INVERNESS RESEARCH

TOP TEN REASONS FOR USING THE MAP CLASSROOM CHALLENGES

From the Teachers Who Piloted Them

To learn how students and teachers benefit from the Mathematics Assessment Project (MAP) Classroom Challenges, Inverness Research interviewed twelve MAP pilot teachers in July 2012. Teachers' experiences using Classroom Challenges (CCs) with students were universally positive, revealing ten top reasons why secondary math teachers should use them. Each of the ten reasons summarized below is followed by a quote from the pilot teacher interviews.[1]

#1 MAP Classroom Challenges enable teachers to enact the Common Core State Standards for Mathematics (CCSSM) in their classrooms.

I think Classroom Challenges really help a teacher understand what the Common Core is trying to get at, especially the Standards for Mathematical Practice—for example, practices like "making sense of problems" and "constructing viable arguments." I think CCs give teachers a better sense of what the Common Core is expecting, and I think they will better prepare our students for the new line of assessment coming in the future.

#2 MAP Classroom Challenges give teachers opportunities to offer learning experiences that stress "conceptual understanding of key ideas in mathematics,"[2] the major goal of the CCSSM.

Classroom Challenges are collaborative lessons built around a single concept… so CCs demand that students dig deeper, recall previous knowledge, collaborate with others, and then really figure out where they are struggling… The focus is on developing understanding of that concept.

#3 MAP Classroom Challenges are expertly designed and ready to use for teachers interested in implementing formative assessment lessons in their classrooms.

I like the Classroom Challenges because they're already created. It's hard to be teacher, lesson designer, and evaluator. So the benefit to me is being able to use a lesson that is totally mapped out, all of the materials are there… The CCs are all rolled up into one neat package.

#4 MAP Classroom Challenges help teachers shift their instruction from teacher-centered to student-directed classrooms, where ownership and responsibility for mathematical thinking and learning resides with students.

In my traditional classroom, I did all of the teaching. I was up front and I presented everything. But with the Classroom Challenges it was amazing to listen to the kids teach the other kids. Some of those students had a lot of knowledge and were able to pass it onto other kids. Witnessing that was a very valuable experience for me as a teacher. I didn't have to be in control all the time… I have changed the way I teach.

#5 MAP Classroom Challenges enhance teachers' instructional repertoire, enabling them to practice pedagogies such as active listening, questioning or facilitating small group discussions that promote deep mathematical learning.

I learned a lot about good mathematical questioning using the CCs. Now I feel like I have something that I am always paying attention to and asking myself about—How do the designers frame this question? How am I going to get to this example? So I think using the Classroom Challenges has broadened my curriculum. And the Challenges have broadened me. They give me more tools to apply to my own lessons.

[1] Quotes are taken directly from interview transcripts and edited for both grammatical correctness and readability. Integrity of quotes has been carefully maintained; intent and meaning have not been altered.

[2] www.corestandards.org/assets/CCSSI_Math%20Standards.pdf

#6 Using MAP Classroom Challenges allows teachers to hear and see their students in new ways, thereby illuminating what students know and can do mathematically.

The juiciest part of the CC lesson is when I see how students respond to the pre-assessment challenges, when I observe the student interaction. It gives you an honest look at where they are. The learning that took place while the students were engaged in the assessment, and what I learned about their learning, was much more valuable to me as a teacher than some of the other assessments that we were asked to give at my school.

#7 MAP Classroom Challenges engage and test students of all abilities, from those who have not previously participated in math classrooms to those who have consistently excelled.

One of the main benefits of the Classroom Challenges to students is that everyone has access. Because everyone is engaged and involved, no student feels stupid doing it. Even the students who are kind of hesitant don't feel shut down right away. They feel like they have something to say. Everyone feels like they can contribute.

#8 MAP Classroom Challenges demand that students talk and write about their mathematical understanding, and then analyze, synthesize, justify, and often revise their thinking.

The CCs give students the chance to display and share their own thinking. Whether it be through formulas or drawings or notes or pictures or whatever it is, there are opportunities for students to explain how they got to a particular solution in their own mind. I think that is really beneficial for students.

#9 Student engagement increases, the "excitement level" in the classroom goes up, and students learn more mathematics when teachers use MAP Classroom Challenges.

The Classroom Challenges are fun math. Students don't have to just sit there and listen to me, and that was very good for them… Instead the Challenges are on them. They have to work hard. They have to use all those problem-solving practices and higher level thinking skills. They have to make the connections, they have to figure it out, they have to take some chances, and that makes the math more relevant and ultimately deepens their conceptual understandings.

#10 Students' understanding of the fundamental nature of mathematics expands and deepens when they engage in MAP Classroom Challenges.

The Challenges present the right portrayal of what mathematics is really about, so when students experience them, they see what the subject really is, how rich it is, and how exciting it can be. I think it's important to help our students rethink what mathematics is, get them to understand that it's about problem solving and thinking critically, and that there is not just one way, one path. In fact this is one of the most important things the Classroom Challenges do—they show students what mathematics is really about. For too long we have given them the impression that it is something else and that has been a disservice to them.

About MAP

The Mathematics Assessment Project (MAP) aims to help teachers and their students turn their aspirations for achieving the Common Core State Standards for Mathematics (CCSSM) into classroom realities. MAP is a collaboration between the University of California, Berkeley, and the Shell Center team at the University of Nottingham, with support from the Bill & Melinda Gates Foundation. The team works with the Silicon Valley Mathematics Initiative and school systems across the US and UK to develop improved assessment, including formative assessment lessons (FALs) and summative assessment tasks.

Inverness Research, a national education evaluation and consulting group headquartered in Northern California, has over 20 years of experience studying local, state, and national investments in the improvement of education.

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