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Design, Implement, and Evaluate Knowledge Building Courses in K-12 and Higher Education

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(1) The issue/problem

Knowledge building represents commitment to transform education into knowledge creation in a fundamental way (Scardamalia & Bereiter, 2006). It advocates students take collective responsibility and epistemic agency to constantly advance community knowledge (Scardamalia & Bereiter 2006, 2014). Aligning with this, Knowledge Building are defined by the twelve principles such as *real ideas and authentic problems*, *improvable ideas*, *epistemic agency*, *community knowledge and collective responsibility and embedded and transformative assessment* (Scardamalia, 2002). As a principle-based approach, Knowledge Building does not require students or teachers to follow step-by-step procedures or word-by-word scripts (Sawyer, 2004). In contrast, it enables students and teachers to engage in ideas they are passionate about, to contribute diverse theories, to reflect on their inquiry gaps, and to make adaptive classroom decisions to accommodate emerging needs (Zhang, Hong, Scardamalia, Teo, & Morley, 2011). However, the flexibility may cause some challenges for teachers.

(2) Major goals

In this workshop, teachers and researchers from China, Canada… will present how they design, implement and evaluate Knowledge Building in different subjects in K-12 and higher education. We hope to share and discuss with the audiences how to put the twelve principles into practice, how to design, sustain and evaluate Knowledge Building discourse.

(3) Clear description of the focus and the means by which the audience will be engaged

Design and Implement a Knowledge Building Course for Pre-service Teachers
Shaoming Chai, Gaoxia Zhu
In this case, 39 pre-service teachers (33 female and six Male, their average age is 20) participated in the course "Knowledge Building and Collaborative Innovation" for one semester (16 weeks). As the participants were pre-service teachers, this course was designed to help the students understand Knowledge Building theory, principles and approach and develop their knowledge building competency by engaging in creative idea improvement activities. We hope the participants can apply Knowledge Building approach in their future teaching practice so their final project of this course is designing a lesson plan using Knowledge Building approach in small groups in KF environment.

Multiple ways to support Knowledge Building: Grade 2 Students' Collective Inquiry of Salmon
Raadiyah Nazeem, Gaoxia Zhu
This ongoing study started on January 11, 2019. The teacher, one student teacher, and 22 students explored salmon in their science course. They started with what do they want to know more about salmon cycle and then explored salmon and other animals, salmon and the environment, salmon habitats, dams and so forth. They observed the salmon tank set up in their classroom, invited experts to give talks, discussed their ideas in Knowledge Building circles, read related books, wrote and improved ideas in Knowledge Forum as well as drew and built ideal and current salmon habitats using materials they could find.

Design learning activity to promote knowledge building in online course
Su Mu

In online course, learner need learn independently and collaboratively to get cognitive presence, social presence and teaching presence. As learning activity is the usual and practical way to connect learner together to share information, opinions and ideas in their way to build common knowledge in course-based community, we designed and revised learning activity to support and promote collaborative learning in more than 10 different online courses since 2014 to now. Based on 5-years teaching and learning practice to about 100,000 learners, we suggested design model according to enhancing developing idea, forming opinion and sharing information effectively.

(4) Proposed length of session, including time for audience engagement.
Abou 60 mins. It depends on how many cases we will include and the time slot of the program.

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