

HS Robotics  
Post Interview

Interviewer: How are you affective in communicating the purpose of the lesson?

Teacher: Kay. In order to effectively communicate to students the purpose of the lesson, gotta start with the big ideas. You can't tell kids "do this step because I told you so". And I think a lot of times, I do have that challenge. I have some challenges where I have students who feel that they need to do something because the teacher told them to. But I would like for them to realize for themselves is, you know, look at the bigger picture. You know, why are we doing what we're doing? And always making that clear for them so that at some point, hopefully in the beginning part of they year, they understand what that big picture is. The big ideas. And from there, makes my job easier. I just do more facilitating and guiding them with essential questions as opposed to everyday just telling them what they need to do without telling them why.

And so again, what makes it effective is looking at those big ideas. So again, if the kids say they want to win, what does it mean to win? Why do you want to win? It's not because you're gonna win money, or because you get a trophy, but because you did something. You did all those little things to be successful, better than anyone else. And so that's something to be proud of and something to celebrate as far as your successes.

Interviewer: Which parts of your instructional practice do you think were most effective in supporting students to meet those objectives?

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Teacher: I truly believe that in order... I think that what makes me effective, as far as us being successful, is demonstrating. You know, what the goals are. I mean, what practices I want them to do. You know, what standards I want them to reach. I can't tell my students to do something and I go back to my desk and just sit there. I need to do it myself. And I think my students truly believe that I want it more than anyone else. And that I have high expectations and that I won't settle for anything less than being successful. And I think because of that drive that I have, I think it maybe somehow rubs off on them. You know, you can't teach kids how to be passionate about something if you're not passionate about it yourself. And for me as a former engineer, as a person that has loved math and science, I think I demonstrate that enthusiasm for kids. And I think because of that, you know, since a lot of them have interest in it, I think they feel that enthusiasm as well.

Interviewer: What roll did organization and planning play in this particular lesson as far as lesson planning, or classroom setup, or any of that?

Teacher: There's a saying that chance or high probability of success... Or sometimes they call it chance. Have been more often for the prepared mind. And I truly believe that. We are successful because I believe that we are the most prepared. We're preparing for events weeks in advance of when it's supposed to be done. I mean, the more prepared you

[00:04:00] are... It's not that you'll necessarily do better. I think that when you do proper planning, where you're better at is when something goes wrong, you can adjust and get back on track. I think that's the most important part about being prepared. You know, if you prepare for a competition right before it happens, well we all know that it always doesn't go how you plan it. And so what happens when something goes wrong? We're successful in general. I believe it's because we spend a lot more time preparing way in advance. And when things go wrong, we're able to right the ship. Get back on track.

Interviewer: What is in the classroom that you've got to set up on a daily... or maybe prior to this lesson? As far as the robots, or the classroom? Or is it already set, pre-planned?

Teacher: So, part of preparation I believe is organization. And if you... In a typical classroom setting. And we have areas where kids can build, we have areas for lecture, we have areas where we have machines in the shops and the kids work on those things. And every area that you go to in our shop, it's organized. Kids know exactly where all the materials are. They understand where all of the materials need to be at the end of class. And it becomes a shared responsibility. Not just for myself and the staff of our school, but for our kids. Our kids are responsible for the organization of our program. And so when you make them responsible for that equipment and the materials, they're gonna take better care of it. When they need something, they know where it is. When they come into the classroom, they understand that before the day ends, everything goes back to how it was. We need to be organized again. And so they feel that responsibility just as much as myself, our mentors in the school.

[00:06:00] Interviewer: What role did behavior management play in this lesson with regards to expectations, procedures, routines, discipline?

Teacher: Well, you can't be successful if you don't have some kind of behavior plan or if kids aren't on task and focused on that learning. It can get pretty intense. Whenever kids are asked to build and be self directed in that respect, you need to be organized and you gotta have a behavior plan. I think our program has gotten to the point where we don't worry too much about behavior. The kids that aren't interested in the program, or don't feel like doing any work, it's amazing how they kind of weed themselves out of the program.

I've never had a situation where I had to force a kid out of the program and he didn't want to be out of the program because of poor behavior, or lack of effort. I think they realize that the culture of our program and the expectations and so for those kids they just weed themselves out. And the ones that really want to be there are still there. And so, I would say 99% of the time, it's pretty intense, the kids are focused, and there's very little down time. You know, our classes are ninety minutes long. And you have kids that will tell you ninety minutes is just too long for some set of classes that they have. And for some, they say ninety minutes is just too short. We're one of those classes where ninety minutes is just too short.

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Interviewer: How do you think the lesson went with regards to student engagement?

Teacher: Well for the lesson that we were able to capture, I think for the most part it was focused. I think there were some situations where because you have three to four kids per group, we had some situations where maybe two out of four were engaged... or maybe three out of four kids. But not for a prolonged period of time. I think for the most part they were all engaged and I think the key part is the way we had set it up to begin with. Every student has a unique roll. We're not gonna have three kids that are builders and one that's a programmer. One's the programmer, maybe one or two are the builders, we have one that's focused on the documentation and doing the write up. Now they all participate in all parts of it, but we have certain kids that have certain lead rolls. And by providing that lead roll, one can't be successful if they other two or three aren't doing their part. And so it's kind of like this peer pressure, peer mentorship thing that allows them to be successful and engaged for the most part.

And so I think, as far as the lesson goes for that day, I think for the most part they did make progress. They used their ninety minutes wisely and they were trying their best to get their robots to work in time, in preparation for that competition later that week.

Interviewer: And how do you think the students found the lesson meaningful and relevant?

Teacher: It always goes back to what happened at the competition. And so if they didn't spend enough time on the programming, and certain parts of the program failed, it shows at a competition. And unfortunately, sometimes it takes a bad experience at a competition for our kids to realize "Hey, we gotta work harder at this. We make more better use of our time." And so that format of assessment, we use the competitions as a format of assessment, is very important in providing that feedback for kids. "Did what we do, was it good enough or not good enough?" And sometimes maybe they work really hard, but they find out it's still not good enough. And so, no matter what the situation is - no matter how hard they work or didn't work, that format of assessment provides a very accurate picture of where they are and where they need to be. And so from that perspective, that's the driving force to having our kids focus on there is that need to improve and celebrate what they did well.

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Interviewer: And how would you like to continue to develop this lesson in the future?

Teacher: Well, we've done this for several years. Have many groups of students. The one thing I did learn is you cannot be rigid as far as the number of kids per group, because every individual is different. They all bring their own strengths, weaknesses, and they're own unique character and abilities. And so I think it's always a work in progress. So if you start the year with so many kids in a group, sometimes we've gotta switch kids between groups to make the groups work better. I mean it's just like in real life, you know, sometimes we gotta change our own settings or our situations so that we can be more effective as well.

And so I think as a teacher, we gotta be real flexible. We gotta be real flexible because

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things change, things happen. You know, you can't expect what - And sometimes what works at the very beginning, might not work towards the end, because hey, we're doing subsequent competitions and those other schools are getting better. And sometimes we just gotta change the formula, whether it be focusing on more certain aspects of the curriculum, changing the students, or maybe just starting all over again and starting with a new robot design. Just in general, taking that formative assessment and being flexible, to change some of the dynamics of whatever you set up as your foundation, so that at the end everyone is successful. And looking at it from that approach rather than just being rigid and not willing to change despite the outcomes.