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## **Making Thinking and Learning Visible: Self-Regulation**

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## **Making Thinking and Learning Visible: Supporting Self-Regulation**

Dr. Stuart Shanker, Distinguished Research Professor of Philosophy and Psychology, York University / Director of the Milton and Ethel Harris Research Initiative (MEHRI): Here in Ontario, we've created this program, the Early Learning Program, which is specifically designed to enhance self-regulation in young children, and really set them on a trajectory for strong, robust learning when they hit primary school. One of the big problems that we're encountering is, we'd go and talk to teachers and parents, there's still not a clear understanding of what self-regulation is. In fact, there's a tendency to confuse self-regulation with self-control, but these are not at all the same thing. Self-regulation is really referring to a sort of foundational process which occurs on a number of levels, which is critical, absolutely crucial for the child to develop self-control. So what do we mean when we talk about self-regulation? Well, we divide it up into five distinct domains. The five domains are; first, biological, second, emotional, third, cognitive, fourth, social, and fifth, moral. And one of the most interesting aspects of this model is, that all of these levels are working together, they're all influencing each other.

At any stage of a child's life, we really want to be focusing on the first three levels, how well that child is regulating his arousal states. So what we mean by this? Well, a child has to deal with all sorts of stressors, and these stressors can be both internal and external. What do we mean by an internal stressor? Well, for some children, they're so sensitive to sounds, or to light, that a visual stimulus, or an auditory stimulus can be a real stressor. Going into a noisy classroom, or onto a noisy playground can be a stressor for this child. To deal with that stressor, the child has to expend a certain amount of energy. They have to, in essence, burn things like adrenaline, in order to rise to the challenge, in order to be able to stay calm despite these almost aversive, almost overwhelming sensations that they're experiencing. This is what we mean by self-regulation at the initial, at the biological level. It's this ability to stay calmly focused and alert, even though there might be things in the environment which are stressing the child's nervous system. If the child has trouble with his environment, or her environment, because of, let's say, sensory or motor sensitivities, the child may have to burn way too much energy, way too much of the time in order to get in that calmly focused state. So what we have to figure out is, if we have a child who, for biological reasons, is a little bit over aroused, a little bit hyper-aroused, or a little bit under aroused, what can we do to get them into that beautiful zone of being calmly focused and alert, where learning takes place? Where they have the greatest capacity to pay attention.

So for emotions, we now know that there are basically two kinds of emotions, positive emotions and negative emotions. And positive emotions are things like happiness, curiosity, interest, love, and negative emotions are things like anger, fear, shame, anxiety. In the early 1990s, psychologists made an incredibly important discovery; positive emotions create energy. Positive emotions create those resources for dealing with stressors. And every learning encounter involves a stressor, it's something new, something that has to be mastered. So the more the child is experiencing a positive emotion, the greater the reserves, the greater the resources for tackling that challenge. Conversely, negative emotions drain energy. Negative emotions are a significant drain on the child's energy reserves. Anger, fear, these can make it even more difficult for a child to pay attention, or for a child to persist on a problem. So what we're studying very carefully in the province is, at this level of emotion regulation, what sorts of activities promote the positive emotions, and what sorts of activities really seem to exacerbate negative emotions? Because what we want to do is, get that child in the sort of sweet spot, the zone, where they have the greatest fuel, the greatest resources for sustained attention.

Team One:

Speaker1: What did you find you had to adjust from day one in terms of things like entry, or scheduling, or whatever?

Speaker2: We had to give the children a lot of choice, because if we had everyone doing something all at the same time, we would end up with giant line-ups of 26 children waiting for our attention. So what we designed from the beginning was, a very free flow to the room, where kids were making their own decisions. And so we found that we had kids in different areas all the time, no one was waiting because they knew that they could just go to another area, and then they could come and get the two of us when they were ready to share. So we took out things like, everyone must sign in, everyone must write at the same time.

Speaker1: So we were talking about the schedule, and this looks really like a full day. What did you have to do with scheduling, if anything?

Speaker2: It was something that was decided with the children, as we got into the flow of our days, and they got a sense of what was going to happen for them, we talked to them about what it looked like, and what would help them to be able to keep track of the day. And so we came up with a schedule that's actually on Velcro, and amazingly, they check it every single morning, and if we have not changed it, we are informed.

- Speaker3: They let you know if the clip is in the wrong spot.
- Speaker2: The clip moves down as the day goes through, they notice right away if something has been moved around. But it's also a good way for us to let them know if there is a change at the beginning of the day, so they can expect that if something gets moved around.
- Speaker1: I know that you usually start with a welcome circle. It's not very long, but I know that you do start with that. Why do you have a welcome circle?
- Speaker2: The decision there was made to build community, primarily. We have a wide range of ages and abilities in the class, and so we wanted a chance for everyone to come together, even for a short time, to get to know each other, to feel good about the learning we're doing together. Sometimes it's a whole group experience, like this morning when Lisa created a compost with the kids. It was sort of something that we all needed to do together to have a communal experience. But it's often a chance for us to do some drama and movement things that allow them to interact with each other within a whole group in a certain amount of space, and we found that that's really helped with self-regulation as they move through their day.

Dr. Stuart Shanker: And then what we want to happen is, we want the child to learn how to do this for themselves. We want the child to learn how to identify what their arousal state is, and what they can do to calm themselves down, or to get themselves motivated, to get themselves up-regulated. That's just the first level, that's the biological level. But we can tell a very similar story for each of the levels as we move up that five domain model that I gave you at the start. At each level it's going to be a story about the stressors on the child and the reserves that the child has to meet those challenges, whether they're cognitive, social, or alternately, moral and spiritual.

### Classroom One:

- Teacher: I see how you found a way to balance all these different pieces, Raphael(ph). Do you think the baby's going to be able to fit through now? No? What do we need to do in order for the baby to fit through?
- Student: Let's see.

Teacher: Let's see. Halle's(ph) going to try. Oh, is the baby able to fit through?

Student: Yes.

Teacher: The baby did fit through.

Student: And it didn't break.

Teacher: And it didn't break. Are you going to try two, Saskia(ph)?

Student: Be careful.

Teacher: Be careful. Do you think there's a way that we can make it a little bigger so the babies can stand through them?

Student: I'm in the pool, I'm in the pool.

Teacher: How do you think we could do that?

Student: We turn it.

Teacher: You're adding another piece. Ah, wow. Do you think the babies will fit through now? Halle(ph) and Saskia(ph), Raphael(ph) had changed the tunnel a little bit. Do you think the baby will be able to fit through now?

Student: You want to go through the tunnel?

Teacher: Uh-oh.

Student: It's a long way.

Teacher: It is a long way.

Student: Whoa.

Dr. Stuart Shanker: The teacher herself, or the ECE, has a couple of responsibilities, or a couple of challenges when they're trying to enhance the self-regulation of every child. She has to observe carefully, and she has to try to figure out what are the activities, what are the kinds of practice that will help this child get grounded again? And she has to help the child become aware of all this, she has to help the child become mindful of all this. Now, we have a

great weapon that helps us do this, and that's the child. Children like to be calmly focused and alert, it feels good, it feels better. It doesn't actually feel that good to be hyper, or to be under aroused, hyper-aroused. They want this, and when they begin to experience it, what we can do with the child is, explain to them, how do you feel now? How is your engine running now? Is your engine just right, or is it running a little fast? Or is it running a little slow? Well, in the beginning, no child gets it right. In the beginning, pretty much every child will say to you, oh, my engine is just perfect today, even though you know the kid is really hyper-aroused, or really hypo-aroused. So then what we'll do is, we'll try to figure out what are those kinds of motor activities that will help the child get grounded, and this can happen fairly quickly. And then ask them again, now how is your engine? Oh, now my engine is just right. Well, hang on, a second ago you said it was just right, but it wasn't, was it? No, no, now it's just right. And what we're learning is, that by having this daily experience with the children they can learn this. They begin to learn what it feels like to be calmly focused and alert, and they begin to learn, what are the things that tip me over? What are the things I should avoid? What are the things I should do when I feel like this? For some children it might be, maybe what I need to do when I feel like this is, I need to go sit by myself for a couple of minutes. And we see them do it. So what we're doing is, we're guiding these children at a very young age through this process of self-discovery, of learning how to self-regulate. We are regulating the child so that the child, by the time he or she enters grade one, can self-regulate. And what we've seen over this past year is, four and five year old can do it.

### Classroom Two:

Speaker2: The biggest thing we've noticed this year with the children all being engaged is, they've made all the things in the classroom on their own. So the restaurant, they're the ones who decided to make the wallpaper. They made the microwave and it was all their decision to make the things on their own.

Speaker1: In previous years it was the teacher doing all of the work by themselves, it was our themes and our ideas of what we thought was important, and we put it out, we got all the materials out. But this year, we've been working together, both the ECE and the teacher, but also with the students as well, and it's based on their interests, and it's based on their experts, what they're really good at. And so again, they have made everything themselves, they've been involved in, what do we need? The entire process of gathering all of the materials, setting it up. If we don't have it, how can we make it?

So because they've made it all themselves, it's very authentic to them, they're able to make the connections, they're able to stay engaged and be very interested in it, because if it was something that we made up without connecting it to them, they sometimes didn't know what to do with it, they were unsure. But because they are involved in the entire process, they're hands-on, they're fully engaged, and they know how to make those connections, they go, oh, yes, we need this, what about this, and look what we can do with this.

Dr. Stuart Shanker: One of the big challenges that we face is, trying to explain this distinction between compliance and self-regulation. And it's difficult because compliance itself is a messy concept, it's a complicated concept. The simplest way to understand it is, that self-regulation is really about learning how to marshal your resources, how to recover from an effort. Learning how to calm down when you're anxious, or frightened. Compliance is doing something because you've been told to. Compliance is about doing something that the child is motivated by their fear of the consequences. Now, clearly everything we've been talking about today is this distinction between mindfulness, awareness of what I need to be calmly focused and alert, and only doing something because I'm frightened of the consequences. In fact, we know now, we have a lot of research telling us that fear based approaches to learning do not promote retention. Having said that, there's another aspect of compliance that's very important, because we do want the child to want to comply. We want the child to want to be a responsible member of the classroom, a responsible member of the community. We want the child to be compliant with the kinds of rules that we have, not because he's afraid, not because he wants to avoid punishment, but because he wants to be that kind of kid. So what we're trying to do is, we are trying to encourage children to develop the desires to learn, to be socially responsible, to be a moral individual. And what the self-regulation story tells us is, these are things we want the kid to learn, and the kid can't learn it if the child is hypo or hyper-aroused. They can't pay attention, their attention is flitting from one thing to another. Whatever it is we want them to learn, whether it's language, or facial expressions, or gestures, or reading, or math tables, they have to be grounded, they have to be fully paying attention.

One of the questions that Doctor Pascal directed us to look at most carefully is, could we create in the early learning program an experience that would actually serve to enhance children's self-regulation? In other words, he wasn't interested in what we now call "schoolification," he wasn't interested in taking formal education,

which let's say, begins around grade one, grade two, and scaling it down. What he wanted was to know, could we design programs where the child, by interacting with trained specialists and by interacting with other kids, would actually begin to enhance their capacity to deal with stressors? Especially the stressors that they were going to encounter in school. We have stressed two critical components in the curriculum that are designed to enhance self-regulation. The first one is knowledge based, in other words, what we're trying to do is, explain everything I'm talking about today so that they understand the biology, that they understand the role that emotions, or that cognitive strategies play in all this.

### Team Two:

Speaker2: Well, I think what we were noticing most was, we always seemed to be having the children tidy up. So they were just getting engaged in something and we would be pulling them away to say, okay, now it's time to, and it was either lining up, or sitting on the carpet, getting their hands washed. So we were taking away from their valuable play time.

Speaker1: So what we decided was, we thought, well, why don't we try having snack during our centre or play time? And it was amazing what happened. The children, they enjoy it, they love it, they just go and get their snack whenever they're ready, and they sit and have conversations with their friends. And one day we had to do it where we all had it together and they didn't like it, did they?

Speaker2: No, they didn't. I just found the children became more independent. They just knew that they could sit down, and they knew what they were going to eat, because we've always talked healthy, so they knew what to eat. They weren't always coming to us, well, open this, open that, they were just learning to do it, or they were helping one another. And I just found that, between Kerri and I, we weren't constantly nattering at them, because now you have to do this, and why aren't you tidied up, you should be tidying up, we need to be on the carpet because it's time now to be on the carpet.

Speaker1: So by having snack during our centre time, we've eliminated a whole time of sitting on the carpet and lining up at the door to go down to the bathrooms, and then waiting, and lining up in the hallway. That is eliminated, and it's allowed us to have a full hour, if not longer, of play-based learning.

Dr. Stuart Shanker: The second thing that we've stressed is, that this has to be a play-based approach to learning. And why is that so important? Everything that we want these kids to be doing has to be in some sort of play-based context. Play is how children learn. What we want to do in our play-based approach to learning is, fire a child's imagination. Fire a child's curiosity. For that to happen, the child has to be given the space to find what fascinates him. To find what are the things I want to learn? What are the things I want to do? Children learn by becoming fascinated, and the more fascinated they are, the more they will want to acquire those skills that we want to teach them. The more they will be driven to learn how to read, to use reading, and their reading will be functional. Their reading will be driven by their desire to learn about what they are captivated by.

### Classroom Three:

Speaker1: They have their option of choosing where they'd like to go throughout the day.

Speaker3: And this centre is always really busy. It looks fairly calm today, right?

Speaker2: It does, this is our dramatic play.

Speaker3: It's been a Tim Hortons, a McDonald's, an airline.

Speaker2: Yes, it's been an airport, a train station.

Speaker1: A bakery, hair salon.

Speaker2: Yes, it was a bakery a couple of weeks ago, hair salon. It was a light lab a couple of weeks ago. We were discovering light and the children had a huge area to investigate with all kinds of different lights, we had a big tent in here. The big thing that we've learned in here is, that we need to let the children make the decision about what it's going to turn into, and then we actually have a crew that comes in and sets it up.

Speaker3: A crew?

Speaker1: The dramatic play crew.

Speaker2: We have a crew that comes in and they move the furniture around and they create the new space.

Speaker3: Oh, that's really neat.

Speaker2: And one of the things that we found is, if we allow them to do that, they take a whole lot more ownership, and they play better and more frequently in here. So they come up with lists of things we need, we usually brainstorm and then we go out and find whatever it is that we need to create that space and they do that. And then they take it down, usually, as well.

Speaker3: Note to self, always have a crew.

Speaker1: And it's great for us, too, because then we're not panicking thinking, well, when can we get this set up? When are we going to have time to do it?

Speaker2: We make it as part of the learning.

Speaker1: We ask them and they love it.

### Classroom Three:

Student: Wow. Look. There's so many details.

Teacher: There are so many details in this mural. Do you know that I think people are going to have to look for a long time to find all of the little details we've put in it. Where are we going to hang this?

Student: Maybe we could hang it on the wall that's right empty, like up there.

Teacher: There is a little bit of space right up there. It deserves to be some place really special, though, don't you think?

Student: Oh, I know, outside in the hallway.

Teacher: That's a good idea.

Student: So some people can go, oh, wow, how did they do that?

Dr. Stuart Shanker: So what we're really doing with our play-based learning approach with four and five year olds is, creating in them the passion to learn. What we're trying to do is, once the child begins to experience this joy of learning, you've got them, the child's hooked.

Classroom Four:

Teacher: We wanted to take what was happening around light and mirrors, and extend it in a different situation, so we intentionally placed materials that might help them do that. So we have mirrors, and metal, and the submersible light balls so that they can maybe find out something more about what they've been researching. Well, I think the water table engages students. So if we use that engagement, they're naturally gravitating to this area, so why not bring learning to something that they're really enjoying?

*(Students at play.)*

Student: A flying saucer.

Teacher: So what are you guys discovering over here?

Student: This is a game called saucers (inaudible).

Student: Yes, and they got saucers here and they just found a flying saucer and (inaudible).

Teacher: They found a flying saucer?

Student: Yes.

Teacher: Okay, where should I go with the waterproof camera?

Student: This way.

Teacher: Over here first, Liam?

Student: Yes.

Student: Then next over here.

Teacher: Okay, should we go over here?

Student: Yes.

Student: Now we need to go in here.

Teacher: Should we see what the pictures look like? Oh, look. Whose hand is that? I think that's Angel.

Student: No, that's mine.

Teacher: Is that your hand?

Student: Yes.

Teacher: Oh, there, look at that. What do you notice around the light?

Student: My hand.

Teacher: Your hand, you're holding the light, but what else? Look around the light.

Student: (Inaudible) saucer.

Teacher: What shape? Yes. That's really neat. Should we take a couple more?

Student: Yes.

Teacher: Okay. Where should I go this time?

Student: You should go in here.

Teacher: In there? Okay. What does it look like this time? What do you think it's going to look like? That one didn't work, let's try again.

Student: Hey, that's me.

Teacher: Well, obviously I'm noticing their engagement and how we can make connections...

Student: Can I try it?

Teacher: Sure, Miguel(ph). How we can make connections in all their learning, and bring in their inquiry into other centres. Okay, just press that button.

Student: That button here?

Teacher: And I think children's natural curiosity just makes them want to learn more, and they're so engaged in everything. I think every time we put out something new in the water table, the play just changes so much, and it just amazes me every day that they're able to do so much with a few rocks and some metal and they come up with this amazing game. They amaze me every day.

Dr. Stuart Shanker: I've come to believe it's perhaps the single most important job that anyone can perform in our society. I see our teachers and our ECEs as literally the Vanguard of the next generation. They are the ones that will create this healthy society, this society of young adults who are motivated to not just learn, but to give back to society. But to do that, to do such an important and demanding job requires that we ourselves stay self-regulated. So we do an awful lot of work in programs around the world with teachers, helping them to understand themselves, helping them to understand their emotional needs, or their arousal needs, so that they can stay calm, so that they can be focused. What we found is, that just as children have to become mindful, mindful of their self-regulation states and strategies, and parents have to become mindful, so do our teachers. And the better they do this, not only do they enjoy their job so much more, not only do they feel, when they come home from a day's work, energized, eager to do the job the next day, but the kids do better, too. Everybody does better.

#### Classroom Four:

Student: So can somebody take some tape and roll these two?

*(Students at play, working together on task.)*

Teacher: Can I suggest that you have a little meeting about it? Because you have a lot of people on your team here. Mikayla(ph). Gionni(ph). I'm suggesting that you guys have a little meeting about this.

Student: Okay. Meeting.

Teacher: Hailey(ph)? This was your research, so you can decide. Okay, listen to Hailey.

Student: I already got two on.

Student: Okay, so, Mikayla(ph), can you tape that around these? Okay, now it's somebody else's turn to cut a piece and do it. So— no, it's Charlie's turn. Liam, it's Charlie's turn. Good, Will, good.

*(Students at play, working together on task.)*

Student: So there go, there's those two stuck together. Okay, Gionni(ph). I need this one, Mikayla(ph). We can do this. Okay, Tanner, you put the blue on top, okay? Because blue is a nice, pretty colour, that's

my favourite colour. So we're going to make sure it doesn't overlap the orange, and then, Mikayla(ph), you put the elastic over top.

Student: Hailey(ph), this flashlight doesn't work, though. See?

Student: Okay, we'll worry about that later when we're going to use it.

Student: Uh-oh, this one ripped.

Student: It's okay, just leave it, okay?

Student: Well, half of it could do it.

*(Students at play, working together on task.)*

Student: How are we even going to make this?

Student: Will, can you turn this one on?

Student: You're right, Hailey, it does make colour. See?

Student: I told you.

Student: It doesn't work.

Student: Oh, yes, it does, there. It's on. So okay, turn off your red, Will. Okay, good, Charlie, that's very good.

*(Students at play, working together on task.)*

Student: Eric, no, you're in a movie, see? Look behind you.

Student: Well, what's a good reason for it?

Student: The batteries are dead.

Student: That's the flashlight we're going to worry about later, okay?

Student: It is on, but its not turning on. Hailey(ph), here's another one.

Teacher: Well, one thing is, I immediately felt like I had to intervene, and even I'm noticing the body language of the children, I really didn't need to, and after a few minutes, I realized I really should have backed away and let them solve it on their own. I think sometimes we're too quick to try to resolve the conflicts and you know, we really need to know when and how to step in, and stop over-doing it. So I definitely

realized. I notice the collaboration, I'm noticing collaboration amongst ages groups, which is very significant. I've been listening to some of the language and I'm hearing children affirming each other. I'm hearing problems beings solved. I see that everyone is playing a part in this and ideas are being listened to, they're listening to each other's thoughts. And I certainly see the engagement. And I notice, despite my efforts, the conflict has been resolved on their own. So really, I didn't need to be there.

The children self select their work during the day, and so we have meetings and we gather and talk about the research they've been doing. So yesterday Hailey(ph) had developed a theory about a rainbow and she had a plan of how she wanted to construct that, so in order to honour her ideas we made sure we provided those materials today. And I think, as a result, we have a high level of engagement.

Teacher: The freedom to explore and take that ownership of their learning, I think is just such a valuable thing for them, and because we've put out the things that we have, I think it really shows them that we value their thoughts and their thinking, too. And I think that is just so empowering to them, that we feel what they say is important.

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