

SEMINAR SERIES

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► April 21 | Scarfe 1214 | 12:30 - 2:00 p.m.

A Comparative Study of STEM Educators' Views of Technology: A Case of Canada, China and Korea

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This paper describes the results of a pilot quantitative international comparative study that investigated how STEM educators in Canada, China and Korea view the roles of technology in their teaching. The study incorporated the Technological Pedagogical Content Knowledge and Deliberate Pedagogical Thinking with Technology frameworks to emphasize that in addition to the relevant knowledge necessary for effective use of educational technologies, teachers have to acquire positive attitudes towards its impact on student learning. The results of this pilot indicate that according to the self-reports of 195 Canadian, Chinese and Korean STEM educators who participated in this research, they have significantly different levels of pedagogical, content and technological knowledge, as well as are offered significantly different opportunities for incorporating technology in their teaching. The opportunities for support and technology-related professional development for STEM teaching also vary dramatically among the participants. Most importantly, STEM educators in these countries have disparate perceptions of the role of technology in STEM: Canadian educators focus on technology as a tool to promote individualized student learning, Chinese educators view the main goal of technology use as improving documentation of student learning, and Korean educators view technology as a tool to promote student content knowledge. While the sample of this pilot was rather limited, this study identified directions for the future study. This paper reports on the first pilot project in a forthcoming series of international comparative studies that will investigate how teachers in Canada, China and Korea view and utilize technology to promote their pedagogical goals.

Dr. Marina Milner-Bolotin has a M.Sc. in theoretical physics from the National University of Kharkiv, Ukraine and a Ph.D. in Mathematics and Science education from the University of TX, Austin. She earned her teaching certification at Bar-Ilan University in Israel. She has been a K-12 math and science teacher for 10 years (in Israel and in the US) and taught undergraduate physics courses for more than 10 years in TX, BC and ON. Her research explores how modern technologies can support math and science learning at K-12 and undergraduate levels, as well as teacher education. She has more than 40 publications, including an introductory physics textbook used by thousands of students across Canada and worldwide. She has won numerous research and teaching awards, including a Fellowship of the American Association of Physics Teachers (2016), UBC Killam Teaching Prize (2014), and Canadian Association of Physicists Undergraduate Teaching Prize (2010). She currently serves as an Associate Editor (physics education section) of the Canadian Journal of Physics.

* Light refreshments will be served at noon.

* Lecture will commence at 12:30 p.m.



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