

FLO FRIDAY Inductive Learning—Designing Activities to Learn Through Examples
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Host: Gwen Nguyen, L&T Advisor, BCcampus

GWEN NGUYEN:

So good morning, everyone and welcome, and thank you for choosing to be with us on a Friday morning. It's a Friday and the sun is shining so brightly outside. So we really appreciate your presence today. Welcome to the FLO Friday on Inductive Learning: Designing Activities to Learn Through Examples. My name is Gwen Nguyen, and I'm a Teaching Learning Adviser with BCcampus. I just joined the team a few months ago, but every day has made a wonderful learning journey for me. I'm especially thankful for Helena and my team for the trust and the opportunity to coordinate a series of FLO Friday courses. I know that our facilitator, Annie, has a full session for all of us. But before that, I would like to acknowledge the special presence of BCcampus IT support, especially Paula, in the backend today. Thank you for all your work, team! And just a few housekeeping items that I'd like to go over before the introduction of our facilitator and the session. This session will be recorded. It will be shared with any additional resources after the session. If you do not wish to be recorded, you're welcome to keep the camera off and feel free to rename yourself to FLO Participant. Live captioning has also been enabled. And at the end of the session, I would like to ask you to participate in a short, anonymous survey. We will pop the link in the chat, so BCcampus just wish to know your feedback about this learning event. And perhaps find ways to organize more fruitful interactive events to support the teaching and learning in higher education around B.C. If you stay till the very end, I will also share some upcoming FLO events at BCcampus.

As many of you and my colleagues here at BCcampus, I am committed towards the process of decolonization in education. We know that talking and doing decolonizing curriculum are also the two hot topics in education right now. And I'm also the beginner in this process. Today I'm joining you from my home office in Gordon Head, Saanich, located in the unceded territory of the Lekwungen speaking people, including the Songhees Nations and the Esquimalt people, and W̱SÁNEĆ people whose historical relations with the land continues to this day. When I came here in 2015 to pursue further study at the University of Victoria, I fell in love with this beautiful and peaceful land right away. And since then, I have been living everyday with gratitude and respect towards the light and the people. You're invited to share your introductions and territorial acknowledgment in the chat if you wish.

Okay, about the topic today. In most views from humanities to sciences, inductive and deductive learning are very distinct methods or discourses. The most important difference between these two approaches to teaching and learning lies in the roles of the instructors or the designer. In the deductive classroom, instructor usually decide the lesson by introducing any spend learning the concept to the student first. Then with an inductive approach, learners will get an opportunity to learn through examples, learning through doing. We are very delighted to be able to collaborate with Annie Prud'homme-Généreux who is an inspiring and passionate learning facilitator and designer to offer this FLO Friday on this important topic. How to design activities to maximize learning through examples. Okay, you are in very good hands and I'm very happy to put myself on mute now and please take us on a journey with inductive learning. Thank you very much.

ANNIE PRUD'HOMME-GÉNÉREUX:

Thank you, Gwen. Hi everyone. It's nice to see you. Gwen got us off on a good foot by doing a land acknowledgment. And I'm actually not located at the same place as Gwen. I just like to acknowledge that I am currently on the unceded ancestral lands of the Squamish Nation and the Tsleil-Waututh Nation. Hi everybody. My name is Annie. I am a science educator. I've been teaching science in the post-secondary sector, in B.C. for about 25 years now, which it kind of goes by really fast, doesn't it? I have experienced working in a variety of contexts. I was actually one of the five founding faculty at Quest University. I currently teach at UBC and I recently, I'm a recovering administrator, so I recently retired from CAP U. I'm currently designing curriculum at Thompson Rivers University. So as you can see, I've experienced being involved in science education in a variety of contexts in our post-secondary sector. And the examples that I will be going through today are actually science inspired often because they're based on things that have worked really well in my classes. But fear not, if you do not teach sciences, that's completely fine. You will be absolutely able to take part in these activities. I guarantee it. And you will be able to think about how to import that to your own context. It is in no way linked to sciences. When I introduce myself, I always like to introduce myself personally as well as professionally. So just so you get a sense of who I am when I'm not digitally coming to you via Zoom. Here I am on the left-hand side of this image. That's me as a roller group, there'll be player playing on the track. All these women are about to ram into me and try to bring me on the floor so I look really fierce. But just so that I don't leave you with a false impression of what I'm like really on the track. Just so we're really clear, this is more like me 99% of the time. And that actually is a picture of me like literally taking minutes after the other one was taken. Okay.

So today as Gwen said, what we're going to be talking about is inductive learning. Here are my goals for us through the next hour. You can probably already feel that you want to buckle up and we're going to go fast through this. But really what I want you to do is I want you to experience inductive learning as learners. As you know, when you put on your student hat and you experience something, even if you're already familiar with it, you often get something slightly different from the experience. You get to critique and think about what works and doesn't work. So that's one of my goals for all of us today. The other thing that I want you to do is I actually, I don't want to tell you what inductive learning is. I want you to learn about inductive learning inductively. And so that's what you're going to do. And then we're going to dissect it a little bit.

So here's the course of action. The first half of this session is basically meant to be experienced as learners. So you're going to put on your student hat. We're going to go through two examples that are taken from my classes. I think they are examples that work particularly well, but they are by no means meant to be the end-all, be-all of inductive learning. They're just selected because they achieved slightly different goals, as you'll see. Then for the next half of this session, what we're going to do is we're going to basically debrief and discuss what it is, what is this thing called inductive learning? So we're going to talk about what happened. How can you do it? What are the elements? And then after that, we'll wrap up with the next steps about what you might do with this information.

Paula has been very, very kindly putting in the chat a lot of references to this resource website for D activities. I'm going to make you go through these different places. There's activities to be done. And so rather than just keep putting different links into the chat and then people get all lost. What I thought I would do is basically put together a single webpage. If you want to open it right now, if you have a QR code and you want to use your phone, you can just look at this QR code on the left-hand side. If you want to use, just click on the URL and open a tab on your browser and just keep it open for the remainder of this workshop. This will be really, really helpful to you. If you like to follow along having your own slides, you can also access the slides at this resource website, and there'll be plenty of

resources afterwards. You will have access to this website for basically ever for the workshop. So that if you want to go back and study these resources and work from them, these are available to you. So I encourage you to go to either the Bitly that Paula has put in the chat or if for some reason sometimes schools seem to block Bitly access. So if you want the full website, which is a bit longer, but you can click on the link. You can go there. And I really recommend you keep this open and readily accessible for the rest of this workshop.

Alright, we're going to jump right into the first example. So I hope you weren't just like thinking you're going to put this on and then go cook for your lunchtime because you're going to be involved as learners and you're going to be doing things. So for this first activity, it's an activity that I do in a biology course. I told you I'm a science educator and usually I teach non majors. And so again, if you're not scientists, don't worry about it. Neither are all my students. And this is usually something that I do in the first or second day of class. And I do this activity with the purpose of trying to get students to understand what is the discipline that they're studying, biology, right? It's like we never really stop to think about it. That's the first activity that you're going to engage in. What I'm going to ask you to do is to open that website that Paula has provided the link to, the Bitly to. Then if you go to that website, you'll see that there's various icons. They help you to find the source, the link that I want you to find. The one that I want you to find right now for this activity is the one with the DNA. It looks a little bit like that icon or exactly like that icon on the left-hand side. In a moment, we're going to put you in breakout rooms in teams of four. And Paula has kindly just put the instructions there. So basically what's in the chat is the same thing that I'm saying right now, just as a way of reference because I know I'm going fast. So what you're going to want to do is when you get sent out to your breakout room, take a note of which team, which breakout room you're in. And then quickly navigate to that slide on, that you land on when you, when you click on the icon for the DNA, you're going to find a page that looks something like this. What's shown here, the image where it says T1 and there's a cactus and a mule and a sea star and a diatom. Here's what you need to do with your team. First thing you want to do is you want to meet your team. So take a couple of minutes to introduce yourself because you're going to be working together a lot. So make sure that you are comfortable and get to know each other. And then after that, what you want to do is you want to take a look at what are these objects on the left-hand side of that slide. And you're being told they're living things. All of those things are living. And what you want to discuss as a group is what seems to be a common characteristic of all of these living things. Okay, so try to find, list three or four or five different things that seems to apply to all of those things that are living. Once you think you have a solid list, test that, that list of characteristics of the living against the one, the objects that are on the right-hand side of the slide, these are non-living things. So e.g. if you had this slide, you might say, Oh, well, you know, a mule, a cactus, a sea star, a diatom, they all have DNA. And then you turn to the right-hand side. You're like, ooh, Spam has DNA in it as well. That doesn't work. Go back to the drawing board. And so you go like this and you try to identify what seems to be a unique characteristic of the living things on your slide that does not apply to the non-living things on your slide. And each group's going to have a different set of organisms and non-living things. So you need to go to your right side. So we're going to give you 7 min to do all this, to meet and to discuss and come back with one or two characteristics of the living that applies uniquely to the living. And then we'll come back and discuss what is a living organism, what is life really? Okay. Is there any question before we send you out to your breakout rooms? Well, if that's the case, then Paula, please send everybody away to their breakout rooms. All right, welcome back everybody. I hope that was some fruitful conversation with some of your colleagues about what is life. And by the way, if you had some difficulty sharing screens, apologies about that. There was a bit of a technical glitch, but it's been fixed. So if you are my students at this point, we would, we would launch into a conversation about what is life based on the answers you got in your group for probably half an hour to 45 min. But we'll do a very abbreviated five-minute version here just so that you can get a sense

of how that might be done. I guess what I'd like to start with is I'd like to volunteer to tell me one characteristic of life that your group has identified would fit the living things on your slide? So do we have one? Yes. Please. Please tell us.

PARTICIPANT:

We choose sunlight.

ANNIE:

Sunlight? Tell me more about that.

PARTICIPANT:

Well, we had team one so we had the cactus, the mule, the sea star, and the diatom. And we all believed Barbara, Russell, and Allison in my group, that they all need sunlight. The spam does not, nor does the snowflake.

ANNIE:

Okay, Great. Okay. So and thank you also for telling us about what were some of the organisms in your living and non-living category. You're kind of saying at some point, the energy source for all living organisms depend on sunlight. Now, what I would ask the other groups then is to think back about some of the things that were in your living category. And if I was to say they all depend on sunlight, would that be true? No. I see Deb shaking her head. Deb, what was on your what was on your slide that that wouldn't work with?

PARTICIPANT:

I don't believe it would work with the bread yeast. I think the bread yeast would work whether it had sun or not.

ANNIE:

Interesting, okay. So then we think some probably applies to a whole swath of living organisms on Earth, but maybe not all of them. So that's, that's interesting. So we were going to kind of note sun as being an important one, but maybe not the determining characteristic of life on Earth. Okay. Then do we have another idea about something that we could use? What was another team's idea about a characteristic of life?

PARTICIPANT:

We really puzzled over this because we honestly could not come up with anything that was common to the six pictures that we had. We talked about air, we talked about food and being able to feed on something. But yeah, we couldn't come up with anything that we could eliminate or agree on.

ANNIE:

So there was, there was nothing, nothing whatsoever that you could come up with? That was a hard activity. You guys have had a hard slide maybe. You guys had the harder slide than everybody else.

PARITIPANT:

Maybe we don't know what we're talking about.

ANNIE:

None of my students do either. It's okay, right. They're all coming in from high school that they're not science majors. They talk about all sorts of things. We're not going to do the whole sort of like, like I said, when I do this with my students, like we spend sometimes at least like at least half an hour and sometimes up to like an hour-and-a-half, kinda dissecting what each group has come up with. And then we test it against what other groups had. Other groups had different examples and so we tested against everybody else. Now, inductive learning is learning through examples and you've gone through one example, but perhaps that's enough of a basis to start thinking through what it is and what I'd like you to think about are if you were to design an inductive learning activities, what are some of the characteristics of the examples that you would want to pick and use and present to your students to help them learn? And think about the example you've just seen and try to extract maybe some principles from it. So you can try either like putting into the chat if that's something that you're more comfortable with or you can try unmuting and speaking up. Just trying to collate what are some of your ideas about.

PARTICIPANT:

The one thing I'm thinking is try to find examples that they can relate to in their life that you haven't quote, unquote, taught them anything yet. So you have to find examples that are relevant and meaningful to them. Something that they can draw from and maybe infer additional information about as well, right? It'll become a richer idea, richer example. Let's see we got somebody. Donna says, testing hypotheses. Donna, what do you mean by testing hypotheses? I absolutely agree with you. I think I selected specific examples. In this example you just did with the express purpose of testing hypotheses. What kind of hypotheses did you have in mind? What do you mean by that?

PARTICIPANT:

Well, I mean, we were going to use our experience, whatever it is, based on the task at hand. We're going to test. So within our group, we will. Number one, we clarified the task because we weren't clear on that. That would be also be part of this. Is making sure we start with a common understanding. And then once we felt okay, we've agreed what we think the task is about. Then the second step was to develop some hypotheses and just see how our examples fit within that. And then either revise the hypothesis or exclude it if it's not going to be helpful going forward. So that's actually two: clarifying the task and hypothesis.

ANNIE:

And you're testing. You're coming up with an idea and then your test, you're using the examples to test your hypotheses constantly. I think that's a very, that's very much what inductive learning is about. Absolutely. Briana, you mentioned compare and contrast. What did you mean by that?

PARTICIPANT:

Well, I think the opportunity to look at things that have similarities that the things that kind of cause a little bit of maybe cognitive dissonance. They kind of throw you off. So you really have to keep probing and going a little bit deeper to try to find connections and find links and just make those neural connections, I guess.

ANNIE:

Yeah, when you're comparing and contrasting, you're comparing and contrasting at least two different categories, right? Things that are within the boundaries of the thing you're trying to define and things that are outside of those boundaries. And what you're trying to do is you're testing your hypotheses about like what creates that concept. And then you are saying, is it in this box or is it in this box? So you

need to provide examples of both. So that students can try to define what that box for that concept is. Beth, you have your hand up. Is that from last time, or would you like to add something?

PARTICIPANT:

Sorry, I forgot to lower it apparently. No.

ANNIE:

How about how many examples would you want to give students when you do something like this? What would be a good number? And again, put yourself in the shoes of a student. Like, how many do you want to be comparing? Probably more than one. It was going to be a comparison. You probably want to do more than one. Do you want to do two, three? So Trudy says two or three in each group would be enough. Yeah, that sounds about right. I think you don't want to overwhelm, right? Like if you start getting more than five, then there starts to be too many things that are different. And so you're going to have a hard, students are going to have a hard time trying to figure out what's similar between them. It's too many things to hold in your head at any given time. Now, there's, you know, we've talked about the numbers, so, probably between two and five is a good rule of thumb. You want to. Beth mentioned you want to have examples that students are maybe familiar with and they can bring in their knowledge to it. I think it was Deb that mentioned that. It was Briana mentioned that you want to have contrasting examples. So things that are inside the box and outside the box that you're trying to define. And then one other thing that may not have been obvious as well from this particular example is what. Right now we just use a name and a picture. But what if we were doing medicine and I was giving you case studies of different contexts and maybe it's a plumber coming in because he has measles and then another plumber coming in because he has measles. Then students are trying to figure out what, what sort of things end up causing measles. Well, if they were in this particular case, they might actually end up in, inferring that being a plumber causes or in some way linked to having measles because there's plumber in both cases. So if you're going to give a somewhat richer, I guess, example, that's a bit more context, you're going to have to make sure that the two contexts are different enough so that the students don't end up inferring that that context, those aspects of the context matter. They need to be different across examples. If they're the same, the students might end up linking them by mistake to the concept that they're trying to define. So that's another thing that you have to be a little bit careful about. Okay?

So now what we're going to do is we're going to move on to a second example. Also taken from something I do in my class. If you guys ever attended some of the fabulous Nicki Rehn's workshops where she was talking about rubrics. That's actually an idea that came out of listening to her and her ideas about that. So here's what we're going to do. So you're going to, this time them again. You're going to be sent out in breakout rooms. And the context for this assignment is there's a midterm assignment. You're going to have to create a concept map. Some of you may know what a concept map is and some of you may not. And some of you may know what makes a good concept map and some of you may not. And I want to make sure that we're all on the same page about what creates quality in this assignment in a concept map. So I'm going to send you to a breakout room. You're going to click to view the slide on the resource webpage. On this icon there, that's a table of a page with a check mark. That's going to send you to a page that looks something like this. On the right-hand side where there's eight concept maps that are provided as examples. And these are, these are examples of past student submissions of concept maps. And what you can see is the grade that students obtained for submitting these concept maps. So the ones on the right-hand side, students got an A. The ones in the middle, they either got a, B or C. So you can see the letter grade on the top there and the ones on the left-hand side got a D. So what I want you to do in your group, is to examine these and discuss what are some of the

elements that make a good concept map. So, you know, kind of compare those different concept maps and try to figure out what makes the ones in the A category such great concept map and what seems to be missing or what seems to be in development in the D or C, or even B. Like what's not quite there that they needed to add to get to something that's excellent in quality. And so you're going to go out in your breakout room for five minutes. Discuss this. And I want you to, do not just identify two or three things that they did, that the A concept maps or why they're such high quality. But I want you to also identify the relative importance of these things. So let's say you decide that colour is really important and number is really important. And I want you to tell me what colour is like, maybe just a little bit important, but number of concepts and its content on that one is really, really important. So I want you to also consider how important is it to do that thing, to have an excellent concept map. Any questions before we head out to the breakout rooms? Alright, then Paula, please send everybody away to the breakout rooms.

Hi folks. Welcome back. So just kinda keeping an eye on the time here. And I think one of the things that I would do here if you were my students and we were to do this, is I would ask you to brainstorm the list of characteristics of an excellent concept map that you have come up with. And we would discuss as a class, what are things that are important to have for each of those characteristics to become basically a good assignment. And then we would actually, I'm going to, maybe I'll will. So I was getting ready to input this with you here. Basically, we would agree and create our own rubric about what are the elements of an excellent assignment. And research has shown that actually if you do this with the students, they become much more knowledgeable and able to identify what creates quality in an assignment in a way that if you just give them the rubric, they're actually not able to do. So what I'd like you to do and consider here is, as an instructor, how do you know what quality is in a student's submission? And how did you learn that? I think it's worth considering this. How do you know what quality is in a student assignment? Does anybody ever thought about that? Like how do you know when you come upon an essay, that it's a really good essay? That they nailed the introduction. It's a really good introduction.

PARTICIPANT:

For me, it sometimes even I create the marking scheme and then I sit down to mark and I go, this marking scheme just isn't going to work. Because as I mark it, I even find that this one's really good. But according to what I've got here, it might not hit the mark there. So sometimes I like the first time teaching a course not having it so well-defined and kinda defining it as time goes on.

ANNIE:

I think what you're saying is you're learning inductively what makes a good essay?

PARTICIPANT:

That's right.

ANNIE:

Each time you're looking at new essays, it's giving you a sense of like, what does create a good essay, right? That's something that I really, I came to sort of that realization in that, that idea about creating rubrics with students inductively from, because I used to make students submit their essay, along with a self-evaluation of the rubric that I was using. And what I was finding is that all my students were giving themselves 100% on every single criteria of the rubric. I know if you guys have had this. And I was like, What's going on? Do they just think they're so fabulous, like they have nothing more to learn here. And then I realized, no, that's not what's going on. They've given their all. They think like this is as good as it

can get. And that's what you are asking them to do. They're rating themselves as like 100%. But it's not their fault. They don't understand what other essays might look like that might be better than what they were able to produce. They don't have that experience that Diane and I have had from working thousands of essays. And coming to the realization of this one is an excellent introductory sentence. This one, I think it's still developing. So that's when I decided to give my students these examples of other student work and ask for their help in identifying what makes a really good X. Tell me what are all those elements. And then together we'll create that rubric. And you'll have a very good understanding of what I'm looking for because you will have evaluated all these different ideas. Of these different examples and you will know when it's a good one. You will have seen it. You'll have seen several and have known. The thing about it is it takes quite a bit of time to do that as you can imagine. I devote a whole class to examining essays and they have to read a few essays as homework assignment. And then in class we use a discussion to go through what are going to be the criteria of this rubric. But if our goal is to get like in my class, my goal is to get students to write argumentative essays. So I can just assign the essays and grade them what rubric, but what am I doing if I never actually taught them what a good essay is? They have no preconception of that. Like that's the whole point. So to me that one class is actually the whole point about me teaching that class and teaching them how to write a good argumentative essay. Okay. So you've now seen two different examples. I'm sorry. When I do, it's really great to share your PowerPoint as background, but it always starts from the beginning. You have to go back.

So you've had two examples of inductive learning, right? So you've had the, what is life? one. You've had the one about using examples of student work to try and infer what is quality. What I'm going to ask you to do now is to discuss these questions. Basically to try and debrief and extract what you learned about inductive learning through the inductive learning process, through seeing examples of inductive learning, two different examples. What is that box of inductive learning? So I'm going to send you for five minutes in your discussion group. And here are some sample questions. You don't have to discuss them all. But here are some sample questions to try and identify what is inductive learning. So the first one is simply like what is inductive learning based on your experience here? Second one is, I think it was Diane was talking about like you always want to test that box. So whatever definition you come up with, ask yourself, would inquiry based learning be a form of inductive learning? So you might want to use that as a test subject to try and see that. What are the ingredients of inductive learning activities? So if you're going to construct one, we've already discussed what is the nature of characteristics of examples that you choose, but what else do you need to include? Then in what contexts might this work or not work? If you're going to use an inductive learning activity?

GWEN:

Just before people going to the garden. I think there's a comment from Dian and also a question from Tina in the chat. So Dian said that the benefit is also that assist students with examples they are learning as well. And the question from Tina is, do you get consent to use each of these examples?

ANNIE:

I do. Yeah. Absolutely. That's a very good question. So thank you for asking that question. Who was it that is it. Tina. Hi, Tina. Yeah. I absolutely ask for student permission to use the examples. Now, as you might imagine, I don't ask for students who have done horrible, horrible work. But I tend to work from really good examples. And the students there are actually more than happy to allow you to use it in future work and in my classroom because I've been doing this for a few years. I've accumulated a pool and then the students have seen how I use their essays. Like how I've used previous student's essay. They've seen that by the time they've written their own and I asked them if I can use their essay in the next classroom. And most of them view it as an honour. They're actually quite, quite pleased that I've

asked them to include their work, but they've also there's a certain level of trust involved because they've seen me use other students' work in the classroom. And so they know that I'm not doing it for the purpose of ridiculing or being like that. Can you see though that person wrote like, what an idiot? That's not it, right. Like you're like, Okay, so let's compare these two introductions. Okay, what makes this one really, really great? Okay, how about this paper though? Maybe it doesn't have a great introduction, but like look at a topic sentence for the body there. That's amazing. Let's look at that one and dissect that one and what makes it a great one. So we're trying to draw what's great about each paper. It may not be the same thing, but I tend to not ask students who barely passed. The categories tend to be from essays that are well written, but they may be well written for different reasons and that's how we end up comparing them. That's a very good question. Okay. So breakout room for five minutes. Basically, you're trying to define this box about inductive learning and tried to consolidate what it is that you've learned. So have a good, have a good discussion.

Welcome back, everybody. Alright, so one of the things. I hope you've had a good time discussing what creates that box of inductive learning. No doubt many of you have also been teaching it as well. So you might know it even more so that way too. But I'm wondering, can you think about what are the ingredients, if you're going to put this on in your class, what are the things you're going to need to make sure that you do? So we've already discussed examples. Teaching by examples requires examples. And we talked about having a number between two to five, making sure there are contrasting examples. Making sure that if it's context rich, that the contexts are different between examples unless it's relevant to the thing that students are trying to infer. What are the other things that you're going to need to do to make sure that students can learn from those examples? Because the research is pretty clear, if you just give students examples, they don't learn. They don't. You need to do additional things. So what are some of these additional things? Think back also to what some of the things we did.

PARTICIPANT:

Some leading questions or prompts.

ANNIE:

Right, Sherry, thank you. Is it Sherry that said this? That's right. Oh, no. Who said this? Oh, Casey. Casey. Hi, nice to meet your Casey. Absolutely. Yeah. You want them to have a task, right? You want to direct their attention on a task or activity when they're looking at those examples. You want them to know and do something with those. If you just give them examples, there'll be like, Great, I saw a cacti and a mule. Great job. You need to give them something to sink their teeth into. Ads are considering these examples. Okay, so that's the second ingredient. So you've got examples, you got to task and then, Sherry do you have a third thing.

PARTICIPANT:

Well, I think something you did quite effectively with us was you took it up after the discussion. So there was a further discussion with the larger group about the important things to draw out, what's correct, what's correct or what's the way to go or what common answers were.

ANNIE:

You need to debrief. Sherry. You got it absolutely right. You're doing this because you want students to put together the larger concept, the larger principles. But you've got to make sure they get to those principles. You want to make sure, you want to double check that they got there and check that they got the right ones that you were hoping that they would get to. Having some kind of debrief is critical at the end of inductive learning. So you start with a task, you prepare those examples using those criteria we

discussed. And at the end of it, you debrief with the team to make sure that everybody got what you thought they were going to get out of it. The reason that I really like inductive learning is I did, I did a degree in journalism. And in journalism, there's this adage like show, don't tell, right? People respond much more if you tell them a story and let them infer the lesson to be learned from that story. That's basically what you're doing with inductive learning. You're letting them come up with the conclusion on their own. And because they've gone through the thought process, the evidence is really clear, people learn more deeply. People retain the information longer. People are able to transfer the information to new contexts. That's one of the tricky things in education we often have difficulty with. But because it's been context rich, they are often able to transfer it more. The flip side of that though, is that it takes quite a bit more time to get there. And so you have to consider when is it a good time to use this? When is it not a good time to use this?

Okay, I'm going to wrap it up here. The one thing I did want to make sure that I shared with you before we go is on that resource website. So these are some of the activities that you just did. Gwen is about to take you through the evaluation of the workshop to tell us what you'd like to see more of and what worked and didn't work about this workshop. But it also is full of resources that you can continue to explore if inductive learning is something that you're interested in. There's a short article on faculty focus that I wrote describing what are the elements of inductive learning that you can go to. The what is life? activity is actually, I published a description of what that is in an article. And so you can go there. One of my former colleagues is a mathematician and I know some of you are mathematicians. You had written some, some comments about wanting to know how this could work in math. My friend is a mathematician and he talks about the importance of first-person learning as opposed to third-person learning in education and how that's much more powerful for gaining mastery as opposed to technical skills and being able to innovate. And so he did a TEDx Talk that's just phenomenal. I recommend it for even those who aren't mathematician, I think you'll get a really strong food for thought about how can we use student thinking. Basically putting, he says, putting them in the mess basically and letting them sort it out. And how powerful of an experience that is. He's finally these last two. This is probably my favourite of all the inductive activities that I do in my classroom. And unfortunately, we just didn't have time to do it in this workshop, but it's using inductive learning to help students clarify their perspective and their position. What is it that they think, what is their position and their views? And you give them a bunch of statements that align with different views. And then rather than saying, you know, for example, I'm a Democrat, I'm a Republican, you give them statements. They pick the things that they like and then you tell them, Oh, by the way, these five statements that you picked when you were weighing all these different ones align with this worldview. So then they don't start first from where they feel they are. They actually start from the examples. And that can be inductive learning can be used for that purpose as well. Alright, I'm going to, I'm going to pass it on to Gwen. I just wanted to thank you very much for attending this workshop and for participating and contributing your ideas. And I also wanted to thank very much Gwen and Paula for their help with this workshop. So Gwen, over to you.

GWEN:

Oh, thanks Annie. Just before, you know, are there any notes? I know. Thank you so much for your engagement, everyone, in this workshop. And there's a couple of comments related. It's not the question but related to the examples that need to be representative, Jason and also a thank you note from Barbara, from [...].

But thank you very much for taking us on a journey where learning, inductive learning through great inductive learning examples. At the beginning I feel like I need two more coffees to get me running with Annie, actually. But after all, that's about teaching and learning is like stepping into the swamp. Like we

know, we need to take the courage to step into that one because that one is not clear, but it has been a vibrant, transformative, and iterative, process, so it's like pushing the learners and ourselves into the unknown. And one of my favourite quotes is from the poet, Matsuo Bashō, go to the pine if we want to learn about the pine and to the bamboo if we want to learn about the bamboo. And in doing so, we must leave all our subjective preoccupation with ourselves. And that is about learning through examples.

And in the chat you will find the link for the survey. Please help us to know more about how you feel about this workshop so that we can develop more professional development events in the future.

You can also find two links related to our upcoming FLO events. One is the FLO Lab on Wednesday, November 23rd: UDL, POUR and Digital Accessibility. And the other is the FLO Friday on December 2nd, Powerful Questions to Facilitate Online Learning and Strengthen the Relationships. So again, thank you very much for joining us today. We look forward to your feedback and seeing you again in our upcoming events. Have a good one. Everyone.