

## Editorial Éditorial

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## Editorial / Éditorial

**Professor Mohamed Ally**

**Professor Weiyuan Zhang**

This special issue of the Canadian Journal of Learning Technology contains articles presented at the *Rethinking Online Education in the Knowledge Society with Emerging Technology Symposium* jointly hosted by Beijing Normal University, Athabasca University, and Chongqing Open University in November 2021. The symposium was organized by the Chongqing Open University, China.

The first article, *Theoretical Development of Connectivism through Innovative Application in China*, on connectivism in MOOCs by Li Chen and Yaqian Xu from Beijing Normal University sets the stage to discuss how education can be innovated to reach massive audiences to help reach the United Nations' goal of Education for All and the Sustainable Development Goal 4 "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all." The MOOC research team at the Distance Education Research Centre at Beijing Normal University designed and developed the first massive open online course in China, adapting a connectivist (cMOOC) approach. Using the data collected from six offerings of the cMOOC over three years, the big data paradigm was used for data analysis including complex network analysis, content analysis, text mining, behaviour sequence analysis, epistemic network analysis, and statistical and econometric models.

*Artificial Intelligence in the Fourth Industrial Revolution to Educate for Sustainable Development* by Mohamed Ally and Kirk Perris is timely because of the increasing interest in the use of fourth industrial revolution technologies, such as artificial intelligence, to help achieve the Sustainable Development Goals. Also, there is rapid development for using fourth industrial revolution technologies in society. This article addresses how artificial intelligence can be used for education and sustainable development.

Jingxin Jiang and Fei Victor Lim write *Designing Knowledge Dissemination in a Digital Era – Analysing TED Talk's Multimodal Orchestration* which examines how scientific knowledge is disseminated in one of the most widespread academic genres, TED Talks, and shares discursial similarities with other academic genres such as online lectures. The study adopted a systemic functional multimodal discourse analysis approach to explore how a presenter used speech, images, and gestures to disseminate knowledge.

Tammy Soanes-White's *Defining and Exploring Broadband Connections and Education Solutions in Canada's North* addresses broadband connections in northern Canada. It analyzes the impacts that broadband capacity and Internet access have on remote education by examining geographic information system data, which offers a framework that connects spatial and temporal data to analyse accessibility of remote education.

*Analysis of the Status and Influencing Factors of Online Learning* by Jiaju He, Hong Zhao, and Fei Jiang describes a study that used a questionnaire survey with primary and high school students. The survey was conducted from four aspects: demographics, online learning preparation, online learning situation, and online learning experience. This study thoroughly investigates the status and problems of students' online learning and analyses the characteristics of students' online learning and the differences among the grades.

The article *It's Happy Hour Somewhere: Videoconferencing Guidelines for Traversing Time and Space* by Aga Palalas, Rebecca Heiser, and Ashley Gollert claims that one benefit of videoconferencing is that it can address time and distance boundaries. With this advantage also comes a challenge - the pressures of time and time not being used purposefully often negatively impact the online learning experience and the digital wellness of its participants. Drawing on a systematic review of the relevant literature of the last decade, temporal guidelines have been distilled to promote the design of videoconferencing-based learning that is conducive to successful learning while maintaining digital well-being.

Jeanne Kim examines *The Interconnectivity of Heutagogy and Education 4.0 in Higher Online Education*. Industry 4.0 advancements in technology are creating a dynamic and fast-changing world that affects how we live and work. Heutagogy, or self-determined learning, is an approach that promotes critical thinking, social-emotional skills, and life-long learning. Educators need to rethink existing teaching approaches to better prepare learners for future careers that Industry 4.0 will create. Kim makes recommendations on principles of heutagogy as an effective teaching and learning approach to meet the skills and needs necessary for Education 4.0.

In *Dynamic Evolution Analysis of Social Network in cMOOC Based on RSiena Model*, Yaqian Xu and Junlei Du provide information on the first connectivist massive open and online course (cMOOC) in China, "Internet plus Education: Dialogue between Theory and Practice" as the research object, using the dynamic analysis method of social networks which is based on stochastic actor-oriented models, to reveal the influence of the individual attributes and network structural attributes on the dynamic evolution of social networks in a cMOOC.

*Cognification in Learning, Teaching, and Training: A Discussion* highlights how emerging trends in cognification could disrupt online education. Vivekanandan Kumar, Mohamed Ally, Avgoustos Tsinakos, and Helmi Norman team up to address cognification techniques that design complex data analytic models which allow natural intelligence to engage artificial smartness in ways that can enhance the learning experience. Cognification is defined as the approach to make something increasingly, ethically, and regulatably smarter.

*Teaching Architectural Technology Knowledge Using Virtual Reality Technology* by Yi Lu describes how to teach architectural technology knowledge using virtual reality. The traditional pedagogical method adopts a series of two-dimensional drawings to explain three-dimensional objects. While architectural design education has begun exploring integrating virtual reality tools in the classroom, especially in the early design stage, this article explores if virtual reality can assist in teaching architectural technology knowledge.

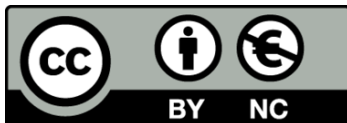
In *Removing Learning Barriers in Self-paced Online STEM Education*, Hongxin Yan, Fuhua Lin, and Kinshuk address how to remove barriers in online STEM education which is important because of increasing use of emerging technologies. They note that self-paced online learning provides great flexibility for learning, yet it brings some inherent learning barriers because of the nature of this educational paradigm. The authors propose some corresponding strategies to address these barriers in order to create a more supportive self-paced online learning environment.

The articles are written by experts and emerging scholars in the field of educational technology making this special issue relevant to readers at various levels in educational technology.

### Guest Editors

**Mohamed Ally** is Professor of Online and Distance Education at Athabasca University, Canada. His current areas of research include education in the fourth industrial revolution, mobile learning, online learning, distance education and use of emerging learning technologies in education. He is currently serving on three ISO committees to set international standards. Email: mohamed@athabascau.ca

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