

# Chapter Titles, Abstracts, and Contributor Bios

## *MOOCs and Open Education in the Global South: Challenges, Successes, Opportunities*

Ke Zhang, Curtis J. Bonk, Thomas C. Reeves, and Thomas H. Reynolds

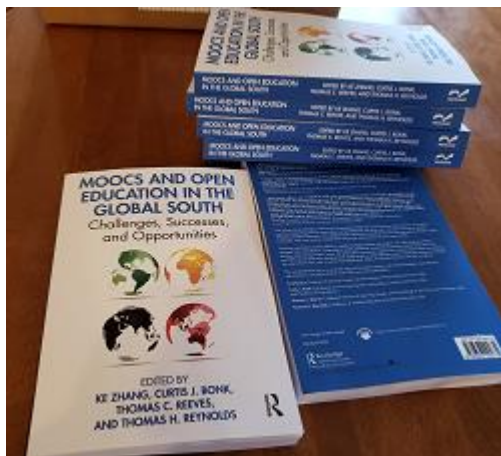
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**Dedication:** This book is dedicated to Fred Mulder, Emeritus Professor and Rector of the Open University of the Netherlands as well as the first UNESCO chair on Open Educational Resources. Fred was a visionary pioneer whose legacy in the Open Education field will continue to have impact for many years to come.

## Opening Matter: Foreword, Preface, and Chapter 1

### Foreword:

- Mimi Miyong Lee, Professor, University of Houston

**Abstract.** This masterfully crafted book, *MOOCs and Open Education in the Global South* edited by Ke Zhang, Curt Bonk, Tom Reeves, and Tom Reynolds, offers keen insights into local practices and initiatives across a broad range of content and approaches throughout the Global South. The powerful and provocative stories curated in this volume demonstrate how MOOCs and OER can be effectively translated and interpreted in vastly different ways in particular settings, as detailed by experts from Asia, Latin America, the Middle East, Africa, the Pacific/Oceania, and the Caribbean. Evident in the assorted accounts of MOOC and OER application and impact chronicled in this volume is the powerful benefit such narratives hold for policy makers, instructional designers, practitioners, administrators, and other MOOC and OER community stakeholders.



**Mimi Miyoung Lee** is Professor in the Department of Curriculum and Instruction at the University of Houston (UH). She received her Ph.D. in Instructional Systems Technology from Indiana University at Bloomington in 2004. She is an expert in critical ethnography and design-based research as well as online, flexible, and open forms of learning. Mimi has published research on STEM-related professional development programs, global and multicultural education, cross-cultural training research, interactive videoconferencing, woman leaders in Asia, self-directed learning from MOOCs and opencourseware (OCW), and emerging learning technologies such as wikis. Dr. Lee was co-editor of “*MOOCs and Open Education Around the World*” published by Routledge in 2015 which was awarded the 2016 AECT DDL Distance Education Book Award. At the same time, Mimi led a special issue of the *International Journal on E-Learning* on MOOCs and Open Education which simultaneously was published as a book by AACE. She may be contacted at [mlee7@uh.edu](mailto:mlee7@uh.edu).

### **Preface: MOOCs and Open Education—Wandering and Winding Our Way to Today**

- Curtis J. Bonk, Professor, Indiana University
- Ke Zhang, Professor, Wayne State University
- Thomas C. Reeves, Professor Emeritus, The University of Georgia
- Thomas H. Reynolds, Professor, National University

**Abstract:** At the start of the preface, Curt Bonk, Indiana University, Ke Zhang, Wayne State University, Tom Reeves, The University of Georgia, and Tom Reynolds, National University, discuss the different paths taken that led to this particular book on *MOOCs and Open Education in the Global South*. Next, these authors provide an historical overview of the movement toward open education since the mid-1990s via an analysis of the in-roads made in terms of open educational resources (OER) and opencourseware (OCW). Highlighting that the current age of learning is increasingly reliant on the sharing of educational contents and resources, the authors next provide an overview of how massive open online courses (MOOCs) arose and evolved. Specific data on MOOC enrollments and course offerings from 2014 to 2018 are provided along with information on popular MOOC topics, formats, and specializations. In addition, different chapters of the book are linked to specific topics, issues, goals, initiatives, challenges, and developments related to MOOCs and open education in the Global South. Finally, the book editors detail how this comprehensive volume was initiated and assembled. In wandering and winding our way to today, the preface is meant to provide the overarching context for this book in terms of the chapter contributors, historical underpinnings of MOOCs and open education in the Global South, and the volume’s intended goals and perspectives.



**Curtis J. Bonk** is Professor at Indiana University teaching psychology and technology courses. He can be contacted at [cjbonk@indiana.edu](mailto:cjbonk@indiana.edu) and his homepage is at <http://curtbonk.com/>



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**Thomas H. Reynolds** is a professor of Teacher Education at National University in La Jolla, California. He can be contacted at [treynold@nu.edu](mailto:treynold@nu.edu).

## **Chapter 1. MOOCs and Open Education in the Global South: Successes and Challenges**

- Ke Zhang, Professor, Wayne State University
- Curtis J. Bonk, Professor, Indiana University
- Thomas C. Reeves, Professor Emeritus, The University of Georgia
- Thomas H. Reynolds, Professor, National University

**Abstract:** This chapter provides an overview of the landscape of MOOCs and OER in the Global South, while highlighting the prevailing challenges and various cases of success in many different countries. It summarizes the content in the 28 book chapters, identifies the regions and countries covered by each chapter, and clearly specifies the main topics and foci of each chapter. Also featured in this chapter are selected national initiatives, international projects, systematic literature reviews, and empirical studies as well as the various design and development frameworks and applications that are utilized. The chapter showcases some of the most impactful projects, policies, and practices in the Global South. Perhaps most importantly, this chapter raises striking questions for readers from across the world and discusses in detail on how the Global South leverages MOOCs and open education for sustainable development and transformative education.



**Ke Zhang** is a Professor in Learning Design and Technology at Wayne State University in Detroit, Michigan, USA. As a multi-lingual, international educator and researcher, her work focuses on e-learning, innovative technologies and emerging methods for research and development. Her collaborative research is supported by federal government and agencies, like the US Department of Health and Human Services and National Institute of Health, as well as private foundations, with multi-million grants to design, develop and research on emerging technologies for education, professional development, and health information management. Dr. Zhang is also a popular speaker and consultant in Asia, Eurasia, the Middle East, Latin America and North America. She has consulted for large scaled projects and initiatives by international organizations, national governments and agencies, corporations, educational institutions and healthcare systems in the USA and overseas. Inquiries are welcome by email to: [ke.zhang@wayne.edu](mailto:ke.zhang@wayne.edu).



**Curtis J. Bonk** is Professor at Indiana University teaching psychology and technology courses. He is a passionate and energetic speaker, writer, educational psychologist, instructional technologist, and entrepreneur as well as a former certified public accountant and corporate controller. He has published more than 340 manuscripts and spoken in dozens of countries around the world. Among his numerous research and teaching awards are the Cyberstar Award, the Charles Wedemeyer Award for Outstanding Practitioner in Distance Education, the AACE Fellowship Award, and the Online Learning Journal Outstanding Research Achievement Award in Online Education. Bonk has been annually named among the top 100 contributors to the public debate about education from more than 20,000 university-based academics. He has authored a dozen books including, *The World Is Open*, *Empowering Online Learning*, *The Handbook of Blended Learning*, *Electronic Collaborators*, *Adding Some TEC-VARIETY* which is free (<http://tec-variety.com/>), and, *MOOCs and Open Education Around the World* (<http://www.moocsbook.com/>). He can be contacted at [cjbonk@indiana.edu](mailto:cjbonk@indiana.edu) and his homepage is at <http://curtbonk.com/>.



**Thomas C. Reeves** is Professor Emeritus of Learning, Design, and Technology at The University of Georgia. Professor Reeves has designed and evaluated numerous interactive learning programs and projects. In recognition of these efforts, in 2003 he received the AACE Fellowship Award, in 2010 he was made an ASCILITE Fellow, and in 2013 he received the AECT David H. Jonassen Excellence in Research Award. His books include *Interactive Learning Systems Evaluation* (with John Hedberg), a *Guide to Authentic E-Learning* (with Jan Herrington and Ron Oliver), and *Conducting Educational Design Research* (with Susan McKenney). His research interests include evaluation, authentic tasks for learning, educational design research, and educational technology in developing countries. He can be reached at [reeves@uga.edu](mailto:reeves@uga.edu) and his homepage can be found at <http://www.evaluateitnow.com/>.



**Thomas H. Reynolds** is a professor of Teacher Education at National University in La Jolla, California where he researches design of online learning, standards-based online assessment, and innovations in e-learning. Among his awards and honors are two Fulbright Scholar awards (2010 in Colombia where he researched open educational resources and 1998 in Peru where he lectured on Web-based learning and technology-enhanced instruction), a Texas A&M University honored faculty recognition, director and co-principle investigator of a multi-million dollar center for professional development and technology, and, in 2016, the First Place Book Award from the AECT Division of Distance Education (DDL) for “*MOOCs and Open Education Around the World*” that was co-edited with Mimi Lee, Curt Bonk, and Tom Reeves and published by Routledge. Present activities and responsibilities include research on the status e-learning in Latin America and academic program direction of an e-teaching master’s degree at National University. He can be contacted at [treynold@nu.edu](mailto:treynold@nu.edu).

## Section 1: Historical Perspectives

### Chapter 2. An Historical Journey into K-MOOCs Leading to Possible Collaborations with North Korea

- Yong Kim, Dept., of e-Learning, Korea National Open University (KNOU), Korea
- Ock Tae Kim, Korea National Open University (KNOU), Dept. of Media Arts and Sciences, Korea
- Jin Gon Shon, Department of Computer Science, Korea National Open University (KNOU), Korea

**Abstract:** This chapter provides an introduction to Korean massive open online courses (K-MOOCs). The authors explain when, why, and how K-MOOCs have been opened and it reports the general usages of MOOCs in Korea, quality management of K-MOOCs, and several contributions of K-MOOCs to Korean learners. In addition, this chapter details the history and evolution of distance learning in North Korea, which has recently attempted to become involved as a member of the international community with possible nuclear disarmament in order to achieve rapid economic development. This interesting chapter describes the current situation of South and North Korea as well as the historical transition of North Korean distance higher education. It also proposes a probable plan of educational exchange between South and North Korea by assigning a new innovative role to K-MOOCs.



**Yong Kim** received a B.S. degree in education and a M.S. in computer education from Korea National University of Education and his Ph.D. degree in computer education from Korea University. He had worked for KERIS since 1997. Dr Kim has over 20-years of research experience in e-learning and computer education. Since 2010, he has been with the Department of e-Learning, graduate school, Korea National Open University. His research interests are not limited to e-learning such as LMS/LCMS, educational contents and mobile computing, but also computer education such as educational programming languages



**Ock Tae Kim** is an assistant professor in the Department of Media Art and Science at Korea National Open University. He has a PhD in Telecommunications from Indiana University at Bloomington. His scholarship focuses on the intersections among media effects on individuals and society, communication technology, and educational psychology. His work has appeared in a number of conferences and journals in Korea and abroad.



**Jin Gon Shon** received a BSc degree in mathematics and MS and PhD degrees in computer science from Korea University in Seoul, Korea. Since 1991, he has been with the Department of Computer Science at Korea National Open University (KNOU). He was a visiting scholar at the State University of New York (SUNY) at Stony Brook (1997), Melbourne University (2004), and Indiana University at Bloomington (2013). Professor Shon established the Department of e-Learning in KNOU providing the first master's degree program on e-learning in Korea. He has published over 40 scholarly articles in noted journals and has written several books on computer science and e-learning.

### **Chapter 3. Current State of Practice and Research on MOOCs in Mainland China: A Critical Review**

- Jianli Jiao, Professor of Educational Technology, Director of Future Education Research Centre, Deputy Dean of School of Information Technology in Education, School of Information Technology in Education, South China Normal University, Guangzhou, China
- Yibo (Jeremy) Fan, Doctoral Student, Boise State University

**Abstract:** This chapter reports the MOOC development in mainland China with the aim to provide an overview of its current state of practice and research. First, the mainstream MOOC platforms were introduced in a chronological order. Second, in an attempt to depict a general picture of Chinese MOOC learners, the data generated in “English Teaching and Internet” MOOC developed by Dr Jianli Jiao and his team were analyzed. This analysis was indicated that the majority of MOOC learners were well educated. With regard to the MOOC research, the authors analyzed 147 peer-reviewed journal papers published between 2012 and 2017 from five dimensions; namely, (1) the research aim, (2) research paradigm, (3) data collection, (4) data analysis method, and (4) research types. Next, the challenges and best practices facing MOOCs in China were pointed out. Finally, the authors discussed the future direction of MOOC practice and research, suggesting that more attention should be paid to MOOC pedagogy and the influence of MOOCs on the status quo of higher education.



**Jianli Jiao** is Professor of Educational Technology and Director of the Future Education Research Center at the School of Information Technology in Education, South China Normal University in Guangzhou, China. He is a

pioneer in teaching and learning with the Web in mainland China. His research interests span educational technology, blended and online learning, technology-enhanced learning in K12, higher education, and continuing professional education. He has spoken at numerous local, national, and international conferences about educational technology, MOOCs, blended and online learning. He has published over 10 books, more than 110 articles in refereed journals, and more than 2,100 posts covering an expansive list of important educational technology topics and trends that has been a highly popular and valued resource throughout China for nearly two decades ([www.jiaojianli.com](http://www.jiaojianli.com)). Currently, Dr Jiao is researching MOOCs, technology-enhanced learning, and blended learning in K-12 and higher education settings.



**Yibo Fan** is now a doctoral student in the program of Curriculum & Education with a cognate in Educational Technology at Boise State University. Before joining in Boise State, he received his M.S. in Educational Technology at South China Normal University in 2017, and his B.S. from Henan University in 2014. His research interests include STEM education, learning science, MOOCs, and online education.

## Section 2: Current Practices and Designs

### Chapter 4. The Different Faces of Open in Egypt

- Maha Bali, Associate Professor of Practice, Center for Learning and Teaching, The American University in Cairo
- Nadine Aboulmagd, Online Content Developer, Center for Learning and Teaching, American University in Cairo

**Abstract:** MOOC discourses originating from the global North can appear potentially colonizing to educators in the Global South. Even though the initial hype around MOOCs has died down, there is still an overall belief in the liberating potential of open which ignores the shortcomings of the practice on the ground. In this chapter, we contextualize open from an Egyptian perspective and refer to different open educational practices we have been involved in, including the creation of Arabic content based on Western models (e.g., Edraak MOOCs, Wikipedia Arabic, and Tahrir Academy). Bali and Aboulmagd also author discuss the creation of local OERs using local models, the reuse of existing English-language global North content (e.g., MITx with AUC/AUB, translating EdX content in Edraak, etc.), and participation in existing connectivist MOOCs as facilitators. These authors also describe an open project co-founded by one of the authors called “Virtually Connecting.” Importantly, this project challenges the marginalization of Global South scholars and others in education such as contingent academics, graduate students, and others. In doing so, they highlight how openness, when contextualized to different regions, can look different and have multiple faces.



**Maha Bali** is Associate Professor of Practice at the Center for Learning and Teaching at the American University in Cairo where she has been a faculty developer since 2003. She holds a PhD in Education from the University of Sheffield and teaches digital literacies and intercultural learning to undergraduate students. She is on the editorial boards of *Teaching in Higher Education*; *Learning Media, and Technology*; the *Online Learning Journal*; *Hybrid Pedagogy*, and the *Journal of Pedagogic Development*. Dr Bali is the co-founder of Virtually Connecting. She writes regularly for Prof Hacker and her own blog at <http://blog.mahabali.me>.



**Nadine Aboulmagd** is a Senior Instructional Designer at The Center for Learning and Teaching at the American University in Cairo, where she supports faculty in designing their courses (i.e., online, face-to-face, blended, and MOOCs), designing engaging learning experiences, integrating technology in their classrooms, and developing course content. Aboulmagd has a Master of Arts degree in Educational Leadership with a concentration in higher education from the Graduate School of Education (GSE) at AUC and is a member of Virtually Connecting, holding the role of Middle East and Africa Lead Buddy. Her main areas of research include massive open online courses (MOOCs), online and blended learning, learner engagement, adult learning, instructional design, educational technology, and faculty development.

## **Chapter 5. Delivering on the Promise of Open Educational Resources**

- Rajiv S. Jhangiani, Kwantlen Polytechnic University, Special Advisor to the Provost on Open Education & Psychology Instructor, Surrey, BC, Canada

**Abstract:** This chapter summarizes the growth and promise of the open educational resources (OER) movement. At the same time, it emphasizes that in order for OER to achieve its potential in widening equitable access to education, practitioners must be mindful of several pitfalls. These problems and pitfalls include the assumption that all students have access to digital technologies. Another issue relates to the overreliance on under-compensated or voluntary academic labour to create OER. A third pitfall is the ignorance of critical accessibility requirements while developing OER. The fourth issue relates to the disregard for data privacy when utilizing educational technologies. Finally, there is the mounting problem of the undermining of the spirit and practice of “open” education with the entry of commercial publishers into the OER space. Each of these challenges and issues is addressed in this chapter.



**Rajiv Jhangiani** is the Associate Vice Provost, Open Education at Kwantlen Polytechnic University in British Columbia. His research and practice currently focuses on open education, student-centered pedagogies, and the scholarship of teaching and learning. A recipient of the award for Excellence in Open Education from BCcampus, Rajiv is a co-founder of the Open Pedagogy Notebook and an Ambassador for the Center for Open



Science. A co-author of three open textbooks in Psychology, his most recent book is *Open: The Philosophy and Practices that are Revolutionizing Education and Science* (2017) which is an open access resource from Ubiquity Press. You can find him online at @thatpsychprof or thatpsychprof.com. He can be contacted at [rajiv.jhangiani@kpu.ca](mailto:rajiv.jhangiani@kpu.ca).

## Chapter 6: Massive Open Online Courses: The State of Practice in Indonesia

- Tian Belawati, Universitas Terbuka (Indonesia Open University), Indonesia

**Abstract:** Despite the many concerns regarding their underlying business model, MOOCs continue to grow and are being adopted worldwide; in effect, they have become accepted as the new practice of opening access to quality education. Every day there are new MOOCs and MOOC-like or MOOC-inspired online courses being developed and offered by many educational institutions and organizations in all parts of the world, including in Indonesia. Many initiatives, mostly initiated by individual institutions, have also endorsed and then jumped on to the MOOC bandwagon. The first MOOC in Indonesia was offered by a private university known as the Ciputra University in 2013, followed by Universitas Terbuka in 2014. Even though several universities and organizations such as SEAMEO-SEAMOLEC (South East Asian Ministry of Education Organization Regional Center for Open Learning), IndonesiaX, and SPADA have followed the initiative, the road for Indonesia to fully take advantage of ample MOOC resources is still a long way off. According to Belawati, Indonesia needs a systematic campaign and an awareness raising effort to make MOOCs beneficial to the greater part of Indonesian society. As someone who initially started working at the UT in 1985 just after its inception and has twice been its rector, Dr. Belawati has a highly unique lens in which to view the emergence of MOOCs and open education in her country.



**Professor Tian Belawati** has been working in the field of open and distance education (ODE) for over 30 years. She has had extensive experiences in research, teaching, and administration of a large scale open university system. She has also been involved in many international ODE movements that has led her appointments as President of the Asian Association of Open Universities or AAOU (2009-2010) and of the International Council for Open and Distance Education or ICDE (2012-2015). She is also a member of ICDE Board of Trustees (2017-present), and as a member of Board of Directors of the Open Education Consortium (2017-present). Notably, Professor Belawati also served as Rector of Universitas Terbuka in Indonesia from 2009-2017 where she mobilized unique partnerships and introduced innovations and sound practices in the use of new technology for the delivery of ODL.

## Chapter 7. Orchestrating Shifts in Perspectives and Practices about the Design of MOOCs

- Som Naidu, Pro-Vice Chancellor Flexible Learning and Director, Center for Flexible Learning, The University of the South Pacific, Fiji Islands
- Shironica P. Karunanayaka, Professor in Educational Technology, Dean/ Faculty of Education, The Open University of Sri Lanka

**Abstract:** The predominant approach to teaching is largely *content centric* with a focus on the understanding of the subject matter and not so much on its application. The first generation of MOOCs adopted this same approach and failed to live up to their expectations for optimizing the affordances of communications technology. There is a better way to design MOOCs, and this alternative approach is about starting with the learning *context* and asking what is it that we want the learners to be able to do, and what are their learning outcomes. Next, there is a need to design a learning experience that will be able to offer an internship in solving real world problems as part of the learning process of MOOC participants. Such an approach entails a radical paradigm shift in the design of MOOCs. Admittedly, this kind of shift in perceptions and perspectives about teaching and learning will not readily occur without careful redesign of conventional choreographies. In response, this chapter describes the development of a redesign process that is based on thinking around general systems theory.



**Som Naidu** is currently Pro-Vice Chancellor Flexible Learning and Director, Center for Flexible Learning, at the University of the South Pacific. Dr Naidu possesses undergraduate qualifications in *Education* from the University of Waikato in New Zealand, and graduate qualifications in *Educational Technology* from Concordia University in Montreal, Canada. A former president of the *Open and Distance Learning Association of Australia*, Dr Naidu has served as Executive Editor of its journal *Distance Education* since 1997. In May 2014 the Open University of Sri Lanka awarded Dr Naidu a *D.Litt. (Honoris Causa)*, in recognition of his extensive contribution to the field of *open, flexible, distance and e-learning* both regionally and internationally.



**Shironica P. Karunanayaka** is a Professor in Educational Technology and the current Dean of the Faculty of Education at the Open University of Sri Lanka (OUSL) where she has been housed since 1993. Prof. Karunanayaka holds a first class in the Bachelor's degree in Science from the OUSL, the Post Graduate Diploma in Education from the University of Colombo, and the Degree of Doctor of Education from the University of Wollongong, Australia, specializing in Information Technology in Education and Training. Being an active researcher, Prof. Karunanayaka has many publications in both national and international fora. Her key research focus areas include ICT in education, instructional design for enhancing learning and teaching experiences, open educational resources, and open educational practices.

## Chapter 8:

### A Different Kind of MOOC Architecture for Emerging Economies in Oceania and the Pacific

- Deepak Bhartu, Centre for Flexible Learning, The University of the South Pacific, Laucala Campus, Suva, Fiji Islands
- Som Naidu, Pro-Vice Chancellor Flexible Learning and Director, Center for Flexible Learning, The University of the South Pacific, Suva, Fiji Islands

**Abstract:** Since the introduction of MOOCs, they have attracted much attention in both developed and developing educational contexts. However, what works in resource and technology rich environments does not work all that well in resource poor contexts. Stated another way, what is good for the goose is not necessarily good for the gander. In developing contexts, where direct access to learning opportunities is either lacking or restricted for various reasons, a different kind of MOOC architecture is required. Contemporary MOOCs emanating from developed educational contexts tend to include learning resources that require large bandwidth to access, thereby moving them beyond reach of the majority of learners in developing educational contexts. To be able to serve the needs of learners in resource poor educational contexts, it is imperative that MOOCs are designed with a different perspective including innovative architecture and educational resources. In response, this chapter describes those early efforts in the development of MOOCs at the University of the South Pacific, and especially the focus on climate change which is an area of not just local and regional concern, but of global interest.



**Deepak Bhartu** is an Open Education Design Architect in the Centre for Flexible Learning at The University of the South Pacific. Mr. Bhartu possesses a master's degree in *Computing Science and Information Systems* from The University of the South Pacific. He has worked in the higher education sector as a teaching academic, and as well as a learning experience designer. In the latter role he has developed and supported the development of courses for online and blended learning on various platforms including Open edX, mooKIT and Moodle. Mr. Bhartu is also a certified Higher Education Peer Reviewer with Quality Matters with research interests in open education practices; specifically, open educational resources and massive open online courses.



**Som Naidu** is currently Pro-Vice Chancellor Flexible Learning and Director, Center for Flexible Learning, at the University of the South Pacific. Dr Naidu possesses undergraduate qualifications in *Education* from the University of Waikato in New Zealand, and graduate qualifications in *Educational Technology* from Concordia University in Montreal, Canada. A former president of the *Open and Distance Learning Association of Australia*, Dr Naidu has served as Executive Editor of its journal *Distance Education* since 1997. In May 2014 the Open University of Sri Lanka awarded Dr Naidu a *D.Litt. (Honoris Causa)*, in recognition of his extensive contribution to the field of *open, flexible, distance and e-learning* both regionally and internationally.

## Chapter 9. Nepali High School Students in Massive Open Online Courses (MOOCs): Impressive Results and a Promising Future

- Baman Kumar Ghimire, Motherland Secondary School, Pokhara, Nepal
- Bishwa Raj Gautam, Program Specialist, Regional English Language Office (RELO), U.S. Embassy, Nepal

**Abstract:** Chapter 9 offers an intriguing look at how MOOCs are being used by high school teachers to spark learner interests and increase the level of educational engagement of young Nepali students. As Ghimire and Gautam describe, lively, interactive pedagogical practices played a key role in their MOOC initiative which effectively demonstrated how MOOCs can broaden and brighten the current and future educational possibilities of those in countries with limited or inadequate resources such as Nepal. Importantly, the chapter explains how MOOCs in one of the least developed countries became a highly successful learning tool. It also attempts to delineate the formula that led to this success. By reading this chapter about educational innovation in Nepal, teachers, instructional developers, and other professionals may obtain insights into designing successful online and open education courses through effective involvement of committed educators and advocates.



**Baman Kumar Ghimire** is a High School English language teacher from Nepal. He is a recipient of Endeavour Executive Fellowship-2014 from Australian Government and Teaching Excellence and Achievement (TEA) Program-2014 Award by the Department of State. Mr. Ghimire completed an M.A. in English literature from Tribhuvan University, TESOL Core Certificate from TESOL International Association, and over two dozen of

MOOCs. He was awarded with an Alumni Grant-2015 by IREX, Federal Assistance Award-2016 and the International Volunteer Leadership Program (IVLP)-2017 Award by the Department of State to encourage his efforts in mentoring MOOCs to high school students and teachers in Nepal. He has penned some articles, run a number of workshops, and made presentations in national and international conferences on educational technology.



**Bishwa Raj Gautam** manages English language programs at the U.S Embassy in Nepal and provides teacher training on materials production, and open learning. Mr. Gautam gave plenary addresses at international conferences of Nepal English Language Teachers' Association (NELTA) on *Technology and Connectivism: ELTian's Future* in 2018 and *TESOL's Six Principles for Learning Centered Teaching* in 2019. He has authored two books, *Open Library* and a workbook, *Professional Spoken English: Take it*

*Easy!* He completed a master's of Philosophy in English Literature, master's in English Education, and Library and Information Sciences from the Tribhuvan University, TESOL Core Certificate from TESOL International Association and E-Teacher from University of Maryland Baltimore County (UMBC).

## Chapter 10. MOOC in Latin America: Trends and Issues

- Jaime Sánchez, Department of Computer Science, University of Chile, Santiago, Chile
- José Reyes Rojas, Santiago, Chile

### Abstract:

Massive Open Online Courses (MOOCs) have become a worldwide growing topic of research and development in online learning. Universities, industry, and diverse educational institutions have found a way to carry out developments, implementations, and research on MOOCs. North America and Europe have well documented and informed research regarding the state-of-the art concerning the current status, issues, and future of MOOCs. Latin American institutions, in contrast, have been late entries to the MOOC world. To make matters worse, scientific information on the state of MOOCs in Latin America is slowly evolving, scattered, incomplete, and often confusing in terms of the actual developments, implementations, and research. To address this concern, Sánchez and Rojas have researched the scientific production around MOOCs in Latin America (2014-2019) to draw attention to trends and issues concerning this topic. This Chilean research team conducted a systematic literature research review study concerning the studies, research, reports, and experiences informed in the indexed scientific literature concerning MOOCs in Latin America. Sánchez and Rojas characterized the phenomenon to draw some main trends and issues. In particular, they address research questions concerning the distribution of the scientific productivity throughout the scientific data bases chosen, the types of documents/publications, study areas, impact of this productivity of MOOCs in Latin America on the scientific community, the profiles of the most productive MOOC researchers, and the places, institutions, nuclei, and programs from where that scientific production emanates. In the end, Sánchez and Rojas offer a comprehensive picture and characterization of the MOOC phenomenon in Latin America via what may be the first attempt to perform a systematic literature research study of it. Finally, some major trends and issues are drawn and discussed from the unique data and information gathered.



**Jaime Sánchez** received the M.A., M.Sc., and Ph.D. degrees from Columbia University, New York, USA. He has also been a postdoctoral research fellow at MIT Media Lab (Computers, Learning and Cognition) and Cornell University (Metacognition). Since 2010, he is Professor of Human-Computer Interaction at the Department of Computer Science of the University of Chile. He is also Adjunct Full Professor at TC Columbia University, New York, USA. Since 1995, Dr. Sánchez has been the Director of the Center for Computing and Communication for the Construction of Knowledge C5, at the Department of Computer Science, University of

Chile. He has been involved in research in the areas of Human-Computer Interaction, Computers and Education, Software Usability, Game-Based Learning and Cognition. He published profusely on these topics and has also authored several books on learning with computers. He has been Visiting Professor in diverse worldwide universities in the Department of Mathematics, Science and Technology at TC Columbia University and the Center for Non-Invasive Brain Stimulation at Harvard University.



**José Reyes-Rojas** is a researcher at the University of Chile where he has received the Ed.M. in Computers and Education. His professional and research work has been in both school education and research on the use of technology in education, inclusion, epistemological criticism of ICT, art education, and the practical application of theories of learning. He has participated in diverse research projects in education and authored conference and journal publications.

## **Chapter 11. The Emotional Benefits of Diversity in MOOCs: Reshaping Views of Online Education Through Exposure to Global Learners**

- Trang Phan, Assistant Professor and Director of Instructional Technology Resource Center (INTERESC) at Kremen School of Education and Human Development at California State University, Fresno, USA

**Abstract:** In Chapter 11, Trang Phan, Director of Instructional Technology Resource Center from California State University at Fresno, discusses the emotional benefits of diversity in MOOCs as seen in her groundbreaking dissertation study. The purpose of her qualitative study was to describe the emotional benefits of teaching and learning resulting from exposure to highly diverse global audiences and expectations in MOOCs. Participants were 15 instructors and instructional designers in American higher educational institutions who were involved in designing and delivering MOOC courses on the Coursera platform to learners in hundreds of countries throughout the world. Phan explains how these MOOC course designers and instructors adapted their courses to a wide range of learners, whether from the Global North or Global South. Multiple roles of participants in their MOOC design, development, and delivery are described. Also detailed are their perceptions of diversity, including some of the key merits as well as several marked challenges. Phan also describes how exposure to global learners has caused these MOOC instructors and instructional designers to be more culturally sensitive and compassionate in their thoughts and acts towards engaging global learners with the course content and associated learning activities. Those teaching or developing MOOCs for the Global South should find high value and personal meaning in her associated stories.



**Trang Phan** is an assistant professor and Director of Instructional Technology Resource Center (INTERESC) at Kremen School of Education and Human Development at California State University, Fresno. Phan's interest in massive open online courses (MOOCs) derived from her research works at the University of Houston where she earned her doctorate. Her other areas of focus include faculty uses of technology to enhance student-centered learning and human-centered design in education. As Director of INTERESC, she is in charge of training for the integration of technology in the classroom.

## Section 3: MOOCs and Open Education for Professional Development

### Chapter 12: Insights into a Nationwide pdMOOC Portal: Bilgeis.net of Turkey

- Kursat Cagiltay, Middle East Technical University, Orta Dogu Teknik Universitesi, Ankara Turkey
- Sezin Esfer, Middle East Technical University, Orta Dogu Teknik Universitesi, Ankara Turkey
- Berkan Celik, Middle East Technical University, Orta Dogu Teknik Universitesi, Ankara Turkey

**Abstract:** The number of MOOC portals in Turkey is relatively low when compared to its western counterparts since MOOCs are still a new phenomenon for Turkey and Middle East region. In this chapter, the authors reveal the insights of a Turkish pdMOOC (professional development MOOC) portal (bilgeis.net) which offers 100 courses in order to support the development of soft and technical skills of individuals. In less than two years, registered users on bilgeis.net have reached to 100,000+. Bilgeİs pdMOOCs are increasingly used by a different audience, including employees, employers, university students, unemployed people, and even K12 students. Bilgeİs pdMOOCs provide many benefits to this audience. However, running such MOOCs also brings its set of own challenges and unexpected problems. In response, the authors of this chapter shed light on those challenges and issues as well as potential resolutions. Of course, it is expected that this is just the opening act of a much longer play. Five or ten years from now, there may be thousands of niche pdMOOCs in Turkey. Accordingly, this chapter may provide hints for future MOOC developers in Turkey and beyond to help transform traditional professional development policies and practices. What is clear is that despite the challenges inevitably involved in such an enterprise, the authors predict that professional development MOOCs will be a growth industry in Turkey.



**Kursat Cagiltay** is currently a professor in the Department of Computer Education and Instructional Technology at the Middle East Technical University (METU), Ankara, Turkey. He is the director of the Audio-Visual Systems Research and Development Center and coordinator of Instructional Technology Support Office at METU. He has been working as the coordinator of Bilgeİş MOOC Project since 2015. He earned his BS in Mathematics and MS in Computer Engineering from the METU and holds double Ph.D. in Cognitive Science and Instructional Systems Technology from Indiana University, USA. His research focuses on human-computer interaction, technology enhanced learning, social and cognitive aspects of electronic games, human performance technology, OER/OCW, and MOOCs. He can be contacted at [kursat@metu.edu.tr](mailto:kursat@metu.edu.tr).



**Sezin Esfer** is a research assistant and PhD candidate in the Department of Computer Education and Instructional Technology at the Middle East Technical University (METU), Ankara, Turkey. She has been working as Operation Coordination Unit member in the Bilgeİş MOOC Project since

2015. Her PhD thesis is related to the dynamics of design and development of MOOCs. She earned her MS degree from the Computer Education and Instructional Technology program at Marmara University, İstanbul, in 2010 and BS degree in the same department at Uludag University, Bursa, in 2006. Her research interests include human-computer interaction, computer-aided language learning, e-learning, and MOOCs. She can be contacted at sesfer@gmail.com.



**Berkan Celik** is an experienced teaching assistant and PhD candidate in the Department of Computer Education and Instructional Technology at the Middle East Technical University (METU), Ankara, Turkey. He earned his BS and MS degrees in Computer Education and Instructional Technology from METU in 2011 and 2014, respectively. His research focuses on pre-service teacher education, technology integration, gamification, mobile learning, e-learning, MOOCs, adult education, and all phases of instructional design and development. He can be contacted at

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### **Chapter 13. Promoting Open Education and MOOCs in Thailand: A Research Based Design Approach**

- Jintavee Khlaisang, Associate Professor, Thailand Cyber University Project, Office of the Higher Education Commission, Ministry of Education Faculty of Education, Bangkok Thailand
- Thapanee Thammetar, Associate Professor, Thailand Cyber University Project, Office of the Higher Education Commission, Ministry of Education, Bangkok, Thailand

**Abstract:** Thailand 4.0 is an economic model that will modernize the country and increase people's income equally. In response to the role of education in Thailand 4.0 era, there is increasing focus on the opportunities for Thai people to learn continuously throughout their lives by using ICT that improves access to educational services equally and efficiently in formal, non-formal, and informal contexts. For instance, Thailand Cyber University Project (TCU) has developed a strategic plan related to open education that will lead to a learning society and promote lifelong learning via ICT. TCU's flagship project over the past three years has been Thai MOOC, which is a national MOOC platform of Thailand. Using a research-based design approach, these two TCU leaders, Khlaisang and Thammetar, describe their analysis of the current conditions relating to open education in Thailand. They also discuss the results of a gap analysis and SWOT analysis of open educational operation and presents the TCU 2018-2022 strategic plan on open education via ICT of higher education institutions. Finally, a Thai MOOC will be presented as a case study for promoting open education and MOOCs in Thailand.



**Jintavee Khlaisang** is the Associate Professor at the Department of Educational Technology and Communications, and the member of Educational Invention and Innovation research unit within the Faculty of Education at Chulalongkorn University, Bangkok, Thailand. Jintavee is also the deputy director of Thailand Cyber University Project, Office of the



Higher Education Commission in the Ministry of Education in Thailand. She recent book is titled, *Ubiquitous Technology Enhanced Learning: The Outcome-based Learning Design for 21<sup>st</sup> Century Learners* (2018). Her latest research project is the Development of Gamified Self-Regulated Learning System in Ubiquitous Learning Environments to enhance Achievement Motivation for Thai MOOCs (2018-present). Her research interests include ubiquitous learning, flipped learning, blended learning, virtual learning environments, open education, and MOOCs.



**Thapanee Thammetar** is the director of Thailand Cyber University Project, Office of the Higher Education Commission in the Ministry of Education in Bangkok, Thailand. Thapanee is also an Associate Professor at the Department of Educational Technology in the Faculty of Education at Silpakorn University. Currently, she also serves as a member of the institute council and a member of academic senate of the Institute of Community Colleges in the Ministry of Education in Thailand. Her latest research projects are the competency-based online professional development system for higher education officers (2018). Her on-going research projects include strategic plans and faculty development guidelines for MOOC Teaching in Higher Education Institutes (2018-present). Her research interests include e-learning, quality assurance for online learning, open education, and MOOCs.

#### **Chapter 14. Capacity Building of Teachers: A Case Study of the Technology-Enabled Learning (TEL) Massive Open Online Courses**

- Sanjaya Mishra, Education Specialist, eLearning, Commonwealth of Learning, Vancouver, BC, Canada
- Martha Cleveland-Innes, Athabasca University, Alberta, Canada
- Nathaniel Ostashevski Athabasca University, Alberta, Canada

**Abstract:** Education is a key driver for economic and social development. For education to be accessible and valuable, teachers must have the pedagogical and technological skill to engage learners in ways that lead to the development of appropriate knowledge, skills, and attitudes. Considering the huge number of trained teachers required to achieve UNESCO’s Sustainable Development Goal 4, a massive open online course (MOOC) on Technology-Enabled Learning (TEL) was jointly developed by the Commonwealth of Learning (COL) and Athabasca University, Canada to address the lack of adequately trained teachers globally, and particularly in the Commonwealth. This chapter presents the design, development, and delivery of the TEL MOOC. It analyzes the data collected from two offerings of the MOOC in 2017. Preliminary findings from TEL MOOC #1 and #2 revealed that the design adopted improved learner engagements and completion rates. Preliminary findings from TEL MOOC #1 and #2 revealed that the course design that was adopted improved learner engagement and completion rates. Data also reveal that more than 30% of the participants joined this course for specific professional development reasons. Importantly, active participation of a large number of those registered shows the potential of MOOCs for professional development of the teachers in the Commonwealth and beyond.



**Sanjaya Mishra** is Education Specialist, eLearning at the Commonwealth of Learning (COL) in Vancouver, Canada since January 2015. Previously, he served COL as Director of the Commonwealth Educational Media Centre for Asia (CEMCA) from 2012 to 2014. Dr Mishra is one of the leading scholars in open, distance, and online learning. Prior to joining COL, he was Programme Specialist (ICT in Education, Science, and Culture) at UNESCO, Paris. Dr Mishra has over 25 years of experience in design, development, and management of open, distance and online learning programmes and he is a leading advocate of open educational resources.



**Marti Cleveland-Innes** is Professor of Educational Innovation at Athabasca University in Alberta, Canada. She has been teaching for 35 years in all areas of education, face-to-face and online. Martha has received awards for her work on the student experience in online environments and holds a major research grant through the Canadian Social Sciences and Humanities Research Council. In 2011 she received the Craig Cunningham Memorial Award for Teaching Excellence, and, in 2009, she received the President's Award for Research and Scholarly Excellence from Athabasca University. Her work is well published in academic journals in North America and Europe.



**Nathaniel Ostashewski** is Associate Professor of Education Innovation at Athabasca University in Alberta, Canada. He has been utilising technology in teaching since 1990, both at the K12 and graduate education level. For the past 20 years Dr Ostashewski has been training teachers how to incorporate technology into “worth-it” classroom, blended, and online activities. His current research areas include iPads in the classroom, networked teacher professional development, MOOC design and delivery, and the use of collaboration technologies in teaching. His latest book is titled “*Optimizing K12 Education through Blended and Online Learning*” and he has several open access publications available online.

## **Chapter 15. The Development of MOOCs as Incubation Space for Professional and Institutional Learning: A View from South Africa**

- Dr. Antoinette van der Merwe, Senior Director: Learning and Teaching Enhancement, Centre for Learning Technologies, Stellenbosch University, South Africa
- Dr. JP Bosman, Director: Centre for Learning Technologies, Stellenbosch University, South Africa
- Ms. Miné de Klerk, Advisor: Online Learning, Centre for Learning Technologies Stellenbosch University, South Africa

**Abstract:** Stellenbosch University’s first MOOC, Teaching for Change, shared a pedagogical approach with the world that is based on an African Philosophy of Education. At the same time,

it served as a flexible incubation space for different dimensions of professional and institutional learning at our university. The experimentation that the development process of the MOOC allowed in dimensions such as pedagogy, technology systems, and partnerships between professional academic support environments and teaching staff, is informing institutional strategy and decision making regarding the use of learning technologies for face-to-face, online, and hybrid modes learning and teaching. Consequently, the return on investment of the MOOC in our South African, resource-constrained environment is not calculated in terms of short-term financial gains but rather in terms of longer-term gains that include organizational resilience and sustainability. This chapter indicates how the development of a MOOC generated the incubation of meaningful and innovative learning processes at different levels of the university. The authors insightfully note that the iterative process that they describe sparked valuable dialogue, leading to the purposeful application of learning technologies for a range of learning and teaching modalities. Such applications operated within a complex, emerging (South) African context that, importantly, were not limited to the MOOC format.



**Antoinette van der Merwe** is Senior Director of the Division for Learning and Teaching Enhancement at Stellenbosch University reporting to the Vice-Rector of Learning and Teaching. After completing her Bachelor's degree in French and German at Stellenbosch University, Dr van der Merwe studied at Texas A&M University, USA, obtaining another Bachelor's degree in History and a Master's degree in Intellectual History. After returning to South Africa in 1996, she obtained a PhD from Stellenbosch

University in Science and Technology Studies and has been involved in professional academic support for the past 23 years at SU. Her main research interests include the scholarship of educational leadership, virtual learning spaces, and the effective use of learning technologies in higher education.



**JP Bosman** is Director of the Centre for Learning Technologies (CLT) at Stellenbosch University (SU) in South Africa. He trained and taught in the field of Theology at SU before becoming involved in academic development work. After working at the Centre for Teaching and Learning at SU as well as a start-up educational software company, he became head (and in 2018 Director) of the CLT, a Centre that spearheads and supports SU's strategies

for the use of ICT in Learning and Teaching. Dr Bosman's research interests are around blended- and hybrid learning, mLearning Literacy, and graduate attributes. He currently lives in Cape Town with his wife and two kids.



**Miné de Klerk** has an MBA from the University of Cape Town and is a PhD candidate in Curriculum Studies at Stellenbosch University. She is currently an educational advisor at the Stellenbosch University Centre for Learning Technologies (CLT) in South Africa. Her professional portfolio includes the development of academically rigorous online learning offerings - ranging from formally accredited, hybrid courses to open educational

resources such as MOOCs. She draws from her experience in the international e-learning and media industries, as well as the CLT's scholarly approach, to navigate the complex interface between ICTs and higher education infrastructures. She remains cautiously optimistic in her continual pursuit of developing virtual classrooms that are responsive to local contexts, enable critical dialogue, and establish learning communities that transcend geographical borders.

## Section 4: Multi-Country Collaborations and Collections

### Chapter 16. Courses for a Cause: MOOC Contributions to a “Better Place for All”

- Marianne E. Krasny, Professor, Department of Natural Resources, Cornell University, USA
- Brittney López Hampton Coleman, Human Rights defender, Environmental Educator, Commercial Relationship university student affiliation: Civil society, private org and government, Mexico City, Mexico
- Zahra Golshani, Research Associate, Institute for Health and Environment, University At Albany, Tigrard, OR, USA
- Michael Schrenk, Division Manager: Environment, Wild Serve NPC, Gauteng, South Africa
- Gail L. Woon, Founder, EARTHCARE, Freeport, Grand Bahama Island, The Bahamas
- Yueyang Yu, M.S. Student, Cornell University, Department of Natural Resources, Cornell University, USA
- Masango (Massy) Roderick Warakula, Reverend, Anglican Church Diocese of Harare (CPCA), Harare, Zimbabwe
- Juan Felipe Restrepo Mesa, Marine Biologist, Montessori de Cartagena School's Environmental Project (PRAE) Coordinator, Cartagena de Indias, Colombia

**Abstract:** From their outset, MOOCs have been envisioned as engines of change. Whereas early conceptions of MOOCs centered around providing universal access to high quality education, our goal is for MOOCs to be key actors or springboards in spurring local sustainability practices. MOOC participants and chapter co-authors from seven countries describe how their various MOOC experiences helped them to build nonprofit organizational capacity, innovate in their community engagement and environmental education practices, and launch lasting online and face-to-face networks. Design factors enabling MOOCs to contribute such public goods include facilitating and supporting online social networks and local groups as well as final projects where MOOC participants apply what they have learned to a local sustainability practice or action. It also includes recognizing participants' local practices such as through inviting them to co-author journal articles and eBooks and facilitating ongoing social media after the course ends. In terms of social change and impact, this ambitious team has designed one of the most exciting initiatives in the history of MOOCs. Through their assorted efforts, what has been learned via the MOOC can quickly impact local practices and actions.



**Marianne E Krasny** is professor of Natural Resources and Director of the Civic Ecology Lab at Cornell University. Her recent books include *Civic Ecology* (with K Tidball), *Urban Environmental Education Review* (with A Russ), *Communicating Climate Change: A Guide for Educators* (with A. Armstrong and J. Schuldt), and *Grassroots to Global*. She was director of EPA's National Environmental Education Training Program and of the Garden Mosaics community gardening education program. She is also a Public Voices Fellow and an International Fellow of the Royal Swedish Academy of Agriculture and Forestry. Dr Krasny particularly enjoys teaching environmental education MOOCs for international audiences, and

has co-authored Ebooks, journal articles, and book chapters with online course participants who implement projects that enhance their local community.



**Brittney López Hampton Coleman** was born in Mexico City and grew up one hour away in Atizapán. She has studied governmental institutions, accounting, administration, and has a bachelor's degree in business. She has worked in market investigations, networking, and was a functional trainer in an art center of the government. She spent two years in Sweden as a volunteer on LGBT and refugee organizations. Attending film, music, and photo festivals such as the Uppsala Sustainability Festival and the Stockholm Film Festival, Brittney was inspired to try such events in Mexico. Recently, she has worked at Amnesty International Mexico and has

enrolled in a MOOC for helping refugees.



**Zahra Golshani** has been involved in international training and capacity building since early 2016. She obtained her PhD in human dimensions of environmental systems from the University of Illinois at Urban-Champaign, followed by a one year post-doctoral at Cornell University. Her first international training was a collaboration with Cornell University on a course called: global environmental education: Transdisciplinary

Approaches to Addressing Wicked Problems. That collaboration extended itself to a new position at SUNY- Albany. Here, Dr Golshani joined an international training of trainers program, as an instructor, course developer, facilitator, and students supervisor. Her own research broadly covers the human dimensions of water resource management. She recently conducted a study that assessed minorities participation in urban river stewardship programs in southeast Portland.



**Michael Schrenk** obtained his degree from the school of civil and environmental engineering at the University of the Witwatersrand, South Africa. At the time, he began to learn that nature and mankind can and must harmonise. An understanding of the need for these harmonies drove him to leave behind a corporate engineering career and help start the organisation Wild Serve. The Wildlife Warriors programme, which Schrenk co-founded,

engaged over 1,000 underprivileged young students on the value of wildlife and wild spaces before it was transferred to Wild Serve. Schrenk has more than 5 years of experience in working with a large variety of urban wildlife species including mammals, reptiles, and birds. He is also a world champion martial artist and enjoys travelling.



**Masango Roderick Warakula** is an ordained Anglican Priest in the Diocese of Harare, Zimbabwe. He is a holder of a MSc in International Relations from Bindura University of Science Education. He is a very passionate lecturer in Ecotheology and a peace activist. In his spare time, he volunteers with the Scout Movement and works with youths from displaced societies. He is interested in environmental and social justice issues.



**Gail Woon** is from Grand Bahama Island. Her degrees are in Environmental Technology/Aquaculture, Oceanographic Technology, and International Environmental Law. In addition, she has Expert Certificates in Global Environmental Education, Civic Ecology, and Biological Diversity Sampling Techniques. In 1988, she founded an environmental NGO (non-governmental organization) dedicated to Environmental Education called EARTHCARE. The EARTHCARE organization is active in many aspects of environmental issues affecting the nation and was instrumental in obtaining a ban on longline fishing in 1993. EARTHCARE received a grant from SWOT (State of the World's Oceans Turtles) wherein they distributed volumes on Marine Turtles to all of the schools and libraries on the island of Grand Bahama and has received several grants from the Florida Caribbean Cruise Association.



**Yueyang Yu** is currently a M.S. student at the Department of Natural Resources of Cornell University. She completed her B.A. degree in Computer Science at Beijing Foreign Studies University in 2018, where she also received her significant environmental education by working closely with China campus environmental clubs. As cofounder of a club, a club union and several club networks, Yueyang is committed to environmental education for college students and has been passionate about integrating empowerment goals into her practice and research efforts. Her leadership in a variety of online and offline activities for China campus environmental clubs was awarded the 30 environmental educators under 30 by the North American Association for Environmental Education in 2018.



**Juan Felipe Restrepo Mesa** is a Marine Biologist from Universidad Jorge Tadeo Lozano in Columbia, South America. He specialized in Educational Organizations Direction from Universidad Tecnológica de Bolívar and obtained a master's degree in business administration from EAFIT University. He has a thirteen-year experience in education as a Science (K-12) teacher. His pedagogical approach has been based on the Actives

Methodologies using a “think globally, act locally” perspective. He deeply believes in the student as an active actor capable of creating new significant knowledge through research and personal experiences. During the last eight years, he has been leading students' research groups of all ages from 3rd grade up to 11th grade around topics related to the environment and biodiversity preservation through a Citizen Science approach. Two of his students' research groups have been recognized as the best National School Science Projects by Colciencias, the Colombian government Investigation, Innovation, and Technology office. Since the last three years, he has completed two of Cornell's Civic Lab MOOCs: Introduction to the Environmental Education and Outcomes in Environmental Education, and they virtually changed his perspective toward Environmental Education and Sustainability. At the present time, he works as the Colegio Montessori de Cartagena's Environmental Education Coordinator.

### **Chapter 17. MOOCs in Six Emerging APEC Member Economies: Trends, Research and Recommendations**

- Insung Jung, Professor, International Christian University, Tokyo, Japan
- Gibran A. Garcia Mendoza, Ph.D., Toyo University Lecturer, Chuo-ku, Japan
- Jennifer Christine Fajardo, Doctoral Candidate, International Christian University, Tokyo, Japan
- Siaw Eng (Janice) Tan, Doctoral Candidate, International Christian University, Tokyo, Japan
- Roberto B. Figueroa Jr, Doctoral Candidate, International Christian University, Tokyo, Japan

**Abstract:** A collaborative team of five researchers from Japan purposefully conducted research to describe the development of MOOCs in Thailand, the Philippines, Malaysia, Indonesia, Vietnam, and Mexico. It is important to point out that these countries represent six emerging economies that are members of the Asia-Pacific Economic Cooperation (APEC). It seeks to answer three key questions: (1) When did MOOCs begin in APEC countries in Southeast Asia and Latin America? (2) How did they develop? (3) How were they supported? To accomplish these goals, research articles published in relevant local, regional, and international journals together with related books and reports were thoroughly examined. Furthermore, interviews of local experts were also conducted to provide meaningful context. This chapter begins with a review of the overall trends of MOOC growth in the six selected countries. It then discusses research findings and local experts' comments on MOOC-based learning experiences and points out various challenges currently faced as well as apparent opportunities moving forward. Finally, it concludes with several valuable lessons learned from the MOOC experiences of those emerging economies.



**Insung Jung** is Professor of educational technology at the International Christian University in Tokyo, Japan. She has served as an editorial board member of several journals including *International Review of Research in Open and Distributed Learning*, *Distance Education*, and *Journal of Online Learning and Teaching*. She is currently an editor of *SpringerBriefs in the Open and Distance Education* series. Her recent books include: *Quality*

*Assurance in Distance Education and E-learning* (Sage), *Distance and Blended Learning in Asia* (Routledge), *Quality Assurance and Accreditation in Distance Education and E-learning* (Routledge), *Online Learner Competencies* (Information Age Publishing), and *Culture and Online Learning* (Stylus). For details, visit <http://epiaget.com>



**Gibran A. Garcia Mendoza** holds a doctoral and a master's degree in Education from International Christian University in Tokyo, Japan, and a bachelor's degree in Teaching English as a Foreign Language from the Benito Juárez Autonomous University of Oaxaca, Mexico. He worked for the SEPA-Inglés program of the Latin American Institute of Educational Communication training teachers who worked for the *Telesecundaria* system (a distant secondary school learning system with television support in Mexico). He has worked as a Spanish Teaching Assistant at Albion College, USA, through the Fulbright Foreign Language Assistant Program of the Institute of International Education.



**Jennifer Christine C. Fajardo** is currently a doctoral candidate of International Christian University, Japan. She obtained her degree of Master of Arts in Education and Bachelor of Science in Development Communication from the University of the Philippines. Prior to joining the academe, she was a corporate trainer in various business process outsourcing companies. She also has five years of experience teaching at San Beda University in the English and Foreign Languages department prior to coming to Japan as MEXT scholar. In addition, she also served as a corporate trainer for top business process outsourcing (BPO) companies in Manila. Her research interests are MOOCs, learner support, and pedagogical approaches in ODL.



**Siaw Eng (Janice) Tan** is currently a doctoral candidate of International Christian University (ICU) in Tokyo Japan. She holds a master's degree in mathematics and bachelor's degree in education, science and computer from the University of Technology, Malaysia. She was an Assistant Professor of Mathematics at the University of Nottingham Malaysia Campus. Tan was also a Mathematics lecturer, programme coordinator, and head of the university placement team during her career with Sunway College Johor Bahru, Malaysia. She is currently a student coordinator of Education Joint Seminar for the Department of Education and Psychology, ICU. Her research interests are psychology and cognition in technology-enhanced environments.



**Roberto B. Figueroa Jr.** is a doctoral candidate of International Christian University in Tokyo, Japan. He obtained his degrees of Master of Science in Computer Science and Bachelor of Science in Computer Science from the University of the Philippines (UP). In his capacity as Assistant Professor at UP, he took an active role of a technical lead in educational research and



extension projects funded by international organizations such as AusAID, ADB, and UNICEF. His primary research interests revolve around immersive-technology enhanced learning environments. More of his work can be found in <http://bobfigueroajr.com>

## **Chapter 18. A Glimpse on How MOOCs from IDB are Impacting Learners in Latin America and the Caribbean**

- Edgar González. Knowledge and Learning Lead Specialist, IDBx Program Manager, Inter-American Development Bank (IDB), Washington, DC, USA
- Antonio García. Operations Coordinator, IDBx Program, Inter-American Development Bank (IDB), Washington, DC, USA
- Carlos Macher. E-Learning Technologist and Data Czar, IDBx Program, Inter-American Development Bank (IDB), Washington, DC, USA
- Dou Zhang. Data Analyst, IDBx Program, Inter-American Development Bank (IDB), Washington, DC, USA (Note: now he works at the World Bank)

**Abstract:** The Inter-American Development Bank (IDB) is working to improve lives in Latin America and the Caribbean. IDB is offering massive open online courses (MOOCs) on key social and economic topics to scale up the capacity of development practitioners in the region. This chapter presents preliminary findings of the first survey exploring how such MOOCs are impacting the academic, professional, and social life of learners in Latin America and the Caribbean. Enabling and restricting factors to use the knowledge gained in the MOOCs at the learners' workplace were identified. Such findings show that MOOCs on social and economic topics offer valuable learning opportunities, inspire learners, and empower them to apply their knowledge to improve their lives. Such findings are especially apparent in developing countries where access to formal education is more limited and where access to, use of, and skills in information and communication technology are rarer.



**Edgar González** has contributed for thirty years to social development in Latin America formulating and implementing policies in health and social protection, managing projects, and strengthening institutional capacity through face-to-face training programs and online courses. He works as a Lead Specialist in Learning and Knowledge Management at the Inter-American Development Bank (IDB) in Washington, DC. Currently, Edgar is acting as the IDBx Program Manager, the IDB training initiative in edX. Prior to joining the IDB, he worked as a PAHO/WHO Consultant, General Director of Services Development of the Ministry of Health, Director and Professor of the Health Services Management Program of the ESAP and Health Advisor of the Presidency of the Republic of Colombia. He is a Doctor in Medicine and Surgery from the University of Santander and has a Master's in Community Medicine from University of London and is certified in Knowledge Management.



**Antonio García** is a project management professional with over a decade of experience in knowledge and learning. He has worked at the Inter-American Development Bank (IDB) in Washington, DC (USA) since 2012. He initially joined the Country Department for Central America (CID), Mexico, Panama, and the Dominican Republic and later the Integration and Trade sector. Currently, Antonio is Operations Coordinator of the IDBx program, the IDB training initiative in edX. Prior to joining the IDB, he worked in the Chamber of Commerce and Industry of Toledo in Spain as a foreign trade specialist providing training programs in business internationalization for

small and medium enterprises. He is a lawyer with an MBA, with a focus on multilateral projects from the Center for Economic and Commercial Studies (CECO). He also holds a master's degree in International Business from the School of Industrial Organization (EOI).



**Carlos Macher** is an E-Learning Technologist and Audiovisual Producer for the IDBx Program of the Inter-American Development Bank. He has worked for more than eight years in the management of information technology, data analysis, audiovisual productions, and multimedia interactive innovation in online education initiatives for the social development of Latin America and the Caribbean. Prior to joining the IDB, he worked for five years as a Communications, Multimedia, and E-Learning Specialist at the Organization of American States and in Peru as a Producer

and Director for different TV and Film projects. Has a Bachelor's in Communications and a specialization diploma in Audiovisual Production at the University of Lima in Peru. Macher is currently is a candidate for a Master's in Fine Arts in Film and Electronic Media at American University.



**Dou Zhang** is a policy analyst and researcher. Dou is currently working at the Doing Business team of the World Bank Group. Prior to the World Bank, Dou was working at the Inter-American Development Bank on evaluations and data analytics that relate to e-learning. Dou holds a Master's of Public Policy degree (M.P.P) from the George Washington University and is currently pursuing a Ph.D. of Public Policy and Public Administration degree from the same university. Originally from China, Dou currently lives

in Washington, D.C.

## Section 5: Government Policies and Strategies

### Chapter 19. Advancing Open Education Policy in Brazilian Higher Education

- Tel Amiel, Professor at the School of Education at the University of Brasília where he coordinates the UNESCO Chair in Distance Education, Brasília, Brazil
- Tiago Chagas Soares, São José dos Campos, SP, Brazil

**Abstract:** Brazil has made significant strides in advancing open education policies in recent years. One of the most significant developments was the adoption of an open license policy for the Open University of Brazil (UAB), a consortium of over 100 public higher education

institutions. We report on a survey conducted with a large sample of participants from these institutions. The research was developed as part of an ongoing review on OER projects and policies (both national and internationally). The survey data identified the need for increased awareness and understanding of the meaning of openness and what effectively constitutes an OER. These data also indicate categories related to institutional encouragement for OER production as well as significant interest in the implementation of policies to advance openness; however, progress on actual policy implementation has been quite limited. The authors of this chapter argue that although open education is often seen as 'incipient' in Latin America, significant developments are now actually taking place. Such developments could offer an opportunity to reflect on the local conditions and levers to advance policy design and implementation



**Tel Amiel** completed his PhD in Instructional Technology at the University of Georgia. He currently is Professor at the School of Education at the University of Brasília where he coordinates the UNESCO Chair in Distance Education. He was previously coordinator of the UNESCO Chair in Open Education (Unicamp). He has also been a visiting fellow at the University of Wollongong as well as Stanford University, and a visiting professor at Utah State University. His interests are in the areas of open education and educational technology, with particular focus on schooling and teacher professional development.



**Tiago C. Soares** is currently finishing his PhD in Economic History at the University of Sao Paulo. He is conducting research with the UNESCO Chair in Distance Education (University of Brasilia) and the Latin American Network of Surveillance, Technology and Society Studies (Lavits). A longtime activist in Brazil, his research follows historical and contemporary developments between political economy, technology, and society. Previously, he carried out projects with institutions such as the UNESCO Chair in Open Education (Unicamp), Open Knowledge Foundation Brazil, and the World Social Forum. As a writer, his work has been published by Le Monde Diplomatique (Brazil) and Vice Media, among others.

## **Chapter 20. Global Trends and Policy Strategies and their Implications for the Sustainable Development of MOOCs in Malaysia**

- Purushothaman Ravichandran, Dean of Centre of Postgraduate Studies, University College Fairview, Malaysia, Kuala Lumpur, Malaysia

**Abstract:** Massive open online courses (MOOCs) in Malaysia has been the primary focus of many universities since they first launched in September 2015. According to Global E-Learning

Market Analysis and Trends in 2017, the global eLearning market is poised to grow at a compound annual growth rate of around 7% over the next decade to reach approximately \$330 billion by 2025. However, it is not entirely clear how the MOOC approach to online education can be fiscally sustained. Such financial concerns also need to be viewed from the standpoint that the Malaysia government intends to have 15 percent of all Malaysian public university courses taught online as MOOCs by the end of 2015 and 30 percent of all university courses by the year 2020. Given the various reasons to learn from MOOCs, whether intrinsic or extrinsic, there needs to be a clear understanding of how government strategies and policies influence institutional policies toward sustainable MOOC development. As such, this chapter discusses the global trends and policy strategies and their implications for the sustainable and continually expanding development of MOOCs in the Malaysian context.



**Purushothaman Ravichandran** is currently Dean at University College Fairview, Malaysia. His work experiences include teaching a wide spectrum of students ranging from pre-university to the PhD level for the past 30 years. He has a PhD in Education with a specialization of Pedagogical Leadership and had completed his second PhD in Information Technology with a specialization in student modelling for Intelligent Tutoring System (ITS). He had taken several roles in the field of Education as an author, researcher, keynote speaker, teacher trainer, curriculum designer, module writer, and external examiner for PhD students.

## **Chapter 21. OERs for Development (OERs4D) Framework as Designed and Implemented in the Philippines**

- Melinda dela Pena Bandalaria, Chancellor & Professor of Development Communication, University of the Philippines Open University, Los Baños, The Philippines

**Abstract:** Developing countries are often perceived as resource-poor and on the receiving end or recipients of initiatives by developed countries. The same perspective is usually applied to education and is usually concretized in the outbound internationalization especially among higher education institutions (HEIs). When massive open online courses (MOOCs) and open educational resources (OERs) were initially introduced, there seemed to be no reason why developing countries would have to “reinvent the wheel” and think of developing their own MOOCs and OERs. The Philippines provides a case study wherein MOOCs and OERs were developed, produced, and offered by a developing country under the framework Open Educational Resources for Development (OERs4D). The framework provided the imperatives and considerations for the development of original OERs and MOOCs within the Philippines. It also fostered the redefinition of MOOCs as practiced and contextualized in the country, the MOOCs as OERs model, and the integration of Universal Design for Learning principles to both MOOCs and OERs. This model addresses the challenge of sustaining the initiative and ensuring that both MOOCs and OERs will be fully utilized. Initial implementation of the OERs4D Framework shows promising results while unraveling key areas in need of improvement and refinements.



**Melinda Bandalaria** is Chancellor and Professor at the University of the Philippines Open University. Previously, she served as Dean of the Faculty of Information and Communication Studies. Dr Bandalaria has developed and handled distance elearning courses both at the undergraduate and graduate levels as well as massive open online courses (MOOCs). She has also been actively involved in research and community development projects. From 2017-2019 Professor Bandalaria served as President of the Asian Association of Open Universities. She has also been chairing the Asian Massive Open Online Course (MOOCs) steering committee since 2016. In these capacities, Mel has helped coordinate international conferences on open education and written extensively on e-learning in the Philippines.

## **Chapter 22. Disruptive Learning: Inspiring the Advancement of MOOCs in the Middle East**

- Abtar Darshan Singh, Professor and Dean, School of E-Education, Learning & Academic Development Division, Hamdan Bin Mohammed Smart University, Dubai, UAE
- Sumayyah Abuhamdieh, Education Consultant/Individual Specialist, International Institute for Educational Planning, UNESCO, Amman, Jordan
- Shriram Raghunathan, Associate Professor, Programme Chair- Gaming Technology, School of Computing Science and Engineering (SCSE), VIT Bhopal University

**Abstract:** This chapter traces the interesting dynamics of MOOCs in the Middle East. It is a part of the world with a young and growing population. It is also a mix of regions with extremes in technological connectivity ranging from fully modern to scarce availability. In addition, there are refugee camps where traditional education systems cannot work. Add to that a preference for local language content and the need for non-traditional skill-based offerings and it is not surprising that there is diverse participation in MOOCs with proliferating public and private support. Clearly, the Middle East MOOC landscape has tremendous potential to grow and meet the needs of its population provided that accreditation requirements are met along with common standards across the region. There is also a need for increased governmental involvement and support, diverse skill education offerings in Arabic, and employer involvement. Finally, this chapter highlights the opportunity for focused studies that trace current MOOCs in depth and analyzes the factors that are involved. It ends with vital recommendations for Arab-MOOC (A-MOOC).



**Abtar Darshan Singh** is Dean of School of E-Education at Hamdan Bin Mohammed Smart University, Dubai, UAE. She has published widely in instructional design, multimedia, online learning, blended learning, learning objects, MOOCs, and smart learning. Her current research interests are learning design, smart learning environments, next-generation digital learning environments, and design thinking. Abtar is a recipient of numerous awards such as a Fulbright Scholarship, a Blackboard Excellence in e-Learning Award, and an Innovative Excellence in Teaching Award. She

has consulted widely with impactful projects related to e-learning under world bodies such as UNESCO and Commonwealth of Learning (COL). She is on the International Advisory Board for Educational Technology in Higher Education (ETHE) journal. She recently co-edited a book with IGI Global titled, *Cases on Smart Learning Environments*.



**Sumayyah Abuhamdeih** is an Education Specialist who worked in the field of Education for 20 years as a K-12 teacher, university lecturer, interpreter, and translator in the private sector. She later moved to UNESCO where she worked on educational projects such in teacher professional development, informal education, developing educational strategies for the Ministry of Education and Vocational Education. Currently, Sumayyah is involved in an IIEP project in Jordan for developing the capacities of Ministry of Education staff in Crisis Risk Management planning. Sumayyah has a BA in English language and Literature and an MA in Curriculum and Teaching Methods from the University of Jordan. She can be contacted at [sumayaabuhamdeih@yahoo.com](mailto:sumayaabuhamdeih@yahoo.com).



**Shriram Raghunathan** works on natural language processing, instructional design, and gaming. He completed his PhD in computer science and engineering in 2008 and received his master's degree in Instructional Design (online) from the Open University of Malaysia. He set up India's first Centre of Excellence in Pervasive Computing in 2007. He also completed several funded projects (e.g., mobile Tamil interfaces, mobile keypad standardization, and plagiarism checking) in Tamil Computing. Shriram has published widely in domains of cloud computing, natural language processing, and instructional design. He recently co-edited a book with IGI Global, titled, *Cases on Smart Learning Environments*. He currently is Associate Professor and Programme Chair of the Gaming Technology Division in the School of Computing Science and Engineering (SCSE) at VIT Bhopal.

## Section 6: Organizational Innovations

### Chapter 23. Open Education at the World Bank: A Significant Dividend for Development

- Sheila Jagannathan, Head of the Open Learning Campus at the World Bank Group in Washington, DC, USA

**Abstract:** Technology disruptions and other factors have caused unprecedented change in workplace arrangements, necessitating individuals and institutions to invest in continuous learning for increased economic value. The World Bank Group (WBG) has invested significantly in digital and blended development learning through an open, interactive, and virtual ecosystem called the Open Learning Campus (OLC). The OLC's potential to support continuous learning and to build skills to prepare for future job opportunities and workplace settings in the context of the Fourth Industrial Revolution are considerable. Massive open online courses (MOOCs) are a major catalyst of such societal changes due to their broad global reach and democratization of

knowledge. Lessons from delivering MOOCs for global audiences on development topics are highlighted as they have wider applicability for learning providers. In the past, MOOC topics from the World Bank have included climate science to action, digital technologies, managing risk for development, citizen engagement, financing for development, public-private partnerships, and the future of work. Next up are MOOCs on maternal health and learning to realize education's promise.



**Sheila Jagannathan** is the Head of the Open Learning Campus at the World Bank Group in Washington DC. She serves as the organization's focal point on digital learning and issues at the intersection of technology use and education in emerging countries. She is an innovative and strategic educational leader with over 30 years of experience in designing and managing distance learning programs/knowledge products and transforming the use of online and classroom pedagogies and technology. Sheila also provides policy advice and technical assistance to World Bank country-level capacity building programs in East Asia, China, Africa, the Middle East, and South Asia. She is on the advisory board and planning committees of major professional associations of elearning such as the E-learning Africa and the International Conference on E-Learning (ICEL).

#### **Chapter 24. From OER to OEP: The case of an OER-Integrated Teacher Education eLearning Program in Africa**

- A. Atieno Adala, Director Center for Enhanced Learning and Teaching, United States International University (USIU), Nairobi, Kenya.

**Abstract:** Does adoption of open education resources (OER) lead to the emergence of open educational practices (OEP)? The focus of this chapter is an ICT-integrated teacher education project that was implemented by the African Virtual University (AVU), an organization that works through a consortium of universities in Africa to help them build their capacity to exploit ICTs for the delivery of distance and eLearning programs. This multinational teacher education project was implemented between 2005 and 2011 in 12 institutions across 10 African countries. Six of those institutions are represented in this study and are located in Kenya, Tanzania, Uganda, Somalia, Zambia, and Zimbabwe. A teacher education degree program in math and science was delivered through a combination of online and eLearning programs. A central component of the project was that the course instructional modules be developed as OER textbooks. For that reason, the practice of creation of such open materials took place at the level of the consortium. It was at that level that the AVU OER was created and module authors were faculty drawn from the participating universities. The practice of OER use happened at the level of each institution and was especially facilitated by the fact that they were introduced as instructional resources for a degree program. Faculty used OER as a resource for course development, for training new faculty, for lesson preparation, and for student readings. Use also led to the other practices of repurposing, creation, and sharing, but to a lesser extent. Overall, the practices seemed to happen more at the level of the individual faculty than at the institutional level. Accessibility, institutional policies, and appropriate knowledge were some of the factors considered important in promoting institutional moves toward OEP.



**A. Atieno Adala** is Director Centre for Excellence in Learning and Teaching, and Associate Professor at United States International University (USIU) Africa located in Kenya. She is *Research Mentor* for the International Research Collaborative for Established and Emerging Scholars [IRCEES] in Educational Technology, a collaboration between e/merge Africa and the AECT Culture, Learning and Technology division. She is currently an instructional design consultant and lead evaluator for the Sexual and Reproductive Health and Rights (SET-SRHR) project being implemented in Uganda by the Institute for Social Studies at Erasmus University as part of the Netherlands Initiative for Capacity Building in Higher Education (NICHE). Before that, Dr Adala was with the African Virtual University (AVU), Kenya, as Manager Research where she led the AVU research and development agenda in open, distance, and eLearning. She received her PhD in Instructional Systems Technology and Master of Public Health from Indiana University Bloomington.

## **Chapter 25. Responsive innovations in MOOCs for Development: A case study of AgMOOCs in India**

- Balaji Venkataraman, Director for Technology and Knowledge Management, Commonwealth of Learning, Burnaby, BC, Canada
- Tadinada V. Prabhakar, Professor, Department of Computer Science and Engineering, Indian Institute of Technology Kanpur (IITK), India

**Abstract:** How can MOOCs reach learners in areas where Internet bandwidth is limited? How can teachers in developing countries, with minimal familiarity with online learning, participate in design and delivery of MOOCs? In their chapter, Venkataraman and Prabhakar explore these concerns and show that the way forward is through learning delivery innovations. They present a case study involving MOOCs in food and agriculture in India. As a sector that is among the least influenced by online learning, there is much potential for MOOCs in agriculture. Most students and faculty in agricultural universities in the developing world live and work in situations of inadequate bandwidth. In response, the authors present their results and insights from experiences with 16 MOOCs in agriculture. Their findings reveal that innovative deployment of messaging systems and opportunities to access content offline can increase engagement in the learning process.



**Balaji Venkataraman** is Vice President of the Commonwealth of Learning (COL), Vancouver, Canada. He is a worker in the area of IT applied to agricultural development and learning. His current interests are in deploying new generation mobile devices in rural learning and in examining the advantages of MOOCs in support of skill development. Balaji received his master's and doctoral degrees from the Indian Institute of Technology and the University of Madras.





**Tadinada V. Prabhakar (TVP)** has a PhD in Computer Science from IIT Kanpur and has been teaching there since 1986. His research interests are in the areas of software architecture (which is about building large scale software), knowledge management, and Indian language computing. Suffice to say, he loves to build software systems. Currently, TVP is working in the field of online education where he has built a MOOC Management System called mooKIT with several innovative features for developing countries. To date, the mooKIT has been used in more than 60 courses. His other area of interest is in ICT in agriculture where he built systems like Agropedia, AgroTagger, and Agriculture Advisory delivery systems. He is currently running an initiative called AgMOOCs which has delivered 16 MOOCs in Agriculture.

## **Chapter 26. Implementing a Skills Accelerator to Prepare Students in Kenya for Online-Only Bachelors and MBA Programs that Require MOOCs and OER: A Case Study**

- Michael Mayrath, Vice President of Learning and Product Development, Tiber Health (also leads product development at Ponce Health Sciences University, Puerto Rico and is senior advisor to Knod Global Learning Network)
- Craig Brimhall. Ph.D. Student in Management, David Eccles School of Business, University of Utah Salt Lake City, UT, USA
- Graham Doxey, Founder, CEO, Knod (Knōd is a 21st Century learning experience that enables learners to qualify for jobs that require two years of experience and provides employers with local pipelines of talent, globally), USA
- Scott Doxey, MD Student Life Engagement, Knod Global Learning Network and Portfolio Executive Leader, CampusWorks, Buena Vista, VA, USA
- Joshua Stroup, CEO of LearnerEdu, Edupreneur, Riverton, UT, USA

**Abstract:** This chapter provides an instructional framework for on-boarding students with low technological fluency in preparation for online-only higher education programs in emerging economies. The framework, which was launched in Kenya, resulted in MOOCs and OER being leveraged as the primary content source for degree programs. Results from a mixed methods pilot study, with a sample of 233 students, showed that while student attitudes towards technology were positive, the students' technological experience and fluency was limited compared to students in non-emerging economies. Thus, a 10-14 day, face-to-face onboarding program was designed and implemented to help prepare students to successfully complete online-only courses that utilized MOOCs and OER for instructional content. Follow-up data showed that the intervention served as an important scaffold to launch students into their programs.



**Michael Mayrath** is Vice President of Learning and Product Development at Tiber Health / Ponce Health Sciences University. Dr Mayrath's professional mission is to integrate educational psychology and innovative technology to increase learning, motivation, and assessment outcomes. He leads product development for Tiber Health / Ponce Health Sciences University where he

is focused on improving healthcare and medical education. Dr Mayrath has conducted research and development for leading organizations, including the U.S. Air Force, Harvard, and Cisco. He received a Ph.D. in educational psychology and a Master's in program evaluation from the University of Texas at Austin. He is the lead editor of the book "*Technology-Based Assessments for 21st Century Skills: Theoretical and Practical Implications from Modern Research*" published by Information Age Publishing in 2012.



**Craig Brimhall** is a Ph.D. student in organizational behavior at the David Eccles School of Business at the University of Utah. His current research focuses on how employees and organizations learn from experience. Prior to beginning his doctoral studies, Craig was the managing director of learner engagement and an instructional designer at Knod. He has a Master's of Education degree from the Harvard Graduate School of Education and a Bachelor's of Science in Finance from Utah Valley University.



**Graham Doxey** is Founder and CEO of Knod. Graham has over 30 years of global experience successfully building and managing small and large enterprises, with the most recent 15 years focused on higher education. Currently, Graham and his team are building globally scalable solutions to the education to employment skills gap through an innovative experiential learning model. As a co-founder of Neumont College of Computer Science, Graham began a decade of creating innovative solutions to close the skills gap between higher education outcomes and industry needs. Exemplary results have been achieved through engaging employers in the learning process, implementing experiential learning pedagogies, and mapping regulator required learning outcomes with industry required skills.



**Scott Doxey** is Managing Director of Student Life Engagement at Knod. Scott is a higher education and information technology executive known for his ability to create and implement new ways of doing business and increasing efficiencies. Scott has a Master's degree in Business Information Systems and Education. He was part of the executive team at Knod managing the Student Services experience. Before Knod, Scott was the Vice President of Student Services and Operations at Southern Virginia University. Scott was also part of the executive team at Neumont University as Vice President of Academic Affairs and Operations.



**Joshua Stroup** is an edupreneur whose passion for education started while working as a K-12 platform product manager at Apple Inc. Joshua then pursued a BS degree in Computer Science and a master's degree in Cybersecurity, with a published thesis titled, "*A Conceptual Modeling Language for the Conceptions and Misconceptions of Cybersecurity.*"

Joshua has worked to establish himself in the education entrepreneurial community and has taught at various higher education institutions and pursued several startups in an effort to combine his deep technical knowledge and educational experiences to construct a modern transformational world-class 21st-century educational experience.

## Section 7: The Future of MOOCs and Open Education

### Chapter 27. Evolution of Online Learning Environments and the Emergence of Intelligent MOOCs

- Paul Kim, Chief Technology Officer and Assistant Dean, School of Education, Stanford University, USA
- Jieun Lee, Graduate Student, Hanyang University, Korea

**Abstract:** The recent advancement in the field of data analytics and artificial intelligence (AI) has led education innovators to design and deploy a series of learning technology solutions and assessment models for the entire K-16 education spectrum and beyond. With increasing investments from the private sector, numerous companies have launched solutions that are claimed to help most all stakeholders in the education ecosystem. While the ultimate implications and the scope of these emerging solutions on online education and especially MOOCs remain unclear at this time, they nonetheless call for scholarly discussions at multiple levels. In an attempt to explore ways to understand and leverage AI and relevant features designed to promote higher order learning and enable assessment strategies involving new types of future learning activities, we discuss some of the notable innovation examples integrating AI and their future potentials in education. In addition, we discuss some of the AI-based scaffolding and assessment tools now in development.



**Paul Kim** is the Chief Technology Officer and Assistant Dean of the Graduate School of Education at Stanford University. He served as an advisory committee member for National Science Foundation, member of the Grand Challenges for International Development Committee at the National Academy of Sciences, a member of the board at WestEd, a member of the advisory committee at Edify.org, and an advisory member to Exceed Capital. He taught a MOOC on designing new learning environments in the Stanford Venture Lab (now called NovoEd) which attracted over 20,000 students from around the world. His government-backed international development projects include the design of a new science and technology university for the Sultan of Oman as well as the strategy design for the national online learning initiative of Saudi Arabia. Dr Kim has also been involved in a national education technology assessment initiative for Uruguay. He founded Seeds of Empowerment, a non-profit global education organization and developed SMILE (Stanford Mobile Inquiry-based Learning Environment), a program recognized as one of the most innovative education models by the United Nations in 2016. He can be contacted at [Phkim@stanford.edu](mailto:Phkim@stanford.edu).



**Jieun Lee** is a curriculum developer, trainer, and graduate student. For the past decade, Jieun has been developing ICT-integrated pedagogies and facilitating training programs with topics such as design thinking, entrepreneurship, youth empowerment, and SMILE (Stanford Mobile Inquiry-based Learning Environment). Recently, she taught SMILE Entrepreneurship and SMILE teacher training programs at numerous universities and metropolitan school districts in Korea. Prior to joining Hanyang University as a graduate student in educational technology, she helped develop ICT teacher training programs in Sri Lanka and design thinking programs with SAP. She is currently the Director of Academic programs for SMILE Korea.

## **Chapter 28. MOOCs and Open Education in the Global South: Future Opportunities**

Tom Reynolds, Professor, National University

Thomas C. Reeves, Professor Emeritus, The University of Georgia

Curtis J. Bonk, Professor, Indiana University

Ke Zhang, Professor, Wayne State University

### **Abstract:**

Evident in the closing chapter is that the present examination of the MOOC and OER landscape across the Global South has proved to be filled with innovation, progress, and success, but many future opportunities and challenges are also equally apparent. Directing attention at how big data, AI and data analytics can contribute to a more comprehensive analysis and accounting of education change and impact, the authors encourage readers to take up the challenge and become innovators, chroniclers, or participants in the burgeoning Global South OER ecology. Guidance for those undertakings is provided by way of positing predictions that will characterize and influence future OER-based endeavors. The key takeaway for the four chapter authors and book editors, Tom Reynolds, Tom Reeves, Curt Bonk, and Ke Zhang, is that the current edited volume offers hope and optimism for the future of OER across the Global South and beyond. Although warranted, such optimism is dependent upon the continuation and further expansion of the trends and insights established in the stories and analyses of the sixty-eight contributors to this book.



**Thomas H. Reynolds** is a professor of Teacher Education at National University in La Jolla, California where he researches design of online learning, standards-based online assessment, and innovations in e-learning. Among his awards and honors are two Fulbright Scholar awards (2010 in Colombia where he researched open educational resources and 1998 in Peru where he lectured on Web-based learning and technology-enhanced instruction), a Texas A&M University honored faculty recognition, director and co-principle investigator of a multi-million dollar center for professional development and technology, and, in 2016, the First Place Book Award from the AECT Division of Distance Education (DDL) for “*MOOCs and Open Education Around the World*” that was co-edited with Mimi Lee, Curt Bonk, and Tom Reeves and published by Routledge. Present activities and responsibilities

include research on the status e-learning in Latin America and academic program direction of an e-teaching master's degree at National University. He can be contacted at [treynold@nu.edu](mailto:treynold@nu.edu).



**Thomas C. Reeves** is Professor Emeritus of Learning, Design, and Technology at The University of Georgia. Professor Reeves has designed and evaluated numerous interactive learning programs and projects. In recognition of these efforts, in 2003 he received the AACE Fellowship Award, in 2010 he was made an ASCILITE Fellow, and in 2013 he received the AECT David H. Jonassen Excellence in Research Award. His books include *Interactive Learning Systems Evaluation* (with John Hedberg), a

*Guide to Authentic E-Learning* (with Jan Herrington and Ron Oliver), and *Conducting Educational Design Research* (with Susan McKenney). His research interests include evaluation, authentic tasks for learning, educational design research, and educational technology in developing countries. He can be reached at [treeves@uga.edu](mailto:treeves@uga.edu) and his homepage can be found at <http://www.evaluateitnow.com/>.



**Curtis J. Bonk** is Professor at Indiana University teaching psychology and technology courses. He is a passionate and energetic speaker, writer, educational psychologist, instructional technologist, and entrepreneur as well as a former certified public accountant and corporate controller. He has published more than 340 manuscripts and spoken in dozens of countries around the world. Among his numerous research and teaching awards are the Cyberstar Award, the Charles Wedemeyer Award for Outstanding

Practitioner in Distance Education, the AACE Fellowship Award, and the Online Learning Journal Outstanding Research Achievement Award in Online Education. Bonk has been annually named among the top 100 contributors to the public debate about education from more than 20,000 university-based academics. He has authored a dozen books including, *The World Is Open*, *Empowering Online Learning*, *The Handbook of Blended Learning*, *Electronic Collaborators*, *Adding Some TEC-VARIETY* which is free (<http://tec-variety.com/>), and, *MOOCs and Open Education Around the World* (<http://www.moocsbook.com/>). He can be contacted at [cjbonk@indiana.edu](mailto:cjbonk@indiana.edu) and his homepage is at <http://curtbonk.com/>.



**Ke Zhang** is a Professor in Learning Design and Technology at Wayne State University in Detroit, Michigan, USA. As a multi-lingual, international educator and researcher, her work focuses on e-learning, innovative technologies and emerging methods for research and development. Her collaborative research is supported by federal government and agencies, like the US Department of Health and Human Services and National Institute of Health, as well as private foundations, with multi-million grants to design, develop and research on emerging technologies for education, professional development, and health information management. Dr. Zhang is also a popular speaker and consultant in Asia, Eurasia, the Middle East, Latin

America and North America. She has consulted for large scaled projects and initiatives by

international organizations, national governments and agencies, corporations, educational institutions and healthcare systems in the USA and overseas. Inquiries are welcome by email to: [ke.zhang@wayne.edu](mailto:ke.zhang@wayne.edu).

