

Knowledge Building as Design

Male: [00:00] The first thing I wanted to say is that, you know, when we think about inquiry-based learning or, or knowledge building, it, for me, is sort of a dynamic and emergent process of learning in which the children's ideas are at the center of a classroom. Um, ideas that come from the children and are what the teacher uses to sort of respond to creating this environment for the children to have—develop a, a depth of understanding. And I, and I wonder if we could—because both of you are teachers at different ends of the grades that we teach. So if you could give examples of what that might look like in, in your settings. Or what you define inquiry or knowledge building to be.

Female: Well, okay. I'll start, since I'm in the early years, in Senior Kindergarten. I think, absolutely, that children's ideas and their thoughts and questions are what, what drive our, our inquiry studies and our knowledge, uh, building. But I think before that can happen, that I as a teacher sit back and think, "What is the big idea that I want to tackle this year or this term?" So I spend a lot of time in the summer really thinking about what's it going to be. And often it's a, it's a one word big idea. So it might just be trees or buildings or the human body. And I have learned over many years not to get too far along plotting what that's going to look like. Because what I'd like to do at the very beginning of the school year is, is open up this idea to the children, maybe start by contextualizing it, reading a story or a bunch of stories about it, talking to the kids about their own experiences that might be related to that.

And then start asking them, "Well what do you know about trees? What do you know about buildings? Where have you seen them? What do they look like?" And starting to bring in their experiences and their ideas. And then that's what helps shape the direction that we're going to go. So in fact the big ideas is coming from me, but then how it's shaped and we're we follow, that's what comes from their ideas.

Male: Mm-hm. Yeah, I mean at(?) the—I think something similar is, you know, the way it works for me in, in older grade. But I like to think of it, you know, since we're using metaphors, right? I like to think about it as kind of like beginning and destination, right?.

Female: Mm-hm.

Male: Like, the destination for the unit, for what I want the children to get to ...

Female: Mm-hm.

Male: Yeah, that, that does come from me, or it comes from the curriculum or it comes from the big ideas and ...

Female: Mm-hm.

Male: And so, yeah. You know, I am doing a lot of thinking before we start about what that would look like, right?

Female: Mm-hm.

Male: What would it look like to have a class that understands, you know, say, at my grade level that understands, you know, electricity.

Female: Mm-hm.

Male: What would that be? And—but then, how we get there, how we get to that destination, I think, is the part that’s really, that, that you can’t quite plan out.

Female: Yeah.

Male: Right? That, that until you have worked with the children, until you’ve understood(?)—until you’ve understood what they understand ...

Female: Mm-hm!

Male: ... at the beginning, then you can’t quite know. So I mean, I think I do something similar to, to what you talked about in terms of at the very beginning, I just like to give the children experiences ...

Female: Mm-hm.

Male: ... with the topic that we’re working on. So, you know, if it’s electricity that we’re doing, for example, I like to just throw out a whole bunch of batteries and wires and motors and light bulbs ...

Female: Mm-hm.

Male: ... and whatever, and let them get to it and see what they understand and let them try things. And then ask them, “Well, why does the light turn on?” or “Why does it not turn on?” And from there, you start to see, from those experiences you get to start to see what they understand, what they don’t ...

Female: Mm-hm.

Male: And then you can get—also, you know, you can just have them ask questions, right? Ask what, what you want to know, right? What do you not understand? And then, I think, the older grades—I think maybe a difference between the older grades and the younger ones a little bit might be that—I think part of our job as the teacher then is to, once the children have been, have been given a chance to ...

Male: Mm-hm.

Male: ... you know, share what they know, what they understand at the beginning of the unit, it’s about giving them the tools to answer those questions that they have, right?

Female: Yeah.

Male: So ...

Female: So we do that to.

Male: I’m sure you do, yeah, differently, right? Yeah.

Female: And—but, but I think where the difference is, is that there would just be different expectations in terms of how they're going to express, express their understanding at a different time.

Male: Right.

Female: So you need to be really thinking about, "These kids are going to be going on to Grade 7. Here are the skills that they need." And of course, I'm thinking, "They're going on to Grade 1. Here are the skills that they're going to need." But there's a little bit more leeway ...

Male: Yeah.

Female: ... down in the early years and because, you know, maturation plays such a huge, huge part of it. But I was thinking about astronomy and how both of us do astronomy so often.

Male: Mm-hm.

Female: **[04:57]** And for me, what's so interesting about it is, even though I may start on the first day thinking about it in a very similar way in different years ...

Male: Mm-hm.

Female: ... where we end up, what we end up studying is totally taken by the kids.

Male: Yeah.

Female: So, one year it became all about the life cycle of stars, because that's what all the children's questions were about.

Male: Yeah.

Female: And a—another year, it became all about the relationship between the sun, the moon and the earth. And this year, it wasn't really about astronomy at all. It—we kind of pulled right back because of the kids' interest, and it turned out to be about weather and, and the layers of the atmosphere. And so I think that's one of the fascinating things about inquiry, and I think it would be the same when you do astronomy. You don't have, you know, twenty facts that you want the kids to end up with.

Male: No. No, no.

Female: You, you can have this broad topic ...

Male: Mm-hm.

Female: ... know what the big ideas are. I know that you're going to be talking about gravity.

Male: Mm-hm.

Female: You're going to be talking about orbits and, you know, seasons might come up.

Male: Right.

Female: You, you, you have a sense of all the different things that might come up. But what the children actually end up really focusing and engaging on, they're the ones that choose it, right?

Male: Yeah. And it's a—it's a little different every year, right.

Female: Mm-hm.

Male: And, and—but I think the—but I think if I really want to be strict about it, you know, I do think that by the end pretty much—even though the emphasis is sometimes different ...

Female: Mm-hm.

Male: Right? Whether, you know, one class has a greater focus, say, on gravity or something like that.

Female: Right.

Male: By the end—and another group has had a greater focus on, you know, the cosmology of—you know, the big bang and that sort of thing.

Female: Mm-hm.

Male: That the depth of learning and the, and the, and the meeting of those sort of big ideas on the curriculum, I think, ends up being about the same.

Female: Right.

Male: Right? You know, even though ...

Female: Yeah.

Male: You know, even though we've come at it from a different angle, right?

Female: Mm-hm.

Male: It's—again, it's like taking a different route to get there, right?

Female: Mm-hm.

Male: I think that's, you know, that's one of the reasons those—that the kind of—the curriculum big ideas as—that's how I begin to think about the unit every time.

Female: Right.

Male: Right? And, and, and, and also just sort of my own synthesis of what's in the curriculum, you know, in terms of, kind of big ideas. But, you know, thinking about where you want to get to in terms of two or three ...

Female: Mm-hm.

Male: ... kind of big understandings.

Female: Big ideas.

Male: You know, so for, for my grade level in astronomy, that, you know—one of those is, is gravity, right?

Female: Mm-hm.

Male: That, that gravity is a force in the universe that affects just about everything.

Female: Right.

Male: Right? That—you know ... And for the children to have some idea how that works. You know, so sometimes we get to that point of that understanding through looking at, you know, the earth, the moon and the sun and eclipses ...

Female: Yes, right.

Male: ... and all sorts of things like that. And sometimes we get through it—get to it by looking at the big bang, right?

Female: Right.

Male: But either way, we get there, right?

Female: Mm-hm.

Male: And I think that's the—you know, it's, it's amazing how it is different every time.

Female: **[07:56]** But because you've let them help chart the path of how you're going to get there, the engagement is totally different. Because they can feel ...

Male: Yeah.

Female: They can feel that they are, they are helping move this forward.

Male: Mm-hm.

Female: They are, they are the ones deciding where they really want to place their interests. And you're coming back and helping them, you know, maybe tack a little bit to the right because you really want them to see this or you're providing this experiment ...

Male: Yeah.

Female: ... so this can get more deeply. But they feel like they—that they have the reins, that they're making big decisions about what they want to learn, right?

Male: Yeah, yeah. And that's, and that's I think where the, where the idea of skills and tools comes into it a little bit.

Female: Mm-hm.

Male: And I think that's kind of one of the misconceptions when we talk to people about inquiry or knowledge building, right, is they, they would kind of have the impression that this not the type of teaching where you can develop skills.

Female: Right.

Male: Right? And I guess I would say that I think it's, it's exactly the opposite, right?

Female: Mm-hm.

Male: It, it's, it's the type of teaching where you can almost best develop skills. Because how, how can a child better learn, say, how to write a hypothesis, right ...

Female: Yeah.

Male: ... in science or in carrying on an experiment. You know, what better opportunity for them to learn that than when they're doing an experiment that they want to do ...

Female: Right.

Male: ... because they've devised it. It's the answer to their question.

Female: They want to find the outcome.

Male: Right. So I think, you know, it, it—teaching in this way, I mean, it probably doesn't give you so much the opportunity to stand in front of the class and say, "Everyone, here's how we write a hypothesis."

Female: Right.

Male: But, you know, it allows you to, you know, sit down with small groups as they're, as they're creating experiments ...

Female: Yeah.

Male: ... and say, "Look, okay. Let's think about changing one variable, not two.

Female: (Inaudible).

Male: "Not three, not four, in every step of your experiment." You know, "Let's, let's write this ..."

Female: Mm.

Male: "... let's write your method clearly. Let's do all of these things so that people can understand."

Male: I, I, I just—I wanted to say that hearing you talk—the theory behind knowledge building is so clear, your—in, in your understanding. And a few things I wanted to just sort of pull out. One, you talked about beginning with an experience, where the children—you, you know, we often say we begin with children's questions. But that—you might not have a question if you haven't had the experience.

Female: Right.

Male: And you've given us example of that.

Female: Or know that you've had the experience.

Male: Or know that you've had the experience, that's right(?).

Male: Yes.

Female: Mm-hm.

Male: So, that idea—how the authenticness of, you know, being part—you know, real ideas, real problems, is, is connected to motivation and engagement for the children. This idea of the value of idea diversity, many questions, many ideas to pursue and in order to understand the value of one theory or another idea, we need to sort of compare that. And that's sort of, that is counter the, sort of the misconception we sometimes get as teachers that our goal is to get to the right answer as quickly as possible ...

Female: Mm-hm.

Male: ... without, you know, any distractions. But rather, we want those, we want, you know, we want the learning to be a little bit messy. We want children to grapple and see, "Is it this? Is it that? Where do I place this? How do I categorize it?" And then you, you, you talk about how the ideas sort of, you know, continue to improve.

My question to you is, that's a little bit—that sounds incredible, this idea that you both said you get to those curriculum big ideas, but the path may be different every time.

Female: Mm-hm.

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