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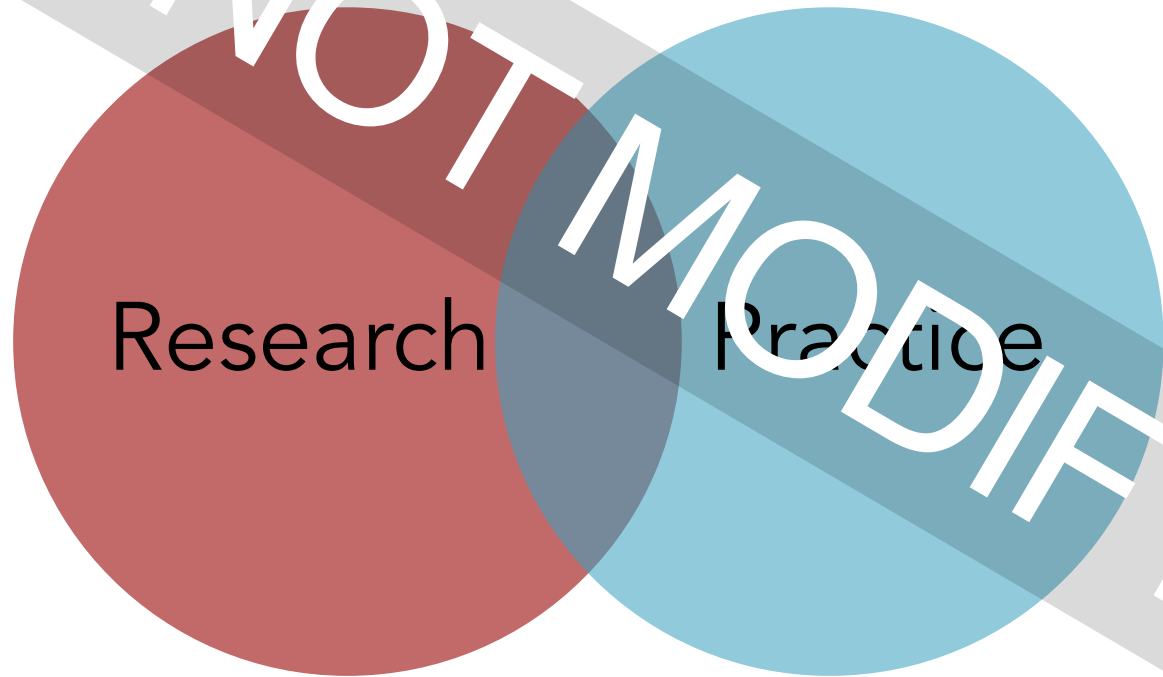
Actualizing Agency, Authority, Identity, and Access to Content in Two Contrasting Cases of Mathematical Groupwork

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Overview of the Session

- Overview of Research-Practice Partnership
- Methods
- Do the Math
- Introduce Access to Content & AAI Instrument
- Analyze Classroom Video
- Discussion and Conclusion

The Research-Practice Partnership



UUSD's Dimensions of Teaching and Learning

DIMENSIONS OF TEACHING AND LEARNING

Agency, Authority and Identity

another's ideas, in ways that contribute to their development of agency (the capacity and willingness to engage academically) and authority (having command of content), resulting in positive identities as sense-makers, problem solvers and creators of ideas.

Students ...	Teachers ...
<ul style="list-style-type: none"> Routinely ask questions and make comments that reveal deep engagement with the learning objectives Are productively engaged at all times, show ability to analyze, evaluate and synthesize content Hold one another accountable for justifying their answers by citing evidence and/or elaborating on their thought processes, when needed Build on the contributions of others, assume considerable responsibility for the success of academic conversations, initiate topics and make unsolicited contributions Take charge of their learning and construct new knowledge by defining tasks, planning, monitoring, changing course of action, and dealing with specific obstacles Have opportunities to show and apply their understanding in multiple ways Marshal willpower and regulate their attention when encountering complex tasks and in the face of distractions Assume responsibility for seamless transitions 	<ul style="list-style-type: none"> Effectively use a wide variety of questioning techniques to encourage student-to-student discussions and to move student thinking forward Provide adequate time for students to engage in productive struggle and formulate ideas Ask uniformly high quality questions that require students to cite evidence, analyze and synthesize information, and explain their thought processes in language Scan the room making note of who is not engaged and take action on an as-needed basis to re-engage students Consistently use instructional techniques that facilitate equitable, active student learning, including opportunities for hands-on learning Encourage student independence and facilitate seamless transitions from one activity to the next

Uses of Assessment

meets students where they are" and gives them opportunities to move forward.

Students ...	Teachers ...
<ul style="list-style-type: none"> Express their thinking, justify their findings, and apply new concepts they have learned so far to real-world or creative contexts Use use of teacher feedback in their learning, taking opportunities for 	<ul style="list-style-type: none"> Actively and systematically elicit diagnostic and formative information from individual students regarding their understanding and monitor the progress of individual students

Access to Content

Scaffolding, when provided, does not lower cognitive demands or the grade-level expectations, allowing all students to experience the complexity of the task. The rigor involved in the learning experience promotes depth of knowledge and attention to practice and details.

Students ...	Teachers ...
<ul style="list-style-type: none"> Articulate the purpose of the lesson and its connection to their knowledge Have opportunities to make their own sense of content-specific ideas Demonstrate what they are learning through ability to explain, interpret, apply, shift perspective, empathize and self-assess their thought processes Demonstrate strategic thinking by reasoning, developing a plan or sequence of steps to arrive at more than one possible response to the content under study Contribute to explaining concepts to their peers Independently seek new sources to expand their knowledge of the content being taught Persevere to accomplish long-term or higher-order goals in the face of challenges and setbacks by engaging their academic mindsets, effortful control, strategies and tactics 	<ul style="list-style-type: none"> Make the purpose of the lesson/unit clear, including where it is situated within broader learning, linking that purpose to student interests Facilitate opportunities for students to connect new knowledge and to make connections to their prior knowledge and experience Consistently use students' learning styles, interests, and needs to plan diverse learning activities (including hands-on learning), group students, and differentiate the content, process or product Ensure all student groups and/or pairings are strategic, purposeful and flexible, based on student characteristics Frequently anticipate typical student understanding or misconceptions and are prepared with alternative and differentiated lesson activities and materials. Provide ample opportunities for supportive interventions and challenging extension activities

Who does and does not participate in the work of the class? How can more opportunities for each student to participate be created?

DRAFT

UUSD's Task-Based Mathematics Curriculum



Methods

- 35 teacher participants
- Video-recorded 2-3 small groups in each classroom in Winter Quarter 2017
- Selected highest quality video from each classroom based on audio/visual and math talk
- 4 classrooms omitted for audio/visual issues and no mathematical talk
- 31 small-group videos coded with AAI and Access to Content Instrument

Context

- Same Day
- Same School
- Same Grade
- Same Task



UUSD's Task-Based Mathematics Curriculum




UUSD's Task-Based Mathematics Curriculum



Let's Do the Math!

Snail Pace

These snails move very slowly. Here are their speeds.

<p><i>Snail A</i> 5 inches in 10 minutes</p>	
<p><i>Snail B</i> 3 inches in 20 minutes</p>	
<p><i>Snail C</i> 1 inch in 15 minutes</p>	
<p><i>Snail D</i> 6 inches in 30 minutes</p>	

Your team's task:

If these snails were in a race, in what order would they finish?

Use tables, double number lines, proportions, or other representations to figure it out.

Your team's products:

- Everyone should have at least two different representations of the problem in their notes.
- Get your team's thinking ready to present under the document camera.

PSC Video-observation Instrument (PSC-VI)

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What evidence do you see of indicators of Access to Content?

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What evidence do you see of indicators of Authority, Agency, and Identity?

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Concluding Remarks

Paper forthcoming

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Funding the Partnership



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