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From "Innovation for Education" to "Education for Innovation": The 22nd Global Chinese Conference on Computers in Education

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Abstract
The 22nd Global Chinese Conference on Computers in Education (GCCCE) was held May 25–29, 2018, at South China Normal University, Guangzhou, China. Broadcasting live on the Internet, the Conference had 424 onsite participants with 299,816 online viewers from different countries and regions. The Conference hosted five keynote speeches, two expert symposiums, over 200 concurrent presentations, eight workshops, three teacher forums, one doctoral consortium, and two poster sessions. This report synthesizes the keynote speeches and award-winning presentations to share some of the Conference highlights with readers.

Keywords Innovation for education · Education for innovation · Collaborative learning · Digital learning · Mobile learning · Artificial intelligence

Introduction

The Global Chinese Conference on Computers in Education (GCCCE) is an annual, international conference organized by the Global Chinese Society for Computers in Education. The Conference is a major academic event for researchers, practitioners, and policy makers related to educational technology field among Chinese communities worldwide. The 22nd GCCCE was held May 25–29, 2018, at South China Normal University, Guangzhou, China. The 22nd GCCCE had 424 onsite participants from different countries and regions including Canada, Malaysia, Mongolia, Singapore, and the United States of America (GCSCE 2018, p. 5). Broadcasting live on the Internet, its presentations had been watched 299,816 times during the Conference. With the theme *From* "*Innovation for Education*" *to* "*Education for Innovation,*" the 22nd GCCCE offered nine sections:

- Science of Learning and Computer Supported Collaborative Learning
- Digital Classroom, Mobile and Ubiquitous Learning
- Joyful Learning and Society
- Technology in Higher Education and Human Performance
- Teacher Professional Development and Educational Policy
- Technology Enhanced Language Learning
- Learning Analysis, Assessment, and Artificial Intelligence (AI) in Education
- Science, Technology, Engineering and Mathematics (STEM) and Maker Education
- Digital Technology, Innovation, and Education

The following describes the Conference highlights through the keynote speeches and award-winning presentations.

Keynote Speeches

Five scholars presented the keynote speeches. In the first keynote speech titled *Innovation challenge of the industrial revolution 4.0 and new layout of intelligent education,* Professor Qintai Hu from South China Normal University pointed out that future education reform requires profound knowledge and

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understanding of the rationale, system, and mode of intelligent education. Hu summarized eight new trends of intelligent and information technology integration in education: (1) cross-media learning where educational resources, services and individual learning existing across multiple media; (2) Internet-plus Education, an innovative Internet-supported approach towards integration of online and offline learning to meet diverse needs of future learners; (3) increased use of big data to improve education performance including education governance; (4) inclusion of Artificial Intelligence (AI) in learning processes; (5) Virtual Reality (VR) and Augmented Reality (AR) to diversify knowledge expressions, authenticity of knowledge interactions, and knowledge sharing in education; (6) Internet of Things to change the current perception of knowledge application and to enable manipulation of things through the Internet in education; (7) universal computing to enhance adaptability of education services and support personalized learning; and (8) social networks to facilitate collaboration and promote lifelong learning. Based on these new trends, Hu suggested educators reflect on educational practice and philosophy to understand the extensive impact of new technology development on education. Consequently, to nurture talents in intelligent education that promote social and lifelong learning, teaching pedagogy and research methodology should be re-formed, and learning spaces should be reconstructed in innovative ways (Hu 2018).

The second keynote speaker, Dr. Qiong Wang from Beijing University, introduced a MOOC project conducted in collaboration with her colleagues from various universities to improve teachers' teaching competency (http://tmooc.icourses.cn). Wang summarized merits of using MOOC in teacher training, which include encouraging and engaging the teacher learners, providing equal opportunities, catering to the needs of teachers as learners, and providing individuals within the MOOC community opportunities to learn from each other. Dr. Wang highlighted four modes in using MOOC for teacher training: (1) MOOC as the exclusive learning resource and method; (2) MOOC for basic knowledge + offline practice for reinforcement + offline examination; (3) MOOC for basic knowledge + offline practice for reinforcement + feedback and guidance for improvement; and (4) Face-to-face instruction as the predominant learning resource and method + MOOC as complementary resource (Wang 2018).

The third keynote speech by Dr. Michael Spector from University of North Texas was on the similarities and differences of the emerging educational technology used in China and the USA through the lenses of the Higher Education Horizon Report 2017 and the National Educational Technology Plans of the two countries. Dr. Spector pointed out that both China and the USA emphasized the importance of educational technology in developing the twenty-first century skills with five C's (Communication, Collaboration, Critical thinking, Creativity, and Contemplation). He also elaborated on how emerging technologies, such as AR and VR, flipped classrooms, games, and other wearable devices had been used effectively to develop skills. He suggested a more holistic and developmental approach be used to support the sustained development of the five C's for school children. In his speech, Dr. Spector also shared his view on AI and Human Intelligence with a belief that AI should play a role of assisting human beings in task completion (Spector 2018).

Dr. Jianwei Zhang from the University at Albany-SUNY delivered the fourth keynote speech, *It Takes a Social System to Raise Creativity*. Dr. Zhang called for research-based technology innovations to transform schools into creative social systems to prepare students for creative careers in the twenty-first century. Creativity takes place as sustained idea advancement beyond short sparks of ideas. The process is usually supported by a dynamic system of social interactions, whereas ideas are being continually built up by interactive peers, leading to new, often unexpected advances and deeper understanding of problem solving. The sustained inquiry is further supported by interactions across teams as a whole connected field. To incorporate creative inquiry and collaboration into classrooms, Dr. Zhang suggested for collaborative learning to go beyond pre-defined, short inquiry activities to enabling a dynamically-sustained inquiry trajectory, which facilitates and promotes cross-classroom collaborations and extends inquiry over school years. Dr. Zhang also shared his Idea Thread Mapper (ITM) project to explore how such dynamic, student-driven inquiry can be supported in learning. ITM incorporates visual tools and analytics to discover emerging directions from online discourse, co-organize unfolding strands of inquiry, and make the collective structures visible for ongoing reflection. With assistance from ITM, his research team discovered that students achieved more in learning, and the inquiry processes went beyond teacher-structured ones to those co-constructed by teachers and students (Zhang 2018).

The fifth keynote speaker, Dr. Sherry Youhua Chen from the Graduate Institute of Network Learning Technology, National Central University, Taiwan, introduced her team's research on applying digital learning tools to help students enhance academic English. She shared her project's research rationale, experimental design, and results based on team analysis of the participants' learning behaviors, including how individual differences (background, gender, cognitive styles and prior knowledge, and technology skills and preferences) affect students' reactions to digital learning tools. She encouraged researchers to consider individual differences while

using digital learning to improve academic English learning skills. For research on the topic, Dr. Chen suggested including customization and personalization to accommodate students' individual differences, comparing the effectiveness of customization and personalization for academic English learning, and developing the criteria of usability and credibility for the evaluation of the effectiveness of customization and personalization in instruction (Chen 2018).

Award Winning Presentations

Beyond the keynote speeches, presentations of various topics at the 22nd GCCCE also attracted conference participants. Qionghui Qiu, Yuting Qiu, and Yingjun Zhou, who received the Best Paper Award at the Conference, shared their research project exploring the participating patterns and performance of 60 fifth-grade Taiwanese students in a digital curation learning activity. They used a curation platform to collect student data from content collection, feedback, task completion, participation time, and peer reviews of the project. The presentation demonstrated their cluster analysis of the data that categorized participants into four types: Active, Confined-to-task, Lurking, and Less-involved. Their findings indicated that Active participants had better performance than students of the other types, with Confined-to-task group and Lurking group ranking as second and third (Qiu et al. 2018).

Zhongxiu Lu, Xue Luo, Maiga Chang, Rita Kuo, and Kuochen Li, who received the Best Technical Paper Award at the Conference, presented on how they designed learning activities in role-playing games with a balance between having fun and promoting knowledge construction. They proposed two major stages in integrating learning contents into the role-playing games with four principles for designing learning activities in the games. In an attempt to evaluate the effectiveness of the designed learning activities in improving student motivation, they conducted a one-semester-long experiment in the Spring of 2018 in north Taiwan, with an expectation of additional results at the end of the experiment (Lu et al. 2018).

Additionally, the Best Teacher Paper Award went to Yongyi Liao, who reported her research on the effect of the Visualization Instruction Approach (VIA) in a Chinese reading course. Following the STILE (i.e., Situation, Thinking, Interaction, Lecture, & Evaluation) teaching model, Liao used a visualized tool of Fishbone Diagram to help students understand the gist and details of the reading materials. Through a one-year-long experiment, she found the experimental group improved more than the control group in overall learning.Furthermore, the experimental group showed an improvement in the ability to understand and analyze the reading materials. The study also revealed that students had positive attitude towards the VIA and increased their motivation for learning in the course (Liao 2018).

The Best Student Paper Award went to Xiulin Huang, Rixin Tang, Mingzhong Chen, Yilun Wu, Caiyuan Zhong and Zhengying Yang from several universities in Taiwan. The collaborative team used a free App, LINE, to help students enjoy instant and confidential communications with peers. This study collected data from 908 college students in Taiwan and analyzed the relations between the participants' personality and perceived social support. Results included how students with positive and negative extroversion perceived greater social support than those students with negative introversion. The team concluded that receiving and providing support in social communications were reciprocal and highly correlated with each other. They also suggested ways to make better use of the social support system to enhance student learning (Huang et al. 2018).

Conclusion

The 22nd GCCCE demonstrated efforts of those in the field to explore innovative practices in education and cultivate talents for the future. Topics such as MOOCs, creativity, socio-technical infrastructure design, analytics, AI and Human Intelligence, and new dynamic forms of instructional design, were discussed with exploration of new roles of teachers in the era of information and AI technologies. The Conference was of great success signified by its theme: *From* "*Innovation for Education*" *to* "*Education for Innovation.*" The 23rd GCCCE will be held at Central China Normal University in May 2019. Information about the conference is available online here: http://it.ccnu.edu.cn/GCCCE2019/home-en.html.

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