KNOWLEDGE BUILDING IN ACTION
INTERMEDIATE (7–8)

Supporting Knowledge Building Circles in a Grade 8 Classroom

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Bringing IDEAS to life!

3.4 SUPPORTING KNOWLEDGE BUILDING CIRCLES IN A GRADE 8 CLASSROOM

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INTRODUCTION

At the beginning of the 2015-16 year, Grade 8 students participated in the WaterDocs@Schools project. Nizam Hussain and Lindsay Butson, both Grade 8 teachers, took a Knowledge Building approach to the project. The study students took part in required them to explore local water systems, learn about water conservation issues, and carry out action projects to affect change in the community. This case study highlights how Knowledge Building Circles were integrated at different stages in the inquiry, and the strategies that were used to support authentic Knowledge Building Discourse, Pervasive Knowledge Building and Embedded, Concurrent and Transformative Assessment. Students were able to problem solve and guide their learning according to their own needs, resulting in an increase in student confidence, perseverance, and deeper understanding.

Teachers worked collaboratively to deliver a cross-curricular Knowledge Building study, allowing students to access ideas and skills from multiple perspectives.

KB PROVOCATION

The theme of Water Conservation is a Big Idea connecting all the strands of the Grade 8 Science and Technology curriculum. This Knowledge Building study began with a visit to the stream and surrounding forest behind the school. Students spent time exploring the area, making observations, and recording questions about the land and water. Upon their return, the teacher held a Knowledge Building Circle with the guiding questions: "What did you observe?" and "What questions came to mind when we visited the stream?" Students generated questions that launched the main inquiry:

Move 1: Introducing Knowledge Building Circles

The teacher explicitly taught the procedures of a KBC to a small group of students to use in the following Fishbowl demonstration. At the beginning of the lesson the teacher posed the questions: "What is a Knowledge Building Circle and how does it work?"The teacher asked the students to keep these questions in mind while watching the fishbowl demonstration. The demonstration lasted 10 minutes, during which the teacher 'froze' the action several times to highlight important aspects of the KBC. Following the demonstration, the teacher invited students to share what they had observed and questions they had about KBCs. Students noticed the use of the hiking stick to indicate whose turn it was to speak and the deliberate use of sentence starters such as: "To build on what Mariam said…" and "Something else I tried was…" and "In my experience…"The teacher explained that those sentence starters (KB Scaffolds) can be used to help show respect for everyone's ideas, even when

What were some of your greatest challenges?

Teachers observed that small groups facilitated rich dialogue. The challenge they are grappling with now is how to get the ideas and discourse generated in the smaller groups back to the whole class.

you disagree with them. In other words, they can help you give and receive criticism in a positive way. The notes were compiled into an anchor chart and placed on the wall of the classroom for future reference.

Move 2: Community Building to Encourage Risk-Taking

TRIBES Community Circles and other community building activities were undertaken by the teachers in order to build a safe and inclusive classroom. Whole class discussion was integrated into other subject areas and students were given opportunities to engage in various discourses across the curriculum. In addition to ongoing community building in Drama and Physical Education, teachers organized a full day of outdoor Community Building activities (Figure 1).

What was your "Aha!" moment?

Students were making a lot of cross-curricular connections in the KBCs because they were engaged in really deep and meaningful conversations and were excited when they were able to make connections between their water inquiries and other concepts and ideas they were studying in other subjects.

Despite these activities, many students were not voluntarily speaking or participating in the KBC. This is one of the greatest challenges faced by teachers. Subsequent conferences revealed that some students did not feel comfortable asking questions or contributing anything that may reveal their lack of knowledge. Simply speaking, they were afraid of being wrong. To increase participation, teachers used sticky notes to encourage students to contribute their thoughts, and questions. The teacher would use the sticky notes to facilitate discussions. This was a strategy used to promote participation and model that everyone's contributions are valued. Teachers continued with team building activities throughout the year and checked in with students regularly, to promote open and honest Knowledge Building discourse.

Figure 1: Community Building Activities

Pervasive Knowledge Building and Exposure to Diverse Ideas

A number of teachers in the intermediate division worked collaboratively to address the content and skills in Science, Math, Language, and Geography. Community building, development of teamwork, and growth mindsets that took place in Drama, Phys Ed., Music, and Visual Art were also critically important for evolving the KB discourse.

Move 3: Using Pre-Discussion Preparation to Increase Student Confidence During KBCs

During the first visit to the stream behind the school, the teacher asked the students to record observations, questions, and wonderings about the land and water with the expectation that this would be shared in a KBC upon their return. Students were given 20 minutes to explore, observe, and record findings and questions. Examples of notes taken:

- "Lots of different types of trees, some trees chopped down."
- "Not as much water in stream as last week."

Similar pre-discussion prompts were provided to students in all KBCs. Students were asked to sketch, or reflect in their journals before entering the circle. Other forms of accountable talk such as think-pair-share, inside-outside circle, and line-up were also used to give students the opportunity to practice talking about the topic before entering the KBC. Anchor charts and Word Walls helped students use subject specific vocabulary more often and more confidently in their discourse.

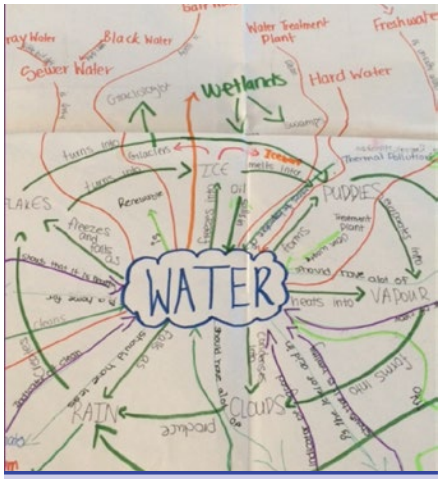

Figure 2: Students talking to the Water Brothers

Move 4: Making Constructive Use of Authoritative Sources to Provide Content for KBCs

Several weeks into the Knowledge Building study, students attended a Question and Answer webinar with the Water Brothers (Figure 2). Students were able to interact with the Water Brothers and have their questions answered about water conservation issues and documentary making. Following this webinar, students engaged in a KBC to review and document the new knowledge and understandings that were gained from the webinar. They added new terms to the word wall and concept maps. Students also made connections in other curriculum areas by exploring current events that related to national water issues, and exploring appropriate technologies and sustainability in developing nations.

To assist with the documentary filmmaking, students watched a variety of documentaries, paying special attention to filming, editing, and stylistic techniques. Students shared their observations in a KBC and discussed what made the films impactful, how they engaged their audience, and delivered their message effectively.

Move 5: Using KBCs as Embedded, Concurrent and Transformative Assessment

Students visited the stream several times over the course of the inquiry to count and identify populations of organisms, document changes following rainfall, and as the seasons changed, and to conduct a stream study. All activities were followed up with KBCs and the shared knowledge was documented through GAFEs, note taking, concept mapping (Figure 3) in the students' Science Journals.

Figure 3: This concept map was added to following several KBCs.

Students were provided with many opportunities to self and peer-assess their contributions to specific KBCs and in the overall project. The self-assessments were designed to have students reflect on their progress so far, and on their next steps. From this, teachers were able to determine what parts of the project the students needed further support with.

Well into the Knowledge Building Study, students had begun to amalgamate all of the information and data they had collected to create their documentaries. The students were given opportunities to participate in small groups KBCs to review their storyboards, problem solve gaps in their project and ask questions on what the next steps might be. The student documentaries were also deconstructed in small groups using the co-created success criteria. Students also did peer and self-evaluations to reflect on how the project was going and areas for improvement. The teacher took anecdotal notes during Knowledge Building Discourses to supplement other assessment data and to evaluate student thinking and unearth misconceptions that were addressed in future lessons.

What was one of your deepest learnings?

KBCs allowed the teacher to see evidence of students' differentiated learning. During the KBCs, students had the opportunity to showcase their diverse talents and skills to the discussion by sharing what they were working on (e.g., animated video of a water issue). This helped to boost students' confidence and improved the frequency and quality of their contributions to the KBC.

Knowledge Building Circle Self-Evaluation

Name: Date: Topic:

1. How did you contribute to today's discusssion? Add a comment beneath the choices you check off.

- ☐ I asked a question that related to a preceding idea.
- ☐ I made a comment that showed interest in what someone else said.
- ☐ I made a connection between two ideas.
- ☐ I used body language to support other speakers.
- ☐ I build on someone else's thoughts.
- ☐ I disagreed in a respectful way.

Sample of a self-evaluation form used after a KBC. Altered from Watt, J. *IQ: A Practical Guide to Inquiry-Based Learning, pg. 146*.