

How Do We Successfully Teach Collaboration In Early Years Mathematics Using The Building Thinking Classrooms Framework?

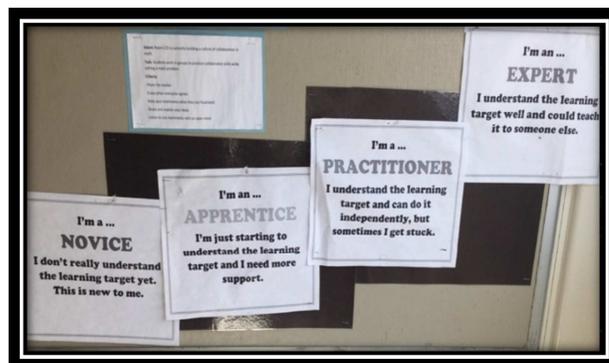
Jillian Burdey and Danny Gomes
jburdey@wsd1.org, dgomes@wsd1.org
Winnipeg School Division

Our learning journey actually began in the fall of 2017, which is when we were first introduced to the research of Peter Liljedahl in the form of his revolutionary mathematics teaching practice titled Building Thinking Classrooms. Classroom implementation began soon after through co-teaching. This first year of implementation provided us the opportunity to further our knowledge and understanding of this new practice, allowing us time to reflect and shift processes as necessary. In the fall of 2018, the opportunity presented itself to be part of the Math Teachers' Inquiry Project (MTIP), in which we would focus on continuing our learning of Building Thinking Classrooms. Initially, our inquiry or quest was based on analyzing the effect collaboration has on student learning in Mathematics, however, things changed rather quickly.

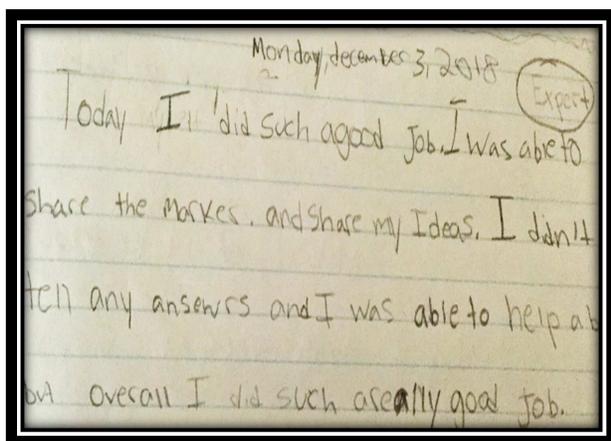
The first month or so of the 2018-19 school year had come and gone, and we felt no further ahead with preparing our students to dive into math curriculum learning in the Thinking Classrooms framework. We had established teamwork or collaboration criteria, which students knew and could recite, but still found ourselves 'putting out fires' with several student groups during math class. Although students knew the criteria, were able to reflect on it and we had daily class

discussions about this teamwork criteria. We were observing students taking over and doing all the work, other students not contributing to their group at all, groups of students arguing as well as not treating each other's math ideas in a respectful way, and we generally witnessed the breakdown of teamwork in every class in some form. What were we to do?

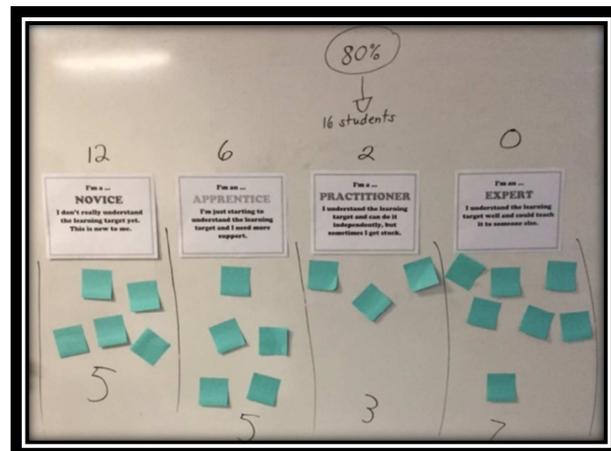
After much reflection, alone and together, we determined that the students WERE following the criteria as stated, but not to the degree in which we would like. We needed the students to go deeper. We stumbled upon a version of Marzano's "4 levels of understanding", which we felt would be the bridge to deepening students understanding and practice of teamwork. We modified this version further, and created our own explanation of each level: novice, apprentice, practitioner and expert.



We now began to introduce this new vocabulary to students, alongside our teamwork criteria. We asked students to write a reflection each day after their Thinking Classrooms task, in which students assigned themselves one of the four levels, whichever one they felt they achieved that day, and a few reasons why they felt they achieved that level. At first, the trend was that students were all scoring themselves as experts.



After many class reflective discussions, involving video and pictures from that day's math class, the trend became the opposite and students began to score themselves as novices or apprentices. This drop signalled to us that students were finally gaining a deeper understanding of the teamwork expectations. The actual teamwork skills increased, but students kept scoring themselves in a lower level of understanding. We then agreed upon a class goal of at least 80% of students achieving a practitioner level or higher in one class and this engaged students further.



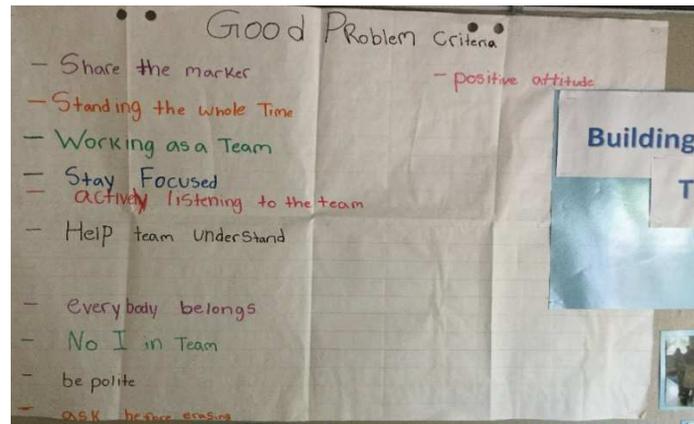
We began to notice that students were exhibiting more and more confidence working in a team, and there were less and less 'fires' for us to put out. The quality of math talk in the student groups increased significantly, and the class inched towards their goal, eventually reaching it!

We learned that while we, as teachers, wanted to jump in and focus solely on the math of Thinking Classrooms, it was more important to ensure the culture of the classroom in regards to teamwork was established. It took much longer to establish this culture than initially thought, however, teamwork skills became so second nature that students were able to remain focused just on the math, eventually moving through the curriculum faster than usual.

Moving forward, we believe the time and effort put into building student collaboration skills will be noticed in the fall of the next school year, and that students are able to remain experts and teach any new students what collaboration looks and sounds like. Explicitly teaching students collaboration skills will provide the tools all students' need as 21st century learners.

The following is a student reflection regarding his learning journey in math this year.

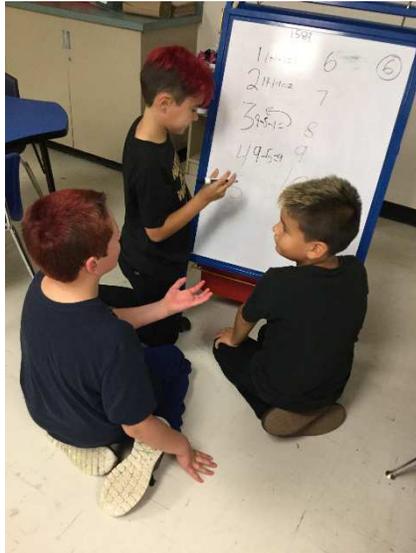
I really enjoyed learning about math using thinking classrooms. Our goal was to build a stronger connections towards one another. We really wanted to improve our teamwork skills so we created a chart. In that chart there are simple ideas to help you become a better teammate like stay focused, sharing the marker, everybody belongs and share your ideas.



In our classroom we set a class goal where eighty percent of the class saw themselves as practitioners. In case you don't know what a practitioner is, a practitioner is someone who understands the learning target and can do it independently but sometimes gets stuck.



I learned that teamwork is not easy because you are given a task and sometimes the task is easy for you but other people in your group might not know it so you have to explain it. So then they can understand the problem. I hope that next year my new teacher will have thinking classrooms because I've loved the idea ever since we started it. I liked that because the groups were random and you were able to connect more and have a better connection with one another.



"Alone we can do so little, together we can do so much."

-Helen Keller