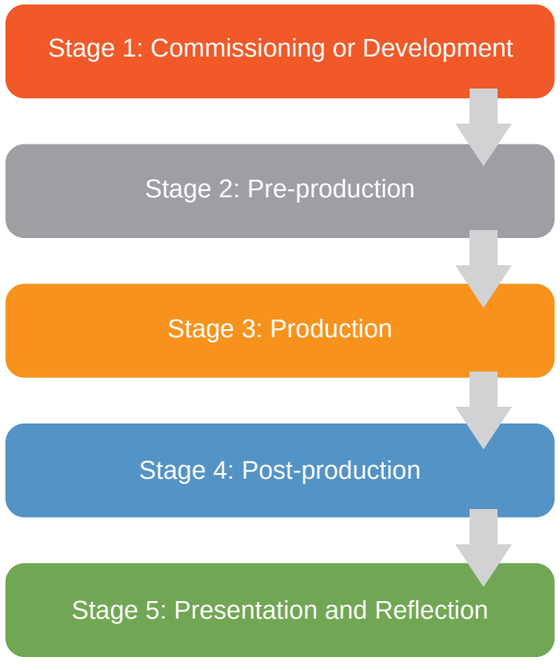


Figure 15 – Four Stages of MOOC Production[16]

[16]O'Donoghue, M. Producing Video for Teaching and Learning: Planning and Collaboration. London: 2014

2.6 Highlights of Cultural Activities

Cultural activities are an important part of the Seminar, aiming to provide the participants with the chance to understand China through its culture, language and history.

Splendid China

Forbidden City and Tian'anmen Square

Tea Ceremony Performance

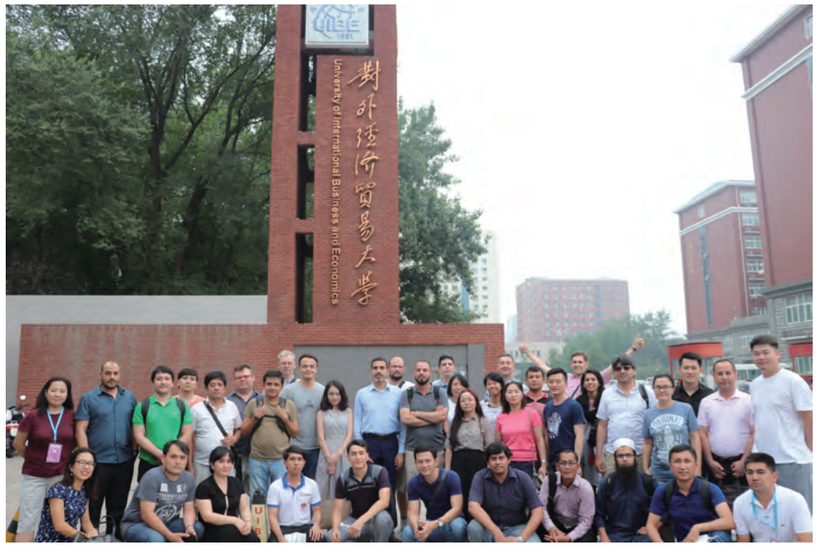
Experience of Chinese High-Speed Train

The Great Wall

Yellow Crane Tower

Southern University of Science and Technology (Shenzhen)

University of International Business and Economics (Beijing)



Huazhong Technology University (Wuhan)

Chapter 3

The Framework of MOOC Production

The Seminar sees the production of MOOC as the main focus and has designed the curriculum based on it. On the one hand, the process of producing MOOC itself is a process of understanding and practicing online learning. Participants need to plan, analyse, and make decisions first and then write scripts, shoot, rehearse, edit, and finalize. On the other hand, the content of MOOC surrounds ICT application in higher education in respective countries and gives participants an opportunity to reflect. Therefore, the content itself also presents an interesting case study of each country. The framework of MOOC production adopted in this Seminar is summarized in this chapter.

Stage 0: Input

Any output requires input. In the case of MOOC production, it is essential for participants to gain an overview of the context first. The seminars and lectures serve as the input for MOOC production, covering the topics related to its design, objectives, audience, pedagogy and so on.

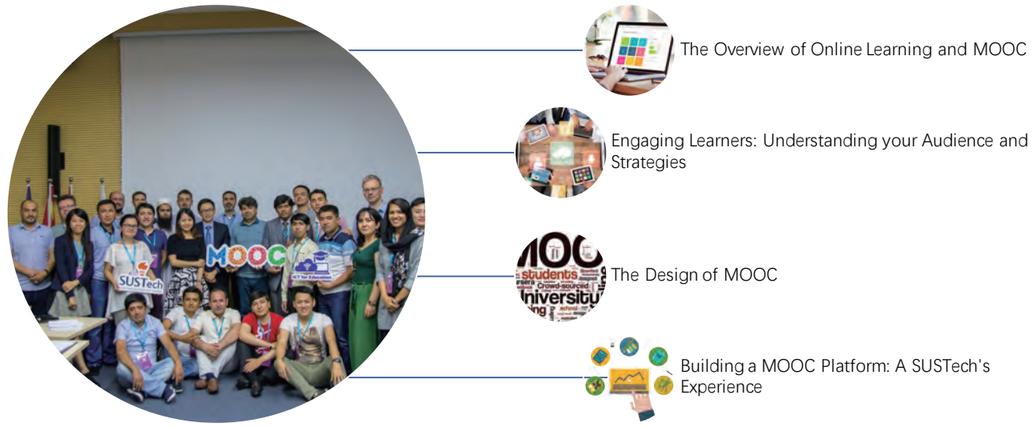


Figure 16 – Input

Stage 1: Commissioning

The objective of this stage is to encourage participants to brainstorm and draft a 'video pitch[17]'. According to Musberger, a video pitch is 'a concise, meaningful package that briefly explains the objectives of the production of the target audience, and the distribution method'[18]. This pitch signals the beginning of the production process as it transforms abstract ideas into something more concrete and lists relevant elements and objectives. It provides a useful way to discuss theidea for MOOC production, and can decide on whether the idea should be taken further or not. It enables participants to draw from their newly acquired knowledge of Online Learning and MOOC, and match it with the situations in their respective countries and institutions. This process usually requires collaboration with an experienced video producer.

[17]O'Donoghue, M. Producing Video for Teaching and Learning: Planning and Collaboration. London: 2014
[18]Musberger, R.B. Single-Camera Video Production, Fourth Edition. London: 2005

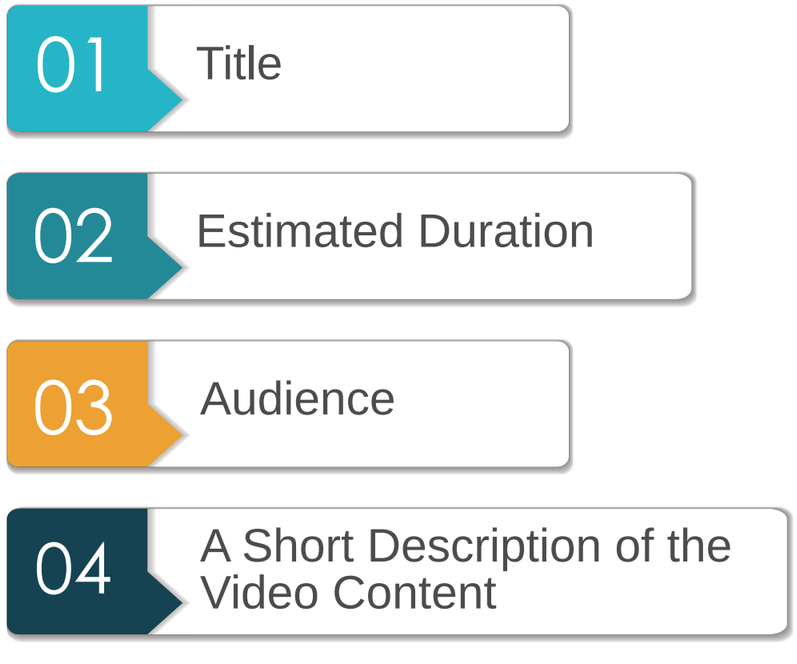


Figure 17 –The Elements of the Video Pitch Document

In addition, within the pitch document, there are four questions needed to be considered. The answers to these four questions will assist in the decisions on production approaches and resources later on.

1	What is to be learnt? - Specifying the learning goal or goals
2	How is this to be achieved? - Selecting a teaching and learning strategy
3	How will the video be used? - Selecting a context of use
4	What will the finished video look like? - Defining a visual format or genre

Table 4 – Questions to be Considered in the Video Pitch Document

Stage 2 Pre-production

The next stage of the process focuses on the identification and breakdown of the elements of the proposed video, which includes: aims, audience, narrative structure, personnel, and visualization. The critical step of this stage, 'treatment', is to plan and list of a number of sequences and requirements for each. It consists of a description of what will be seen and what will be heard for each sequence[19]. It shows how the sequence is connected and how the theme of the video progresses from one to the next. Meanwhile, the treatment allows different sequences listed to be ordered according to location or personnel involved, and can be easily turned into a shooting script. While in reality this process may prove to be time-consuming, expensive and even inflexible, it is likely to save time and effort in the later stages of production and prevent frustration and failure.

General Style: Energetic, with coordinated PTCs on run-through centre. Sequences between PTCs sped up; a little ragged with hand-held camera. Requires choreography and walk through.	
Image	Sound
1. Begin with caption with questions	Fade music in and caption fade to speeded-up camera motion entering the LSC.
2. Continue motion through entrance and on to the computer desks at a rear of entrance.	Angel's script as PTC. Music background.
3. Pull away to speeded-up section towards reception.	Judith's script as PTC. Music background.

Figure 18 – Sample of a treatment (adapted from O'Donoghue)[20]

In addition to the planning, there are also other elements that need to be considered, namely: visualization, location, talent selection, script production, and single/multi-camera production. These elements all need to be carefully elaborated and agreed upon by participants in this process before moving forward.

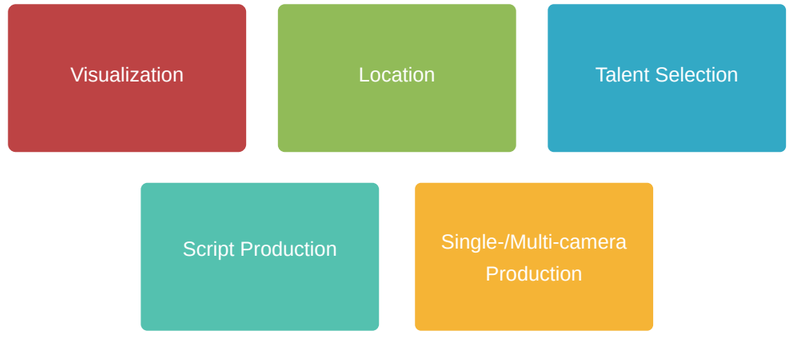


Figure 19 – Other Elements to be Considered in Pre-Production Stage

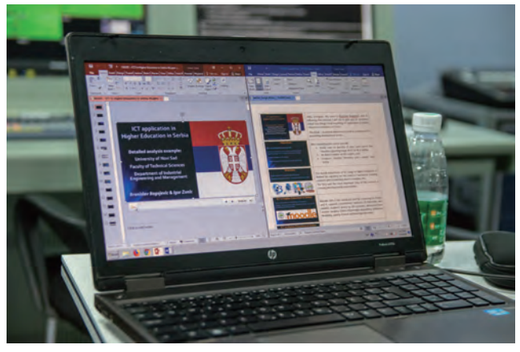
[19]Watts, H. On-Camera: Essential Know-How for Programme-Makers, Third Edition. AAVO: 1997
[20]O'Donoghue, M. Producing Video for Teaching and Learning: Planning and Collaboration. London: 2014

Stage 3 Production

Stage 3 is the point at which participants in groups, execute their production plans. As the execution phase progresses it is likely that even the most carefully thought out plans will need adjustment for different reasons and circumstances. Therefore, it is often considered the most exciting yet challenging stage among all for all participants. Based on the treatment and shooting script, everything is in place and will go accordingly. This is also the part to test if the preparations made in the pre-production stage make sense and are logical. Some of the steps in this stage involve the preparation of images, preparation of technologies, and familiarization with the location.

Preparation of Images

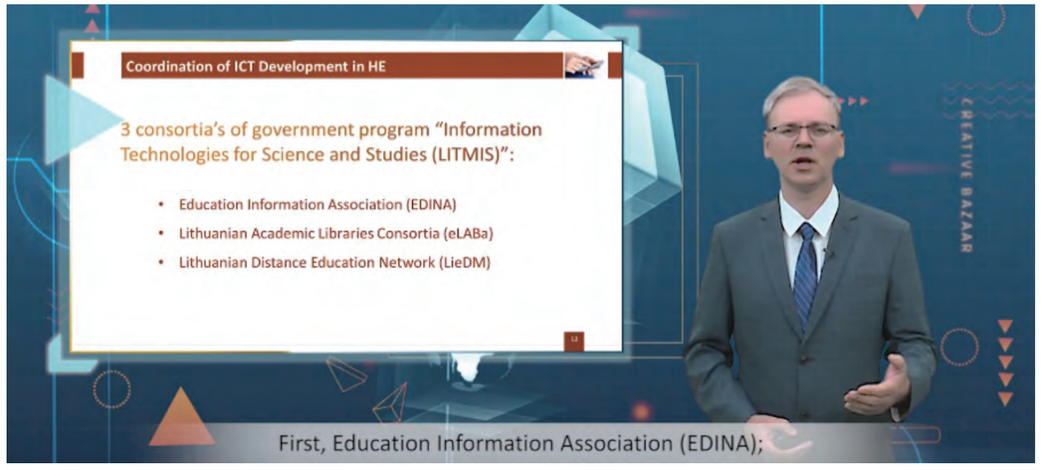
Preparation of Equipment and Propos



Familiarization with the location

Stage 4 Post-production

The fourth stage of this process is the post-production stage where the video sequences recorded are brought together and organized to address the narrative for the video. These may include the addition of captions and graphics and associated narrative audio recording. According to Watts, estimated ratios of editing time to shooting vary from 2:1 to 10:1 subject to the kind of project undertaken and the detail required[21]. There are various online guides and editing software which can be utilized in a range of ways.



Stage 5 Presentation and Reflection

Setting a date and time for the presentation of participant-produced video has a number of important benefits[22]. The notion of presentation makes the participants realize their videos will be seen by others. The possibility of an audience viewing and commenting can be a stimulus for motivation. It will offer a perspective on their work they might not have considered during the process. For example, a question from the audience may prompt the participants to reflect on their decision-making process and how different choices might lead to different outcomes. In this case, an organized, structured and constructive presentation session can offer more benefits than harm.

[21] Watts, H. On-Camera: Essential Know-How for Programme-Makers, Third Edition. AAVO: 1997
[22] O'Donoghue, M. Producing Video for Teaching and Learning: Planning and Collaboration. London: 2014

At the same time, reflection is an important element of the process from the learning viewpoint. Reflection is much more than asking questions like 'what did you learn from the process?', but to get the most of this activity though guided questions. Structured reflection may include some of the following components[23].

The finished product in terms of the aims set and strategy adopted to achieve this objective;
The audience response and any comments received in the presentation;
The group's perspective and understanding of the subject content of the video;
Their planning activities and where they would focus their efforts in order to improve their work;
The skills gained or developed as a result of production activities, including technical, interpersonal, management, communication, and problem-solving skills;
If they were asked to produce the video from top, what would they have done different.

Table 5 – Components of Structured Reflection

[23] O'Donoghue, M. Producing Video for Teaching and Learning: Planning and Collaboration. London: 2014

Chapter 4
Summary

The Seminar on ICT Application in Higher Education for Asian and European Countries was successfully closed on July 9th, 2018 at SUSTech. All 37 participants completed the 21-day training and received productive outcomes. During their time in China, they finished two-week of professional courses as well one week of site visits and cultural activities in Beijing, Wuhan, and Guangzhou.

Not only has the Seminar fully demonstrated the development and achievement made by China in the field of ICT application in higher education, but also facilitated participants in learning and understanding China's experiences. Additionally, UNESCO-ICHEI takes this opportunity to establish a global platform for continuous exchange and sharing.

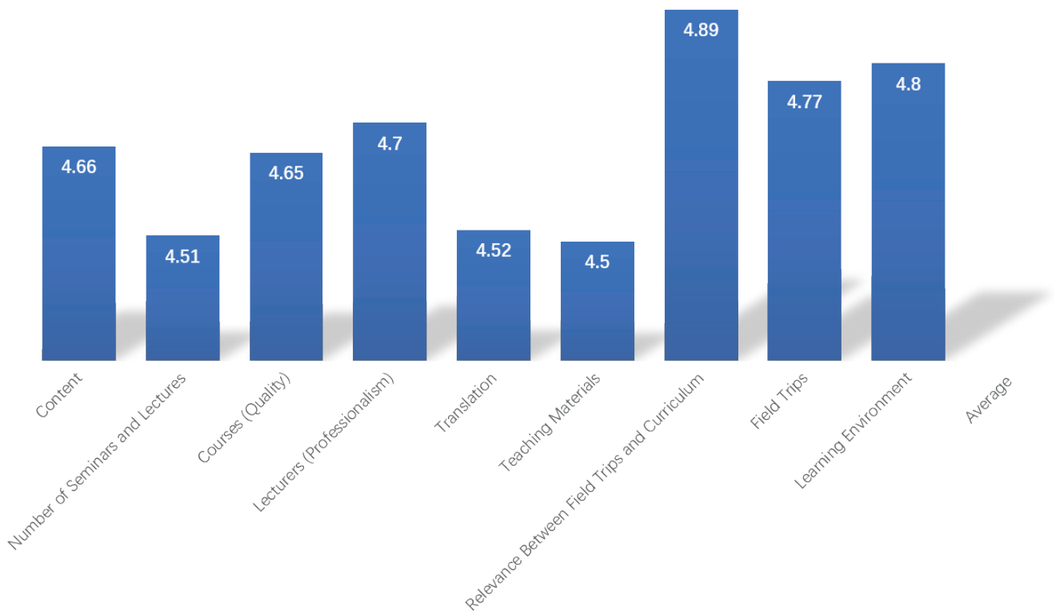
4.1 Evaluation and Feedback

Towards the end of the Seminar, participants were invited to take part in a questionnaire. It intended to collect evaluation and feedback from participants through 20 indicators in the areas of curriculum (45%), management (35%), and overall performance (20%). Together, they were used to provide an overview of participants' thoughts about the Seminar, offering useful insights for improvement in the future.

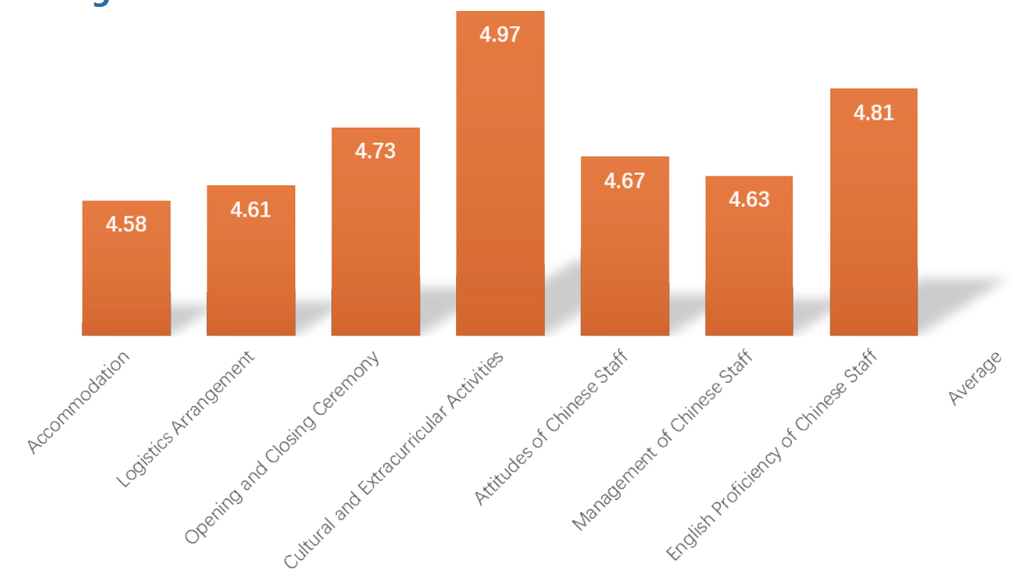
A total of 37 questionnaires was distributed and all were collected successfully. Overall, participants were very satisfied with the Seminar, with an average score of 94 out of 100. Specifically, 12 participants gave 100 out of 100. Among all, the aspect of curriculum was graded with the highest score (42/45), while management and overall performance received 33/35 and 19/20 respectively.

Each of the 20 indicators has received an average score of more than 4 out of 5. The three individual items with the highest satisfaction from the participants were cultural and extracurricular activities (4.97), the relevance between field trips and curriculum (4.89), and the English proficiency of Chinese staff (4.81). The indicators recorded with lowest scores were teaching materials (4.5), the number of seminars and lectures (4.51), and the level of translation (4.52). Based on this information, UNESCO-ICHEI will adjust accordingly in its future design and continue to enhance its capacity in specific areas.

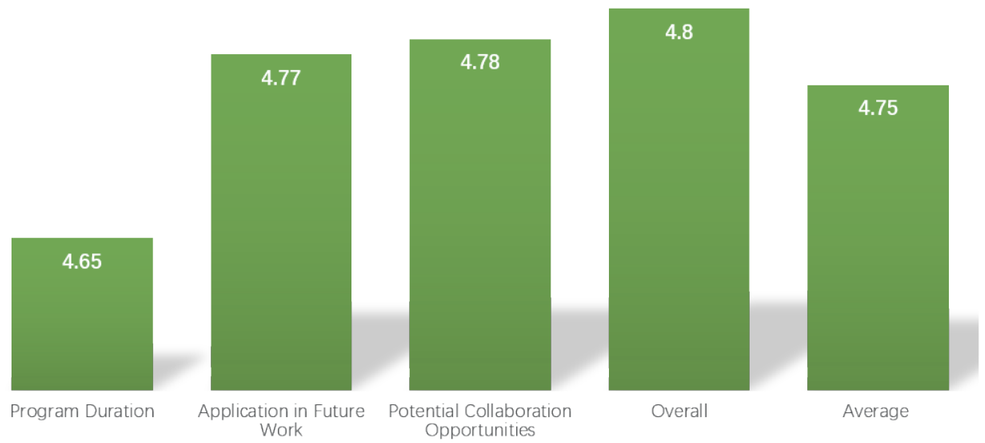
Curriculum



Management



Overall Performance



In addition to the questionnaire, there was an open-ended question section that encouraged participants to offer specific comments. It can be seen that most of the participants have benefited from this Seminar in terms of their understanding of the subject matter but also Chinese history and culture.

Participant	Comments	Suggestions
A	I am very impressed by China's rapid development and very fortunate to have the opportunity to see it personally. I hope to come back in the future!	I really like the overall arrangement of the Seminar, especially the ratios of seminars and field trips. Not too much nor too little.
B	The staff are very helpful, professional and polite. I really appreciate the chances to get in touch with some of the Chinese companies.	I wish the Seminar could be slightly longer so that I can get to see and know more about China!
C	Amazing Seminar! I really enjoyed my time in China, getting to see and learn so many things!	Maybe the Seminar could be two-week long instead of three-week long. It is hard for some of my colleagues to get approval for long-term leaves.
D	China is a very beautiful country. I am very happy during my stay here and have learnt a lot!	In terms of the courses, I would like to get introduced to more Chinse companies that specialized in ICT application in education.
E	I'm very happy to come to China – it's like a dream. There are a lot of lessons we can learn from China's rapid development in ICT application in higher education. We are grateful for such an opportunity.	I hope there would be more field trips in the future seminars.

4.2 Social Impacts

The Seminar also received attention from multiple press. In some of the interviews, participants shared their feelings and thoughts about the Seminar and China during their stay.


亚欧国家高校教育信息技术应用能力研修班到学堂在线参观学习

慕华学堂 6月25日

6月25日上午，由商务部主办，深圳市对外经济技术合作促进会承办，南方科技大学协办的商务部援外培训项目"2018年亚欧国家高校教育信息技术应用能力研修班"到学堂在线参观学习。此次研修班是面向"一带一路"沿线亚欧国家的项目，学员来自巴基斯坦、乌兹别克斯坦、立陶宛、巴勒斯坦、塞尔维亚、斯洛伐克、柬埔寨、蒙古、马来西亚9个亚欧发展中国家，涵盖各国教育主管部门官员、当地知名高校管理、科研及教学人员及从事高校信息技术研发的专业人员等。

研修班学员在学堂在线大屋前合影


深圳市经济贸易和信息化委员会

20国教育专家齐聚深圳 "一带一路"信息技术援外班开班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2018年亚欧国家高校教育信息技术应用能力研修班近日在广州进行参观考察。在广州番禺区，研修班30多位高校老师参观一家智慧教育云服务平台公司，这家公司研发制造教育行业智能教学终端产品，并发各类教学应用软件系统，开展区域教育规划设计和教师培训服务，已发展成为中国领先的智慧教育服务运营商。

4.3 Follow-ups

As the Seminar came to an end, the interaction among participants and UNESCO-ICHEI continued. Participants still keep in touch with UNESCO-ICHEI through various social media channels. Additionally, we have been made aware that some of the participants were invited to participate in events organized by Chinese embassies in respective countries.

4.4 Conclusion

The Seminar has received positive feedback from participants and various stakeholders. Inspired by this, UNESCO-ICHEI and CHER are committed to co-organizing more capacity building seminars on the topics of ICT Application in higher education. At the same time, we will invite top Chinese enterprises like Huawei, XuetangX and CreateView Education Science to co-develop curriculum.

HUAWEI

学堂在线 xuetangx.com

创显科教 Createview Edu-Tech

Appendix

A. Participants

Image	Name	Institute	Title
	Sopheak Pen	Ministry of Education, Youth and Sport, Cambodia	Vice Chief of the Informal Education & E-Learning Office
	Tongsreng Peng	Ministry of Education, Youth and Sport, Cambodia	Officer of the Information Technology Services Office
	Sokchea Kor	Royal University of Phnom Penh, Cambodia	Lecturer and Researcher
	Sovanndara Var	Royal University of Phnom Penh, Cambodia	Lecturer and Researcher
	Saulius Preidys	Vilnius University, Lithuania	E-learning technology expert
	Ramunas Kubiliunas	Kaunas University of Technology, Lithuania	Lecturer and Study Programmes Director
	Gytis Cibulskis	Kaunas University of Technology, Lithuania	Head of E-learning Technology Centre
	Yee Yong Pang	Southern University College, Malaysia	Assistant Professor of Computer Science
	Yuen Ling Ng	Southern University College, Malaysia	Assistant Director of Academic Affairs and Registration Office

Image	Name	Institute	Title
	Myagmarsaikhan Purevdofj	Institute of Philosophy, Mongolia	Research Fellow
	Narantungalag Erdenechuluun	Mongolian National University of Education, Mongolia	Teacher
	Shinetsetseg Otgonsuren	Mongol Aspiration High School, Mongolia	Teacher
	Narankhuu Lkhagva	Mongolian State University of Arts and Culture, Mongolia	Instructor
	Baljinnyam Baatarpurev	Mongolian National University of Medical Sciences, Mongolia	Senior officer and Educator of E-Learning Center

Image	Name	Institute	Title
	Ajab Khan	University of Malakand, Pakistan	Assistant Professor/ Manager (Research Development)
	Shahram Atta Chaudhry	Quaid-I-Azam University, Pakistan	Deputy Registrar(Establishment)
	Noreen Zahra	Virtual University of Pakistan, Pakistan	Assistant Professor
	Muhammad Tahir Naeem	University of Engineering and Technology at Lahore, Pakistan	Research Officer
	Imad Abudi Tartir	Birzeit University, Palestine	Assistant Director, Instructor

Image	Name	Institute	Title
	Ahmad I M Bearat	Birzeit University, Palestine	Maintenance Technician
	Alaa M A Mohammed	Birzeit University, Palestine	Software Engineer
	Igor Zunic	University of Novi Sad, Serbia	System Administrator – Educational Technologist
	Branislav Bogojevic	University of Novi Sad, Serbia	System Administrator – Educational Technologist
	Daniel Krajcik	University of Economics in Bratislava, Slovakia	Assistant Professor, Vice-dean

Image	Name	Institute	Title
	Rashid Tojiboev	The State Inspection for Supervision of Quality in Education under the Cabinet of Ministers the Republic of Uzbekistan	Chief Specialist
	Sarvar Muminov	The Center of develop-ment multimedia educational programs under Ministry of Public Education, Uzbekistan	Deputy Director
	Sherzod Mukham-madjonov	Tashkent University of Information Technolo-gies named after Mukhammad al-Khwarizmi, TASH-KENT	Assistant
	Khusanboy Ismalov	The state inspection for supervision of quality in education under the Cabinet of Ministers of the Republic of Uzbeki-stan	Leading Specialist
	Zebo Isakova	National Agency of Project Management under the President of the Republic of Uzbeki-stan	Chief Specialist

Image	Name	Institute	Title
	Bakhrom Ibrokhimov	Tashkent university of information technologies named after Mukhammad al-Khwarizmi	Vice Dean of Software Engineering Faculty
	Sanjar Eshkobilov	In-service and Retraining Institute of Management and Specialist Personnel of Public Education System named after A.Avloni	SENIOR TEACHER
	Nilufar Azamova	The Center of development multimedia educational programs under Ministry of Public Education	Programmer Designer
	Arslonbek Rakhmankulov	The Ministry of public education of the Republic of Uzbekistan	Head of the department
	Nasurullo Baltabaev	Centre for implementation of E-learning in educational institutions under the Ministry of higher and secondary specialized education of the Republic of Uzbekistan	Head of the innovation projects and perspective development department

Image	Name	Institute	Title
	Shavkiddin Adashboyev	Head scientific and methodological center for professional development of academic and executive staff in higher education the Ministry of higher and secondary specialized education of the Republic of Uzbekistan	Head Of The Distance Learning And The Introduction Of Modern Teaching, Information Technology Department
	Anvar Karimov	Ministry of higher and secondary specialized education of the Republic of Uzbekistan Samarkand Institute of economics and service	Teacher
	Valeriy Lee	National Agency of Project Management under the President of the Republic of Uzbekistan	Head of Division

B. Introduction of the Organizers

1. UNESCO International Centre for Higher Education Innovation

Established by UNESCO and the Shenzhen municipal government, the UNESCO International Centre for Higher Education Innovation (UNESCO-ICHEI) is an UNESCO Category 2 centre, approved at the 38th UNESCO General Conference in November 2015. It is the tenth Education Sector UNESCO Category 2 centre in the world, and also the first Category 2 centre for higher education in China.

Relying on the advantages of Shenzhen's ICT sector and drawing upon China's experience with the massification of its higher education, UNESCO-ICHEI aims to meet the local demand for quality higher education resources and to support Asian and African countries to improve the quality of higher education and promote educational equity. With the above aims, UNESCO-ICHEI has been carrying out higher education cooperative projects with countries along the 'Belt and Road' Initiative. Through various forms of knowledge sharing and capacity building, UNESCO-ICHEI exports Shenzhen's ICT products and services to the project countries to provide with them intellectual support and human resources for local industrialization and informatization. Meanwhile, UNESCO-ICHEI conducts research on education in the countries along the 'Belt and Road' Initiative, aiming to become an influential educational think-tank and an international higher education platform for information sharing and communication on innovative thoughts and practices.

The essence of education is to make people 'learn to know, learn to do, learn to live together, and learn to be[24].' Thinking independently in the spirit of freedom is the meaning of 'University' – by deepening one's knowledge to inspire thinking and competency beyond the knowledge learned, and to promote the development of society. Since its establishment, UNESCO-ICHEI has always believed that 'higher education can transform the world' and has continued efforts in knowledge production, capacity building, technical support, and information sharing. In the future, UNESCO-ICHEI will continue to serve member states by narrowing the digital gaps between developed and developing countries in the field of higher education.

[24]UNESCO. Delors, Jacques et al. Learning: The Treasure Within. Paris: 1996

2. Center for Higher Education Research of Southern University of Science and Technology

Founded in June 2015, Center for Higher Education Research (CHER) is an independent teaching and scientific unit at Southern University of Science and Technology (SUSTech) in Shenzhen, China. Despite its short history, SUSTech is determined to reform Chinese tertiary education and become a top-notch international research university. In seven short years, SUSTech is becoming the important epicentre for China's science and technology academic research and for the cultivation of innovative minds. The rapid ascent of SUSTech onto the global stage is remarkable.

With this vision in mind, CHER roots itself in the innovative practice of international higher education, and undertakes higher education research, training and cultivation of graduates. It is determined to fulfil its functions to produce new knowledge, share information, enhance capacity building and provide technical support in the interconnected global community, supporting SUSTech to become an innovative pioneer of the future education for China.

The fields of research CHER conducts in focus on innovative talent cultivation, faculty capacity building, online education, and quality assurance. By means of comparative study, CHER learns from the practice and achievement of the world's top research universities, and generates systematic conclusion and summary on their practical experience, thus providing SUSTech with decision-making reference.

C. Seminar Secretariat

Image	Introduction
	**Ms. Xiaotong (Sherry) DUAN** Programme Officer, Asia-Pacific Programme Office, UNESCO-ICHEI duanxt@ichei.org Sherry holds a Master's degree in International Educational Development from Teachers College, Columbia University and a Bachelor's degree in English Literature and Education from the Education University of Hong Kong. She has worked in the U.S., Hong Kong and China in higher education institutions, think tanks, and non-governmental organizations. Prior to UNESCO-ICHEI, she has been with Education Development Center, Global Poverty Project, Ivanka Trump and United Nations, just to name a few.
	**Ms. Fan LI** Programme Officer, Asia-Pacific Programme Office, UNESCO-ICHEI fanli@ichei.org Fan has studied Educational Technology at the University of Manchester (UK) for her Master's Degree, and Measurement Technology and Control for her Bachelor's Degree in China. Before join UNESCO-ICHEI, she worked with International Organizations, such as UNESCO Asia-Pacific Network for International Education and Values Education (UNESCO APNIEVE) and UNESCO Asia-Pacific Bureau for Education (UNESCO Bangkok) with funding supported by China Scholarship Council.
	**Mr. Xiangzheng (Tim) TANG** Programme Officer, Asia-Pacific Programme Office, UNESCO-ICHEI tangxz@ichei.org Tim joined UNESCO-ICHEI in 2016 and has been mostly working on partnership with enterprises. He holds a Bachelor's degree in Computer Science in Nanjing University of Aeronautics and Astronautics. Before joining UNESCO-ICHEI, Tim has held various positions in National University of Defense Technology and a few top IT companies in China.
	**Ms. Wei (Ivy) YE** PhD Student, University of Hong Kong Ivy is currently a PhD student in the Joint Educational Programme between the University of Hong Kong and Southern University and Science and Technology. Her research interests include China's educational aid to less developed countries, international relations in higher education, international and comparative education. With strong interests in education and international relations, Ms.YE has studied and worked in 8 universities in mainland China, Taiwan, Singapore and the U.S. Her expertise includes educational programme developing & management, and policy analysis.

D. Agenda

PRE-DAY	Monday, 18 June 2018
12:00 – 17:00	Registration Venue: Lobby, Proudway Hotel
DAY 1	**Tuesday,19 June 2018**
09:00 – 12:00	Orientation Venue: Conference room, Proudway Hotel **Overview & Ice-breaking Activities** - Ms. Sherry DUAN, Programme Officer, UNESCO-ICHEI - Ms. Fan LI, Programme Officer, UNESCO-ICHEI - Mr. Tim TANG, Programme Officer, UNESCO-ICHEI
12:00 – 14:00	Lunch Break
14:00 – 17:00	Study Tour: Huawei
DAY 2	**Wednesday, 20 June 2018**
09:30 – 11:30	Opening Ceremony Venue: Auditorium, Faculty Research Building 1, SUSTech **Opening** - Moderator: Prof. Jianhua Zhao, Senior Specialist, UNESCO-ICHEI **Welcome Address** - Prof. Tao Tang, SUSTech - Prof. Ming LI, UNESCO-ICHEI - Ms. Danmei Li, Economy, Trade and Information Commission of the Shenzhen Municipality - Mr. Xiangdong FAN, APIETC Shenzhen
11:30 – 12:00	Group Photo
12:00 – 14:00	LUNCH BREAK

14:00 – 17:00	Overview Session Venue: International Conference Hall **The Past, Present and Future of MOOCs – An Overview** - Prof. Khe Foon HEW, Associate Professor, Faculty of Education, University of Hong Kong
DAY 3	**Thursday, 21 June 2018**
09:00 – 12:00	Lecture Venue: International Conference Hall **Knowing the basics of MOOCs: The Audience and The Strategies** - Prof. Khe Foon HEW, Associate Professor, Faculty of Education, University of Hong Kong Coffee &Tea break included
12:00 – 14:00	Lunch Break
14:00 – 17:30	Lecture Venue: International Conference Hall **Hands-on Workshop: Putting It Together** - Prof. Khe Foon HEW, Associate Professor, Faculty of Education, University of Hong Kong Coffee &Tea break included
DAY 4	**Friday, 22 June 2018**
09:00 – 12:00	Understanding China Venue: International Conference Hall **Chinese Language and Culture** - Ms. Nancy Kang Coffee &Tea break included
12:00 – 14:00	LUNCH BREAK
14:00 – 17:00	Study Tour: USI Technology

DAY 5	**Saturday, 23 June 2018**
09:00 – 12:00	**Self-directed Reflection** - Ms. Sherry DUAN, Programme Officer, UNESCO-ICHEI - Ms. Fan LI, Programme Officer, UNESCO-ICHEI
12:00 – 14:00	LUNCH BREAK
14:00 onwards	City Tour: Splendid China
DAY 6	**Sunday, 24 June 2018**
Morning	Departure for Beijing (By Air)
12:00 – 14:00	LUNCH BREAK
14:00 – 17:00	City Tour: The Landscape of Beijing
DAY 7	**Monday, 25 June 2018**
09:00 – 12:00	Study Tour and Workshop: XuetangX
12:00 – 14:00	LUNCH BREAK
14:00 – 17:00	Cultural Visit: Chinese Acrobatic Performance
DAY 8	**Tuesday, 26 June 2018**
09:00 – 12:00	Understanding China Venue: Conference Room, Hotel **ICT in Chinese Higher Education** - Dr. Xuelin Shi, Deputy-dean of Digital Education Institute, People's Education Press
12:00 – 14:00	LUNCH BREAK

14:00 – 18:00	Site Visit: World Heritage – Forbidden City & Tiananmen Square
DAY 9	**Wednesday, 27 June 2018**
09:00 – 18:00	Site Visit: World Heritage – The Great Wall
DAY 10	**Thursday, 28 June 2018**
Morning	Departure to Wuhan (By High Speed Train)
12:00 – 14:00	LUNCH BREAK & CHECK-IN
14:00 – 17:00	Rest & Free Time
DAY 11	**Friday, 29 June 2018**
09:00 – 12:00	Campus Tour and Workshop: Huazhong University of Science and Technology
12:00 – 14:00	LUNCH BREAK
14:00 – 17:00	Study Tour: Guanggu Exhibition Hall
DAY 12	**Saturday, 30 June 2018**
10:00 – 12:00	Site Visit: World Heritage – Yellow Crane Tower
12:00 – 14:00	LUNCH BREAK
14:00 onwards	Site Visit: Hubei Provincial Musuem

DAY 13	**Sunday, 1 July 2018**
Morning	Return to Shenzhen (By Air)
Afternoon	Check into Hotel and Self-directed Reflection
DAY 14	**Monday, 2 July 2018**
09:00 – 12:00	Seminar Venue: 401 Conference Room, Administrative Building **SUSTech' s experiences: Building a MOOCs platform** - Dr. Yuan LI, Deputy Director, Teaching Department, Southern University of Science and Technology Coffee &Tea break included
12:00 – 14:00	LUNCH BREAK
14:00 – 17:00	Study Tour: UOOC & Shenzhen University
DAY 15	**Tuesday, 3 July 2018**
09:00 – 12:00	Seminar Venue: International Conference Hall **A Comparison of Global MOOCs Platforms** - Mr. Lei ZHOU, Lifu - Ms. Sherry DUAN, Programme Officer, UNESCO-ICHEI
12:00 – 14:00	LUNCH BREAK
14:00 – 17:00	Seminar Venue: International Conference Hall

	Learning through a Case: Turning Your Ideas into A Script - Mr. Lei ZHOU, Lifu - Ms. Sherry DUAN, Programme Officer, UNESCO-ICHEI
DAY 16	**Wednesday, 4 July 2018**
09:00 – 12:00	Workshop Venue: MOOC Production Center
	Learning by Doing 1: Shooting your Micro-Lesson (Group) - Mr. Lei ZHOU, Lifu - Ms. Sherry DUAN, Programme Officer, UNESCO-ICHEI
12:00 – 14:00	LUNCH BREAK
14:00 – 17:00	Workshop Venue: MOOC Production Center
	Learning by Doing 2: Shooting your Mirco-Lesson - Mr. Lei ZHOU, Lifu - Ms. Sherry DUAN, Programme Officer, UNESCO-ICHEI
DAY 17	**Thursday, 5 July 2018**
09:00 – 12:00	Workshop Venue: Room 404, Lychee Building No.6
	Learning by Doing 3: Editing your Mirco-Lesson - Mr. Lei ZHOU, Lifu - Ms. Sherry DUAN, Programme Officer, UNESCO-ICHEI - Ms. Fan LI, Programme Officer, UNESCO-ICHEI - Mr. Tim TANG, Programme Officer, UNESCO-ICHEI
12:00 – 14:00	LUNCH BREAK
14:00 – 17:00	Workshop Venue: Room 404, Lychee Building No.6
	Learning by Doing 4: Editing your Mirco-Lesson - Mr. Lei ZHOU, Lifu - Ms. Sherry DUAN, Programme Officer, UNESCO-ICHEI - Ms. Fan LI, Programme Officer, UNESCO-ICHEI - Mr. Tim TANG, Programme Officer, UNESCO-ICHEI
DAY 18	**Friday, 6 July 2018**
09:00 – 18:00	Study Tour: CreateView Science-Education & Guangzhou University Town
DAY 19	**Saturday, 7 July 2018**
09:00-12:00	Workshop Venue: International Conference Hall
	Group Discussion: Final Editing & Preparation for Showcase - Ms. Sherry DUAN, Programme Officer, UNESCO-ICHEI - Ms. Fan LI, Programme Officer, UNESCO-ICHEI - Mr. Tim TANG, Programme Officer, UNESCO-ICHEI
12:00 – 14:00	LUNCH BREAK
14:00 – 17:00	Free Time
DAY 20	**Sunday, 8 July 2018**
09:00 – 12:00	Workshop Venue: Room 404, Lychee Building No.6

	Showcase of Seminar Outcome & Closing Ceremony - Moderator: Prof. Jianhua ZHAO, Senior Specialist, UNESCO-ICHEI **Closing Remarks** - Mr. Fengliang LI, SUSTech - Prof. Ming LI, UNESCO-ICHEI - Mr. Xiangdong FAN, APIETC Shenzhen **Completion of the Seminar certificate** - Facilitator: Prof. Ming Li, ICHEI
12:00 – 14:00	LUNCH BREAK
14:00 – 17:00	Workshop Venue: International Conference Hall **Reflection and Evaluation** - Ms. Sherry DUAN, Programme Officer, UNESCO-ICHEI - Ms. Fan LI, Programme Officer, UNESCO-ICHEI - Mr. Tim TANG, Programme Officer, UNESCO-ICHEI
17:00 – 21:00	Cultural Night **Dinner and Cultural Exchange Performance**
DAY 21	**Monday, 9 July 2018**
Whole Day	**Departure from Shenzhen (By Air)**