

## THE COURAGE TO BUILD

JASON: I remember, it was like an ordinary day at Saint Anthony and, I was in the staffroom, and my principle Karen came to me, and said, you know Jason, I want to talk to you about a new project that I'm starting. And I remember her saying to me, I'd like you to start this knowledge building. And, I guess my first part of the journey was, we talked about it and we drove together to the symposium in October, and I took part of that process, and it was very interesting, and I remember, I call it the drive home part. Driving home we were talking about it, and she said to me, you know Jason, do you think you can do this? And I remember saying to her, I don't know how, Karen I'm going to do this. I don't know how you want me to change my teaching practice. And I was really fearful of, you know, taking on something new in my classroom. But I look back, and that was the beginning, and she planted the seed in something that has evolved over time, and I'm really excited about where this journey has taken me. I think back to, you know, how I started in the classroom, and you know, I looked at you know, where my students are at and, how can I make a change for them. And so I looked back on how do I give them a voice, and how do I make their learning the central part of knowledge building. And so I started this journey with an understanding that I have to take the curriculum, and use the curriculum to plant the learning goals, and you know, it was a big change for me because the learning's always been my learning, and I remember, you know, thinking back how to, how do I start a unit? And it was my learning, it was my unit plans, it was my goals, it was my directions, and that was really hard for me. And I look back to where my students were at the beginning of this, and where they are, and how knowledge building has completely taken their learning to a totally new level. In the beginning I was really overwhelmed, and I didn't really know what I was going to do, and how I was going to let this happen in my room. And I guess from my perspective, as a classroom teacher, it's now taken a whole new learning for my students. I was really fixed on my

ways of teaching, and I knew that it had to be my learning goals, and it had to be my plans. But when I took step back, and I realized that knowledge building is, you know, and inquiry based learning, I thought about how can I make this meaningful for my students. And it's completely opened up a whole new world, and how I teach and, yes in the beginning I was resistant, and I was fearful that, are students going to learn, are they going to be engaged and you know, am I going to meet curriculum expectations, and how am I going to assess and evaluate with this new way of learning, and you know. It was all about what I have to do in the classroom, and taking a step back and knowing that knowledge building, honours' student voice, and it allows students to be the drivers of their own learning. And it's building their natural curiosity about the world around them. And that was really hard for me in the beginning. I think back to, you know, the greatest barrier was my not wanting to let go. And me not thinking that I could change, and that, if I think back to that greatest barrier of letting go, and if anything that I can say to teachers, is that it's okay to let go, and it's okay to be willing to change. And it's not easy, and I agree, in the beginning it wasn't easy in figuring out the plans and how am I going to let this unfold in the classroom, and what assessment practices are going to look differently. But when I think back to the students, and their learning goals, that's where it all unfolded, right, in letting them decide on how their learning is going to take place in the classroom. I look at conferencing with my students, and having conversations with my students, and providing them with opportunities to learn from each other, which has been one of the greatest challenges for me to let go as a classroom teacher, right. We want the control, we want to be the ones who set the goals and the pathways, but my students now set the pathways, and their critical thinking skills and their natural curiosity about, you know, what they're interested in, leads them to develop inquiry based learning in the classroom. I look back to how this all stated, and I devised a whole program from my opportunities of taking part in the

webinars with my principle, and hearing different practitioners that are out in different boards, and what are their practices in how they've used knowledge form in their own classroom. And, you know, this is a program, now that I've created in my classroom, where students are using picture learning logs, and they're having, you know, discourse with each other in a circle forum, and they're sharing and building upon each others' knowledge, and that's huge assessment for me because it's building upon their oral communication. It's helping them to think differently about science concepts in their everyday life, and they're making meaningful and rich connections. And so, I really feel that knowledge building is a new way of teaching, and I've said to teachers in my school, it's okay to let go, and to give yourself permission to let go, because the reward is greater than anything I've ever experienced.

## PARENT PERSPECTIVE

JOHN:

The teacher does a fine job of introducing certain things to them, and letting them go out, motivating them to go out and discover it, and then bring back their research work, through them, maybe to the class, and discuss it. And from that, they also learn a thing from one another, and it expands their way of thinking. Usually when he comes home, he has so many things going on in his mind. It's a child, of course, and developing at this age. He does his homework, he does other extra activities within the house, chores and outside as well. But since this program was started, I have found that he actually engages quite a bit in doing extra work on what he has been learning in school, either that day, or in the course of the week. This is something that has added to his own self discipline, in terms of learning a little more each day, each time, on what they have been introducing to the classroom. There's more to it, in the sense of how this actually applies to the children, 'cause right now they're in a more modern age. A lot of things are going around, in terms of not only learning, but also affairs in the world, and this actually brings them to really closeness, proximity to what is going around them, and how they can best get involved and learn from it. He has been able to articulate the things that he's actually doing, with what he's seeing in the real world. That aspect of it, brings into what they've been learning in school. What did you guys learn, so we are doing this, we are doing that, which actually helps another or further discussions, on what did he learn in the schools, I have seen quite an encouragement and motivation to do more, from being a shy boy to what he's like now.

LAUREN:

IT's definitely made an impact with my connection with the school. Just in conversations with the teachers, and hearing about the curriculum, and hearing about the way that my son is learning. Lately, Aiden's been doing more. Well, he'll share his thoughts more, he'll come home and he'll share his knowledge more, which to me, tells me that he's been learning more,

or he's more excited about learning. The engagement in learning is greater. I think it's a great way to learn, when you're learning with a group of people, and you're listening to peoples' thoughts, and you're listening to others answers about those, you know, their inquiries or whatnot. And I think, I see that at home too, with how he's inquisitive about certain things, and then taking his questions and going, finding out what the answers are. Whether it's through the internet, or asking questions of us.

## KNOWLEDGE BUILDING CIRCLE

- TEACHER: We're at the end of our increase. So if we look at our learning goals, what was our first learning goal?
- STUDENT 1: Our first learning goal was to learn how organs, learn the organs' systems, like, how they work together.
- TEACHER: What's another learning goal that we have?
- STUDENT 2: To learn how organs function by themselves and with another organ system.
- TEACHER: Okay. Tasia, what's the last learning goal that we had?
- STUDENT 3: What are the environmental factors that can affect the human health?
- STUDENT 4: I learned that the liver that is in the digestive system and the liver breaks down all the, like, the chemicals and the germs in your blood. So it's almost like a filter for your whole body like the filter in a water bottle. And it helps the, it helps the chemicals break down so the blood is able to flow clean. The clean blood is able to flow through your body.
- TEACHER: I'm letting go. Like, are you getting this?
- STUDENTS: Yeah.
- TEACHER: Like, I'm not doing anything. How does this feel?
- STUDENTS: Awesome.
- TEACHER: Okay, listen to me.
- STUDENT 5: We're the teachers.
- TEACHER: If you're-, You're teaching. I'm not. You're the teachers.
- STUDENT 6: I have a question. Does anybody know how heavy the lungs weigh?
- STUDENT 7: If you're, like, an adult or still a kid or a baby, a teenager or something, it's, it depends on how big you are or your age.
- STUDENT 8: It depends, like, your genetics and your, your gender and all that.
- STUDENT 2: Muscles are actually very important because it also helps you pump blood.
- STUDENT 10: I can build on to Luca because we need the muscles to do exercise and get fit.
- STUDENT 11: How many different systems work when you run?

- STUDENT 12: Your thighs and your leg muscles because when it's, because-, and the skeletal muscle also works because it's-, that's what's moving your legs but the mus-, but when you run, your muscles get more exercise and, I guess, they grow.
- STUDENT 13: You're also using your heart and your lungs because your heart pumps the blood to your muscles and the oxygen to your lungs and then your lungs sends the oxygen out so that you can breathe.
- STUDENT 3: I also think the brain because the brain tells the heart to send the blood to the lungs in order for it to get sent into the muscles for the muscles to work physically and for the human to breathe.
- STUDENT 12: I can, I want to build off of Tasia. Well, your brain doesn't tell your heart to pump blood. Your heart is always pumping blood, pumping blood.
- STUDENT 16: Your brain is actually the boss of your body. It tells your body to do everything that it does. So...
- STUDENT 12: Not your heart.
- STUDENT 3: It tells your heart to pump but your pump naturally pumps the blood, I guess.
- STUDENT 16: If your, if your brain stopped working then your body would eventually stop and your heart would stop beating because the brain tells it to do and then the body, the human body would die.
- STUDENT 11: Building off Matthew, there's a part of the brain called the brain stem. It's connected to your spinal cord which sends messages throughout your body telling it to move through your nerves.
- STUDENT 4: I have a question. When you smoke, why do your lungs turn black and why isn't there a cure for that?
- STUDENT 1: Well, in a cigarette there's something called tar and when you inhale it, it goes into your lungs and if you, like, keep smoking then the tar will pile up and it will create, like, a black, black spots and a black sensation on your lungs.
- STUDENT 4: But, like, why isn't there a cure for it, though?

- STUDENT 3: Because it blocks, like, your air to breathe. So, when you, it's hard for you to breathe. So, like, remember when we went to the Science Centre, how that the lady showed us how only one lung was moving and the other was not? Because maybe the other one, the other one was clogged from all the tar in the cigarettes. So, it's kind of hard for them to take it out because it probably got hard.
- STUDENT 6: I agree with Tasia because when we felt the lungs at the Science Centre, one of the sides of the lungs were really hard and the other one was hard but not as hard as the other one. So it's pretty much blocked. So you can't breathe.
- STUDENT 7: I can build off of Kiara. The lung was really, yeah, was really hard but the other one that we felt was kind of squishy because it still had a bit of air in it.
- STUDENT 12: When we felt the smoker's lung and we actually did that test when we pumped air into it, one of the, one of the, I think it was the right side of the lungs was not moving, like, it was not moving at all.
- STUDENT 3: It was hard.
- STUDENT 12: Yeah.
- STUDENT 4: Even inhaling, like, when people smoke, the air that comes out of it, even inhaling that can create, like, black spots on your lungs because you're still inhaling the tar that comes out of the cigarette.

## KNOWLEDGE BUILDING CIRCLE - STUDENT ANALYSIS

- STUDENT 6: When we started Knowledge, the Knowledge Circle, it really helped us because when we got information other people build on so we know more information. So we're not just stuck with the same information.
- STUDENT 12: Instead of being teacher directed, like, having the chart and then, the teacher's showing you the different parts of, say, the digestive system, we go on the internet and learn it by ourselves and then we can go to our Knowledge Circle, as we, like, as we are now, and we can share that knowledge. They'll build it off of me and then they can give me a better answer.
- STUDENT 7: Before we started, I didn't really get sense a lot but now that we're using Knowledge Building, people build onto other people's questions and answers and now I know more information that I used to know. So it can help me with my research and my findings.
- STUDENT 2: An impact in learning because, well, when we learn from textbooks we all know the exact same information and when we learn all, like, different with the Knowledge Building and stuff and circles, we always gain information from each other and we just find different information and then we, like, build off of each other.
- STUDENT 13: It's almost like we're making up our own textbook because we get our information from different sources. It's not only from one source. So there's lots of different ways of saying things and some of the ways might, like, make it easier for you to understand something.
- STUDENT 4: Kids try and learn by themselves because it kind of gives them a chance to, like, free fall and, like, instead of having just, like, one piece of information, let's say about the heart, you can go on different websites and get a whole bunch of information about the heart.
- STUDENT 7: Building off of Marisa, like, let them learn what they want to learn because maybe they have some cool or important information that kids need to

learn but the teachers didn't know and if they find information about that, they will all know now.

STUDENT 4: In our Social Studies textbook for a project, Mr. Francis said that everyone was, like, taking the exact words from the textbook...

STUDENT 6: And...

STUDENT 4: ...but...

STUDENT 6: ...regurgitating it.

STUDENT 4: ...and regurgitating it, but in Science since we're going on different internets, no one really has the same information that anyone else has, so it's kind of, like, better.

STUDENT 3: And it's fun to learn because you then you can run to Knowledge Forum circles and teach other kids and they'll be so happy to learn about it.

## REFLECTING ON THE JOURNEY

- JASON: I look back to in the beginning of the year in September and October, when we were doing senior social science, right? And we were using those text books, and how much those kids were disengaged, right? I don't know about you, but I have a couple in my room who just sat there and like, weren't engaged, and really weren't into the program. And then science came along in January, when we started, it's like if you think about it, we started this in January, right?
- ANDREW: Yeah.
- JASON: From January until now, where they're at.
- ANDREW: Yeah, it's unbelievable.
- JASON: It's crazy how this has unfolded, but I look back, and I look at their knowledge building circles, and their inquiry...
- ANDREW: Yeah.
- JASON: ...process and how they're using that model that in the classroom. We hear differentiating instruction all the time, right? But that's put into action. Like you can see the differentiated instruction, and how those students learn.
- ANDREW: And one thing I found great about that, especially with the lower level students, when they were somewhat in a rut, or stuck where to go, they'd have those high level kids. And, hey listen...
- JASON: Yeah.
- ANDREW: ...I found this. Why don't you check this out, or they would be able to explain them...
- JASON: Yeah.
- ANDREW: ...or show them something in a way that was easier for them to comprehend or...
- JASON: Yeah.
- ANDREW: ...that would makes sense to them.
- JASON: Even as a first year teacher, like what would you say, like is a challenge in this?

ANDREW: As you can see from your knowledge talks, they can go forever.

JASON: Yeah.

ANDREW: And just being that facilitator and trying to make sure you're directing them, and covering our curriculum expectations because that's where it all comes back from, right? Our learning goals are always built on our curriculum expectations.

JASON: Right.

ANDREW: So just being able to take that step back...

JASON: I know.

ANDREW: ...okay it's time to move on.

JASON: It's okay that it goes longer...

ANDREW: Right.

JASON: ...because this type of learning, when students are in a knowledge building forum right, it's okay for now, I know now that I can say, it's okay for me to let go and take an extra week longer...

ANDREW: Yeah.

JASON: ...because that extra week in the inquiry model, the outcome is that much more greater than spending another week reading a text book.

ANDREW: You came to and you said, we need to get rid of the text books. We don't need those anymore.

JASON: How many text books did we use?

ANDREW: None.

JASON: Hardly any, right? And this contests to student achievement and student engagement is not from a text book. It's from their natural curiosity about the world around them.

ANDREW: And one thing I've definitely learned that I'm looking forward to continuing in my career, is that the students love doing this.

JASON: I know.

ANDREW: It's not just, turn to page 32...

JASON: Yeah, I know.

ANDREW:

...read it and tell me what you learn. I found the knowledge building off of each other is just incredible.

## KNOWLEDGE FORUM AND THE ASSESSMENT COMPONENT

MONICA: Well, knowledge forum is the online environment...

JASON: Right.

MONICA: ...that supports knowledge building. It's another area for students to put their ideas, for to play with ideas, for them to develop their ideas...

JASON: Right.

MONICA: ...and to support knowledge building discourse.

JASON: Right.

MONICA: So there's a variety of assessment tools that teachers can use on knowledge forums...

JASON: Okay.

MONICA: ...that can help students and teachers sort of take a birds eye perspective of what's going on in their dialogue. So how can we look at this, sort of complex knowledge space, and look at it from a higher level and discuss where are the big ideas, where can we go next...

JASON: Right.

MONICA: ...are we advancing, where are my students progressing? To access the assessment tools, you just go the top right...

JASON: To tools, right?

MONICA: ...yeah, to tools.

JASON: Okay.

MONICA: And you'll click on that. So we'll look at lexical analysis first. What you can see, is if you click onto it...

JASON: Yeah.

MONICA: ...right now, just an empty dialogue box opens, but we're looking at your human body view, so...

JASON: Right.

MONICA: ...we can start typing in some concepts from the curriculum, that you want your students to be using.

JASON: Okay.

MONICA: So, like you can use systems, if you want to type it in, and then we'll look at it.

JASON: Okay.

MONICA: So you click count word occurrences...

JASON: Count word occurrences.

MONICA: Yeah, and so...

JASON: Wow.

MONICA: ...what you on the left, is the words again...

JASON: Right.

MONICA: ...you'll see how often they're being used, and then the source notes. And you can see in each note, how many times that particular term is being used. So you can see whether your students are using key concepts in their dialogue. So what you do with the scaffold tracker, it's just going to give you an overview of all the different scaffolds your students are using. So you get, sort of that birds' eye view of the discourse moves that are going on. So you can just click, you can't really see...

JASON: All of them

MONICA: ...the entire list here, but yeah, there's a little list of all the different scaffolds, and you can click on them.

JASON: (Inaudible) my hearing.

MONICA: Sure.

JASON: And do I hit count scaffold?

MONICA: Yeah, you can do more than one too, at a time...

JASON: Oh, okay.

MONICA: ...so you can compare. So this tool, like all the tools in knowledge forum, we're really trying to build them so that students and teachers can use them, so that it's not just for a teacher to reflect afterwards...

JASON: Right.

MONICA: ...but, you can look at it together as a class, or students individually, to help understand what's going on in the dialogue.

JASON: Right.

MONICA: So you'll see their vocabulary getting richer as it goes up. Lexical analysis too, you can see the terms. You can hear your students using those terms when they're in their knowledge building...

JASON: Right.

MONICA: ...circle, but...

JASON: Yeah.

MONICA: ...it's another way to trace it in their writing, right?

JASON: Okay.

MONICA: And then scaffold support tracker can help you decide as a group, what you should do next. Like I heard you say today, we're going to use a scaffold that we've never used before...

JASON: Right.

MONICA: ...and that's just to get more diversity of contribution. The theory is that, the more diverse a discourse is, you know, I have a question, I have some evidence, I have another challenging piece of evidence, the more diverse, the more likely you are to be able to advance it further. So there's a basic search that you see up here...

JASON: Right.

MONICA: ...if you just, you can type in one of your students' names. Okay, and then click go. So you can see here, all of this...

JASON: Excellent.

MONICA: ...contributions, and you'll...

JASON: That's very helpful.

MONICA: ...yeah, so you can see all the different types of contributions he's making, the scaffolds he's using, the different...

JASON: Different tasks.

MONICA: ...artifacts. You can also notice, actually, when you're looking at your vocabulary growth, you'll see that. You can look at it monthly and weekly, and for your database, month one to month two, it was, I think the total words went from 1,000 to 2,000. So there was an increase in the words. But to two to three, went from like 2,000 to 5,000.

JASON: Wow.

MONICA: So as your students are getting used to the process...

JASON: Okay.

MONICA: ...and used to the program...

JASON: Right.

MONICA: ...and when you break that down weekly, it was even like you could see in the week, it just boomed. The messiness is sort of like the first level process, right? All of those ideas to get on there first, and then...

JASON: Fantastic.

MONICA: ...what can we do to move things forward. And you have an interesting, can you read your second line here?

STUDENT 1: It says, for example, scientist believe that your digestion starts with your mouth, and I agree because that brain sends messages to the mouth to break down the person-, what the person is eating.

MONICA: So, before the digestive system can work, your brain has to send that message, right?

STUDENT 1: Your mouth to break it down, yeah.

MONICA: And how did you know that that's what scientists say?

STUDENT 1: Because I remember, we went on a trip to the science center this Tuesday, and we had this lady talk to us about that, and I thought that maybe I could use it for knowledge forum, in one of the scaffolds.

MONICA: So your teacher asked you today to use a scaffold that you didn't use often, right?

STUDENT 1: I already did my theory...

MONICA: Mm-hmm.

STUDENT 1: ...and there's like, did you know, it's like giving someone information that they might have not know...

MONICA: Mm-hmm.

STUDENT 1: ...and this is a new one I did, which is what do you think about my knowledge, and there's a decision, like making a decision, telling pretty

much people in our class, the decision we've made about the human body, and how it works and stuff.

MONICA: Okay, and do you think, are they useful for you?

STUDENT 1: Yes.

MONICA: Yeah, why do you think they're useful?

STUDENT 1: Because they kind of tie into what I've been thinking about, and what I want to talk about with others.

MONICA: Yeah.

STUDENT 2: What my friend is, I want to know why, when you smoke for a period of time, why your lungs turn black and affects your breathing and also affects the amount of air your lungs are able to hold. And I thought that that was a promising idea, because it was like, a very interesting question that I never thought of before, and when I read it, I really wanted to learn more about it, and understand why. I went on the internet, and I wrote in the same question...

MONICA: Mm-hmm.

STUDENT 2: ...and then I read that information that it told me, and I changed it into my words, like explaining to her why it turns black.

MONICA: Mm-hmm.

## RISK REWARDED

JASON: In the beginning I was really overwhelmed, and I didn't really know what I was going to do. I really truly only took on knowledge building in January, because I was introduced to it in October, and then I started the webinars in November, and took some time over December and January to figure out, okay how is this going to look like in my classroom. The learning that has been taking place in those six months, has been a lifelong event for my students. I really think that, now they're going to look back, and they can say to themselves, they're knowledge builders themselves. In the beginning it looked very different, and I remember when I first started my social studies unit, and we took out those textbooks, and we read that chapter nine together, and we highlighted the textbook, and we asked ourselves four questions, one, three, five and seven, and we all answered it. And hearing my students say to me, Mr. Frenza you know, we're knowledge builders because text book teaching is one perspective of learning, but now as a knowledge builder, we all come to the circle with a different opinion, and a different theory, and we prove our theories, and we test our theories, and we hear from each other. Every student is provided with an opportunity to share their learning in a different way. And everyone learns differently from each other. They're having, you know, discourse with each other in a circle forum, and they're sharing and building upon each other's knowledge. And that's huge assessment for me because it's building upon their oral communication, it's helping them to think differently about science concepts in their everyday life, and they're making meaningful and rich connections. I have different type of learners, I have learners who like to learn from each other, I have learners who like to learn by themselves. But I also have different learning styles of students, where textbook driven type of learning disengages my students. They don't feel motivated in the learning, and I look back to at the beginning of the year when that was a big part of my practice, because teachers use textbooks. Like that's what we're used to using. And now I

look back, and I think about you know, where they were in the beginning, and those students were very disengaged in my lessons, and they weren't very motivated to learn, and they didn't see themselves as a valuable member of the classroom culture. And now I look back, and I'm at a place at the final week of grade five, and I look at these particular students who are engaged in the learning, who go into the computer lab, and they're sharing their knowledge, and students are asking them, how do I do this, and do I post a video, and how do I use my theory on knowledge forum. And it gives them the confidence and they're wanting to be involved in the learning, and no knowledge is not a valuable piece of information. And even a smallest piece of information that a student, in the beginning of the year, would not want to share because they wouldn't think that their learning is valuable. But in the knowledge building forum, they're feeling that their voice is heard, and their knowledge is useful, because even their one sentence that they may give me, only takes it to the next level, and other students are sharing from their own knowledge, and it was them that started that process. So for me, knowledge building not only provides students with their own voice, it really drives their learning, and it provides them with opportunities to build their confidence, and be engaged in the learning. My special needs students, and my students who really need extra support, and through knowledge forum, where they're able to take their own natural curiosity about something that they're interested in, and post something on the forum, and have another student go into that forum, and take what they're learning, and build on, and asking them a question to think critically, or and to think differently about something that they started. It builds their confidence, it builds their self esteem, and they feel that they're a valuable member of the classroom culture community. Knowledge building has really opened a whole new perspective for me as a teacher, because I now can help develop students become critical thinkers, and help them be prepared for the future, and changing how they think outside of the box, and you know, being open to think about, you

know, how to become problem solvers, and how their voice is the central part of their learning. I don't have to sit in front of the classroom, and I don't have to open up a text book, and I don't have to, you know, sit there and directly teach them, but I can now be a facilitator for them. Witnessing my students knowledge building, and sharing from each other, and taking their own learning and their inquiry based learning, and hearing them say to me, Mr. Frenza, you're now a facilitator and we're the teachers, and we're the drivers of our own learning. It's one of the greatest experiences that I've encountered.