MODULE ONE
Transcribed 4/18/05

Community of Learners

Bransford: The idea of a community of learners really gets at the heart of the fact that human beings are social animals and that most of our everyday learning outside of school is highly sociable and that we collaborate with one another.

Man: What you want to do is find a partner real quick and get seated with each other.

Woman: In the class he teaches in the aquarium science program, Bruce Koike creates a sense of community by knowing and valuing his students.

Koike: The students that we have in our program, it ranges from individuals who have just graduated high school to individuals probably in their late 40s, early 50s. But that gives us a really neat opportunity to pair up individuals who have a lot of work experience with those who have just embarked on having a full-time job.

Okay, clear off your white boards real quick.

The format for this class will have several components. We'll start off in what's called a pair share.

Write down everything you know about ozone itself. You got one minute. Go.

Woman: It, um, oxidizes.

Man: Um, it denatures quickly.

Man: Toxic to fish.

Man: Poisonous maybe.

Man: Difficult to produce.

Koike: Okay, stop. Switch partners.

We'll then swap one partner from one group to the next, and the same question is posed where those individuals are supposed to fill out items that might have been missing on the other group's list.

Woman: "Unstable," that's what we had. Or we said "denatures quickly" which is the same thing. "Kills"?

Man: Sterilizes.

Woman: Sterilizes. We said it was highly oxidated which is the same thing, right?

Man: Right.

Woman: Steals electrons, right?

Koike: Five, four…
A lot of information is covered through that activity and shared. They each get to learn and teach another student.
Stop. Okay, Jess Warren, could you share your list with me real quick?

Jess: Unstable.

Koike: What else is on your list?

Jess: Neutralizes.

Koike: This again helps to build student relationships amongst each other. They're not independent learning stations within the class, but they become bonded and interact with each other.
Go.

Man: Um, foam, for foam fractionators.

Koike: Foam, okay, good. Others?

Man: It's an oxidizer.

Koike: Okay.

Man: It's toxic.

Koike: Okay. Go.

Man: We put down "reactive" as well.

Koike: This helps later on when we get into more complex projects now that they have a familiarity with each other.

And basically we want to try to take a look at how much material is being produced by these foam fractionators if we have a certain level of ozone going into it compared with air.

Woman: With the confidence and knowledge the students have gained in the classroom, team teacher Dave Baron now encourages them to take risks in the lab.

Baron: I try to let the students know in class that we're trying to set up the same kind of situation as far as what they're going to see at the aquarium on in the real-world experience except that there's not the animals to kill here, and if you mess it up it's okay. We have the equipment. If a pump gets plumbed in the wrong way or something like that and we burn up a motor, it's okay. We have a… we have an extra one that we can put in there.

Man: I'll disconnect the other pump, too.

Man: They're very good at letting you make your mistake and once you've made it, realize it and work towards not making it again.

Baron: How's it going over here?

Man: Well, these each have two ports in them and we've got to plug one of them, so this my only homemade deal that I've got.

Koike (?): The aquarium science program, so much of it is based on trying different things, and so by providing a safe place to fail, uh, is real important for students to keep moving forward.

Man: How we going over here? How we doing?
(overlapping conversations)

Koike: When you start to build on learning communities, now what you're really starting to do is celebrate the individual expertise that people bring. Ideally you help people realize that diversity of experiences and ideas is the best way to get smart in the world, because the more we push ourselves by looking at a diversity of ideas, the more we break out of our own little ponds and our own little boxes which inevitably we're all in, and the more fun it is if you can help people realize that as well.

Adult Learners

Leslie: I'm going to look over your shoulder, but we'll see how you can do in terms of setting up the gel box, okay? So I will be behind you but I'll let you guys take the lead.

Woman: Leslie Barbour structures her biotechnology research class to accommodate the different learning needs of adult students.

Leslie: We had a big wave of people who were in the high tech industry who, when we had the dot-com crash, needed to retrain in a different field, and a lot of people were interested in biotechnology, so we have adults learners who are doing job retraining.

Man: The disposal is autoclave, then drain.

Man: Biotechnology is a back-to-work program for me. I was in the computer industry for 20 years, and I found that the biotech industry, uh, is a technology of today and tomorrow.

Woman: I came from India. My family moved here. My husband got a job in here. I already finished my master's degree in India. I did master's in microbiology.

(indistinct conversation)

Leslie: I have people with biology degrees from 20 years ago who want to get back in the workforce and want to get their skills up to date and, and this is in some ways my favorite group, I get these students who are smart kids who, when they were in high school, were just not ready to learn.
Is that GFP? 2 microliters of GFP.

Man: I think the key factor in wanting to go… return to college was just frustration with my job because you could only go so far with it, and I felt like I already hit a wall within six years.
That's going in one and an eighth.

Leslie: It's such a privilege to sort of be here when they're ready to learn, because it's just incredibly exciting to watch them grow into themselves as scholars.

Man: Two microliters of (inaudible) and we should probably do the (inaudible).

Woman: …put that into tube eight.

Leslie: Because we have such a diverse group of students, I've found it's worth spending time to look at their backgrounds and get them to where they can maximize their contributions to the group.

And remember, this is one of those moments where you've got sort of a complicated set to put together, so, Michael, you're in charge of seeing what goes in. One of you should be checking off, yeah.

Man: What helps me is I'm a visual person. So sometimes in the lectures I may get a little confused or not understand completely the terminology.

Leslie: The bisacrylomide (?) is simply two monoacrylomide molecules connected by this methyl group.

Man: But then they reinforce those skills in a laboratory environment, so I get the hands-on. That's the type of environment that I learn best in.

Leslie: I can provide a rich learning environment for them, but when they get together in these lab groups, they do things for each other in terms of supporting their own learning.

Man: Your date, your initials, storage at two to eight degrees Centigrade.

Leslie: So I just think teaching at community colleges is great fun because of that aspect of the teaching.
And what you're trying to do is get the extra buffer and (inaudible) that. Okay, that's good for a first pass.

English Language Learners

Hollerin: How many of you have used GPS in the snow before? In the rain. Here or in Guatemala?
On the first day of class, I start to find out what they already know about the subject, and one of the things I'm trying to do is I'm trying to help students understand that in any class I teach, they already know something.

Woman: Kate Hollerin teaches an aerial photography interpretation class where the majority of the students are English language learners.

Hollerin: Did it work?

Man: Sometimes it lost satellite.

Hollerin: It lost the satellite. Due to the rain or to the…

Man: Under the canopy.

Hollerin: I'm constantly reflecting on how I present in a class, how… trying to reach beyond my comfort level to present things in ways that students of a diverse culture might be able to relate to easier.
Okay, we could have that problem at Large Mountain, but we'll see.

Man: She is doing a great job to… she wants that we know about the terminology because it's hard.

Hollerin: When I'm doing a straight lecture, I always try to write using the board because people who are English language learners, they may misinterpret how I'm pronouncing a word.

Woman: And I came hear because I want to study natural resources, so then I can apply those knowledge in my home country, the Dominican Republic.

Hollerin: Does anybody need anything in Spanish to make sure you understand?

Edwards: All right, ladies and gentlemen, just so you know, folks will be getting in your groups today so we'll set you up in tables so you can continue deliberating project solutions.

Phil: Dave Edwards' engineering technology class focuses on responsibilities within a team- and a project-based curriculum.

Edwards: The students have an integrated project. The project takes competencies not only from physics but from math and technology and English competencies as well.

Man: I'll write you an explanation of the values we got.

Man: We want to put, like, across the top, we're going to put, like, everything he's describing. Put it there, dating it right there. But it should be the same because we both…

Man: …did this together, these are the same values.

Man: They should be the same.

Edwards: Initially, when they first come in, because we have little experience with them, we generally try to mix up majors, we try to mix up the cultural background, we try to challenge them so that each gets to provide leadership roles within the team. Each develops expertise and also each develops team and social skills by being challenged to work with different people.

Man: Do you want me to give you the copy of the technical description as I have it now or…?

Woman: Yeah. Let me go ahead and get that.

Man: I was used to working by myself on all the stuff through high school, and then when you get into here, it's kind of integrated and we're… I just wasn't used to working in big teams on projects.

Man: Let's go through our tables and start this experiment.

Phil: Encouraging teamwork is stressed across all disciplines. Basic skills learned in Joshua (?)'s physics class will be applied to the students' larger integrated project.

Joshua: We do a little exercises and activities, and those activities are meant to show them that working in teams is better than working as individuals. Remember what you want to do is to pass steam. If you see no steam coming out, you may need to raise your apparatus or the end where the steam comes in.
After the first project, then we sit down and we say, "Oh, we need to re-team them." We look at their learning styles that they have done according to the (inaudible) testing that

looks at multiple intelligences and learning styles, but then we also look at how much they have performed in their courses, what their grades are, and then we pair them, matching their strengths.
(end transcript)