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| **DATE: 4/12** Period 4 12:38 pm45 minute observation | **Activity**: Interactive board lesson on solving imaginary quadratics into complex answers & no solutions. Learning how to solve the problems with the graphing calculator: radicals and nth root problems.  | **Participants:** 10 students & Algebra II/Trig teacher. |

Coding Key: Cognitive engagement(looking, listening, following directions) Behavioral engagement: asking questions/answering questions, working(doing)

| Time | Observation | Others in the class |
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| 0-15 Min | Student desk are clustered into grouping of three. There are five groupings. One group is directly in front of the interactive board, a second three student clusters is immediately behind with one cluster of either side (3 horizontal clusters). The last cluster of three-student desks is kitty-corner off to the right of the of the middle cluster. All but the back group have two students, the back group is made up of three students.Amar the below average student has been staring out the window for 18% of the 45 minutes of observation. He looked at nothing in particular. He sat up, looked across the room out the window for one or two minutes, at his teacher for two minutes and down at his paper for one minute. This pattern continued for 7 minutes. After which, the teacher announces it is time to practice on the graphing calculators. Amar remains on task, following along the steps for working the problem on the calculator for 16 minutes.  | The students seated directly in front of the class are attentive.If asking questions is an outward sign of engagement then the two girls seating to the right of the middle cluster are the most engaged in class today. The class as a whole is attentive to the the lesson. Most are following the teacher with their eyes, picking up the calculator when required.  |
| 15-30 Min **transition** | He stares into space for 3 minutes then he makes a sudden adjustment to sit up and returns to working out the problem on his calculator. For the first time in 30 minutes the blank expression he has had leaves him for raised eyebrows as he attempts to work out the problem on his calculator. He remains on task for 5 minutes but then brings his head low to the desk as he writes on his math packet with elbows out on top of the desk.  | Student in the middle section has been slouched down in his chair the whole time (Matt), though he seems to be following along as he turns the page at appropriate times and is working with calculator following along with the teacher. He does not look around so he is most probably taking his cues from teacher and not emulating a peer. |
| 30-40 Min | He remains in this position for 3 minutes but then returns to working out problems on the calculator along with the rest of the class. As the lesson winds down, he is the only one to begin putting his things into his bag in preparation on to leave.He realizes that the calculator lesson is finished but the teacher is still talking about calculator setting. | Of the entire class there are t3 cluster of desks where students are asking and answering questions. The group in front has asked no questions though they have answered or nodded their heads in agreement. The students at the back of the class have been looking at the teacher the whole time, except for Amar who has had trouble staying attentive. |
| Teacher Exit Interview4 min:52 sec | **Researcher:** What did you think about the lesson, I notice most of the kids super engaged:**Teacher:** I don’t think you will see that in the next class because it is at the end of the day. They either will be asleep or bouncing off the wall. This one is small enough that they are pretty subdued most of the time. 2nd period is…they are a mess, I’m kinda dreading it. (both researcher and teacher laugh). Cuz they are not at their best at the end of the day. They are REALLY good at other parts of the day but not at the end of the day. So, Im not sure what it was…it went better then it went before. Blue period it went well, 4th period when I did this they were, I had to stop when I heard, “ughh..I’m never going to learn this, I’m not going to do it this way! I’m going to do it all by hand.” I said, “Gusys its in your precal book, its 1.9. And they are not going to reteach this, it’s a review. So just because you don’t want to learn it right now, it doesn’t mean they are going to reteach it to you.**Researcher:** Did that work?**Teacher:** Oh, yeah they all perked up then.**Researcher:** Because they saw the usefulness then?**Teacher:** I said, “This is coming up again,” and then I showed them a couple of problems like, typically Samantha, that was back there. I said, okay Samantha do this by hand for me, and she couldn’t.**Researcher:** Tell me which of the students in this class were the most engaged.**Teacher:** Uhmm Matt is always the most engaged. He is not the most talkative but**Researcher:** Who is Matt**Teacher:** He sits there in the back table near the door, He doesn’t always ask questions but he is always listening to everything that I say. Heather was really good today, the girl who sat next to him. Ummm, Nina is always involved, she will ask questions and try to answer. I was surprised that the girl who sat right there, Alexis, **Researcher:** Ah, huh.**Teacher:**  caught the pattern. She is normally the most disengaged.**Researcher:** Really, she was the most engaged.**Teacher:**  This was a really good day for her. Really good day for her. Ben comes in and out.**Researcher:** Oh, well that is interesting. How about the one kid who was sitting up there?**Teacher:** Amar, he is usually pretty good. That seating seems to work well for him.**Researcher:** I notice that the grouping you have, a really great groupings. **Teacher:** This time I did it by grades. The kids with the highest grades I put together into one group. And, the kids whose grades were similar are together. I’d never done it that way before, **Researcher:** Really?**Teacher:** yeah, I usually Mix it up so there is a smart one to help them out. But I found that in some of my classes the lower ones whose grades were lower because they were not engaged were free loading…so I though, “okay, if you want to free load? I will give you the worst kid in the class to free off of. **Researcher:** oh my.**Teacher:** Just to see if you step up…so that’s more in like my 2nd and blue period than in this one. But that how I grouped them by grades.**Researcher:** Is this the first time you’ve done that?**Teacher:** Yeah**Researcher:** How long have they been in those groupings?**Teacher:** Just for this packet. Every packet it changes**Researcher:** okay, so this packet has been with the last three classes, right?**Teacher:** Yeah, **Researcher:** wow, I’ll have to come back and check how it goes. Okay well, than you very much.**Teacher:** Yeah, I had to group them this time because I just, cuz they worked in their chosen group on that last test. And, some of them worked well and some of them didn’t, so I though, “you know”, especially the one’s who are not that bright. A lot of people in their group said they did not provide much help. They did not do much. So I’m like, “Okay time to put them in a group where if that is their approach is not going to be very good for them. **Researcher:** ohh, okay.**Teacher:** And then I thought, for the ones who are faster, they will have faster people to work with and keep up with them and maybe they will not get as frustrated and they can work ahead together. So, I kinda did grade pacing this time.**Researcher:** Okay, thank you. I will try to come back tomorrow if that’s okay.**Teacher:** Sure, see you tomorrow. |