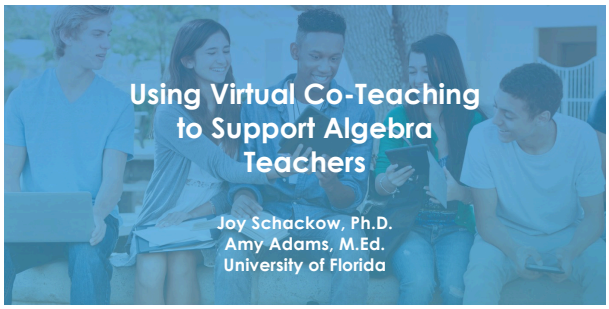


Traditional Co-Teaching

- Pre-service teacher/intern works with mentor teacher.
- Cross-disciplinary teachers work together to integrate subjects.
- Special education teacher works with general education teacher to facilitate inclusion of special needs students.
- Two teachers share responsibilities of teaching all students.

Two teachers share responsibilities of teaching ALL students.

"Co-teaching occurs when two or more professionals jointly deliver substantive instruction to a diverse, blended group of students in a single physical space."

(Friend & Cook, 2007)

Reaching ALL Students

- **Traditional curriculum has been developed for the average student around a one-size-fits-all mentality (typically printed text).**
- **Very few students actually could be described as this "mythical average student".**
- **Consequently, the majority of our students face barriers to learning.**

(Meyer, Rose, & Gordon, 2014)

Universal Design for Learning

To tear down barriers to learning, teachers must provide the following:

- **Multiple Means of Representation:** Learners perceive and comprehend information in different ways.
- **Multiple Means of Expression:** Learners navigate a learning environment and express what they know in different ways.
- **Multiple Means of Engagement:** Learners are engaged or motivated to learn in different ways.

In reality, with the diversity of learners that exists in classrooms, we would need multiple physical co-teachers.

Question: Could virtual resources serve as these co-teachers?

Our work in classrooms across multiple states tells us it can!

Multiple Means of Representation

Virtual co-teacher offers another presentation of material.

- **Algebra Nation - Instructional Videos**
  - Five study experts present the material with different teaching styles. Some go more in-depth and others offer a quick review.
  - Only available in some states (Florida, Mississippi, Michigan, Alabama, South Carolina, New York City)
- **Khan Academy**
  - Available to anyone with device and internet

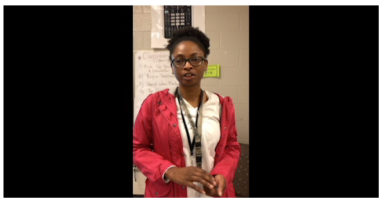
Multiple Means of Representation

Teachers use the videos whole group, as if a second teacher is in the room with them.

- Teacher **paused video** periodically and **interjected deeper explanations**. Students benefited from the **perspectives of two teachers.**
- Teacher **paused video** as video tutor began solving a problem and asked **students to work in groups to solve** before continuing video.
- Teacher **paused video** and asked students to **turn to neighbor and explain last concept/skill in own words.**
- Teacher used **time codes** from the video **as stop points to allow her to assess student understanding.**

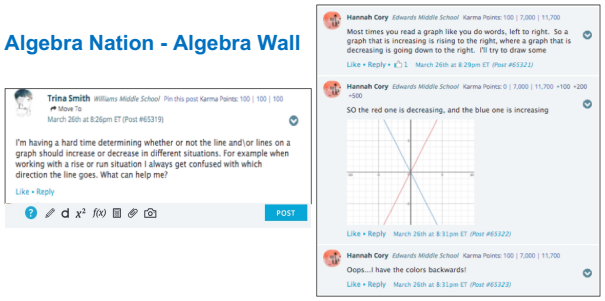
Multiple Means of Representation

Teachers use the instructional videos to help remediate students in areas of deficiencies.



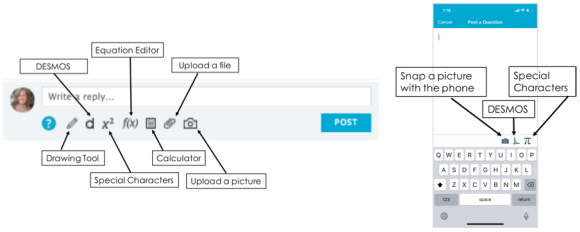
Multiple Means of Representation

Algebra Nation - Algebra Wall



Multiple Means of Expression

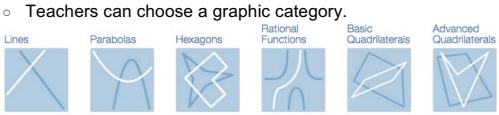
Multiple ways to post on the Algebra Wall



Multiple Means of Expression/Engagement

Polygraph by Desmos

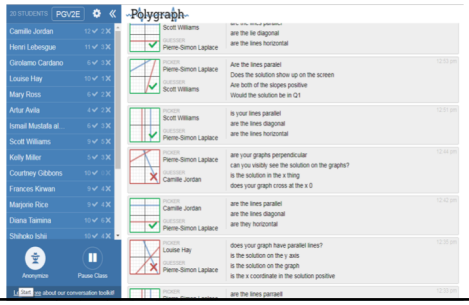
- Teachers can choose a graphic category.



- Teachers can also create their own graphic category.
- Students work in pairs. One picks a graph from the category and the other asks questions to guess which graph the classmate picked.

Multiple Means of Expression/Engagement

Multiple Means of Expression/Engagement



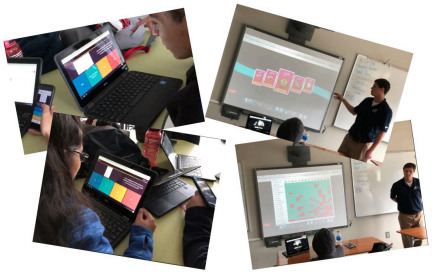
Multiple Means of Expression/Engagement

Reviews with Gamification

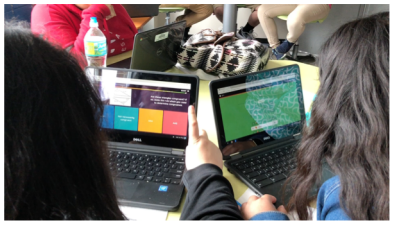
- **Socrative** - teacher or student paced
- **Quizizz** - student paced
- **Kahoot!** - teacher paced

Multiple Means of Expression/Engagement

Quizizz



Multiple Means of Expression/Engagement

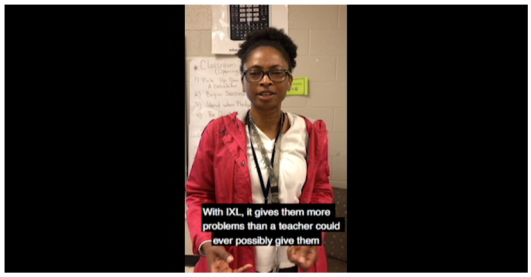


Multiple Means of Expression/Engagement

Other online assessment tools

- IXL
- Khan Academy
- Boom Cards

Multiple Means of Expression/Engagement



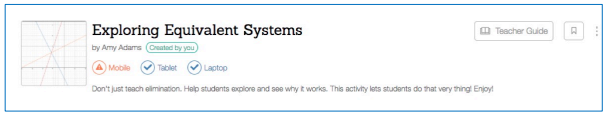
Multiple Means of Expression/Engagement

The technology with these games and interactive assessments can serve as a virtual co-teacher that is formatively assessing your students and gathering and analyzing data for you. At the same time, it is more engaging for students than traditional pencil and paper assessments.

Multiple Means of Engagement

Desmos Teacher - Activity Builder

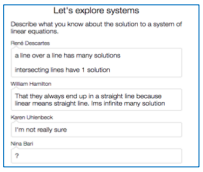
- **Easily create inquiry-based activities and have students use prior knowledge to build understanding of new concepts.**
- **Desmos Teacher Dashboard lets you watch as each student is guided through the lesson by their virtual co-teacher.**

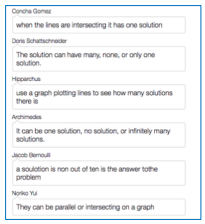


Multiple Means of Engagement

Exploring Equivalent Systems

- Prompt recall of prior knowledge

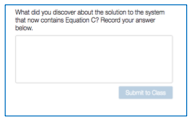


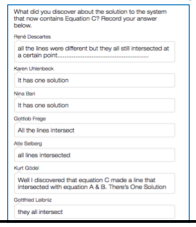


Multiple Means of Engagement

Exploring Equivalent Systems

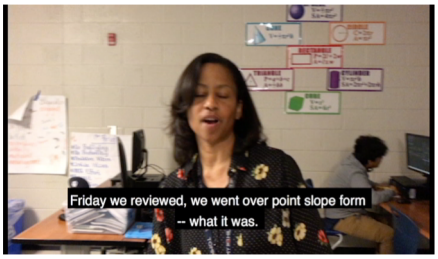
- **Building new knowledge - students given a system and asked to add the two lines together and graph on the same coordinate plane as the system.**





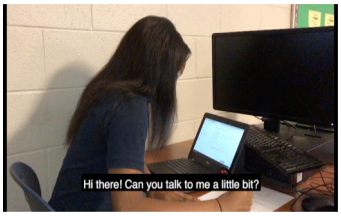
Multiple Means of Engagement

Virtual Resources Co-Teaching Example



Student Benefits

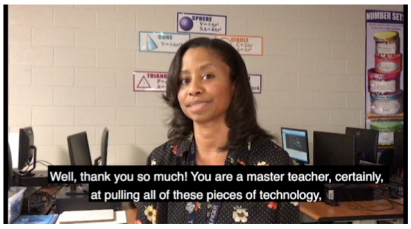
- More engaged in the learning process through giving them choice in their own learning
- Can work at their own level/pace



Limitations

- In many schools, the infrastructure was not sufficient.
- Students did not all have devices.
- Teachers are not able to see students' work and thought process.
  - The teacher who used IXL worked around this by giving students a sheet with 20 empty rectangles. The students had to show their work in the space provided and hand in to the teacher.

Too Much of a Good Thing?



Think-Pair-Share

- What online resources are available to you and your students?
- How could you use these resources as co-teachers.

For more information about Algebra Nation, email Amy@AlgebraNation.com