

Lectica PDFP interview with diagrams



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TIM: Hi Theo. Thank you very much for allowing me to interview you for the students of our PatternDynamics foundation program. For all of you who are listening, I'm with Dr. Theo Dawson and she is the executive director of Lectica. Lectica builds assessments that are designed to foster learning in really new and powerful ways. I've had the pleasure of doing Lectica assessments and they've been really powerful for me. I think they'll support me lifelong because they're available. I'd like to ask Dr. Dawson some questions so you can describe to us a little more Theo how Lectica works; what its approach is and very specifically, I'd like to start off with the question: How are your assessments different from the kind of assessments that were used to when we take test in high school we get a score and there's a lot of pressure? Maybe some of us don't feel that that's very supportive for us and how we learn, maybe others do but how is Lectica different? What are your assessments really all about?

THEO : Well, Lectical assessments are different from other assessments primarily, in that, we start out with very, very different assumptions about the purpose of assessment and about what assessment ought to be. The first principle in the development of all of our assessments both for k-12 and for adulthood is that the first purpose of every assessment should be to serve learning for the student and also for anybody else who's involved in the assessment process as a matter of fact. All of our assessments are built with the instructor or mentor in mind who's going to be involved in the process and also administrators who might be involved in decision making around what happens within an organization. The idea is that everybody learns but primarily, first and foremost, it's the student who's prioritized and just that by itself makes our assessments completely different from other assessments because other assessments are actually primarily made in order to sort and grade people, they're not made for educational purposes.

Now this idea of having assessments be educational is isn't ours. It's an idea that has been around for a while. Assessments of that kind are called Formative Assessments. But instead of trying to make a new class of assessments, what we're trying to do is actually replace a way of thinking about assessments -- the old way of thinking about assessments with a new way of thinking about assessments that really changes how assessments are used, what they're purpose is and the function that they play in learning. Now, the second thing that's really important in our assessments is that all of them are built with a particular learning model in mind. We call it 'The Virtual Cycle of Learning'. It's built off of observations that I made many, many years ago when I was practicing midwifery. Over 10 years I met about over 500 babies.

Somewhere in the vicinity of 500 babies and there is one thing that I've noticed with every single one of them --- they were all hopelessly addicted to learning.

TIM: As a natural beginning in life that's how we're oriented.

THEO: We're totally oriented toward learning. The thing that struck me so much is that they we're willing to suffer again and again. They we're willing to go through almost anything to feed their addiction. I saw children who fell down literally hundreds of times in the process of learning to walk and I'm thinking: "What's going on here?" If this is what learning looks like, if learning is something that's got pain in it and we still remain addicted to it, then there's something wrong with the way we think about learning. I began to study cognitive developmental psychology many years later and one of the things I learned about was what's called the 'Dopamine Opioid Cycle'. It's a cycle that happens in the brain and it's also called the 'Wanting and Liking Cycle' or the 'Wanting and Reward Cycle'. That Dopamine piece of the cycle is; Dopamine is a hormone that makes us want to strive, makes us want to explore, and makes us want to experience things. And Opioids, I think we all can guess what those are; those are things that make you feel good and happy. At the same time that people we're learning this about brain and its function, we were learning from behavioral psychology that even adults don't like to learn in situations where there is no pain.

TIM: A little bit of stress and pain is required for this learning cycle?

THEO: Exactly, and it's different for different people. I mean there are kids who learn to walk without falling very often because they are more cautious. We call it 'The Goldilocks zone'. They're

zones that are kind of happy learning and it's a little bit narrower than the zone of somebody who is a real risk taker for example. You have to figure out what that zone is for each individual but if you can nail that zone and you know exactly how much pain and discomfort and chaos that person is able to handle and the way to learning and how much they enjoy, then you get that Dopamine Opioid Cycle to just keep cycling, keep cycling, keep cycling.

TIM: And so learning becomes really fun at that stage.

THEO: And learning is returned to fun. It's returned to fun. And I think everybody could think of something that they've enjoyed learning. Usually it wasn't in school.

TIM: Let's talk about that. Why is that? And what's wrong with our education if that's not the case?

THEO: Because the Dopamine Opioid Cycle although it is recruited very well by the media and by various sense of friction and gamers, we haven't recruited it in education. In our educational system we think, 'Oh! They're five years old now we have to teach them this.' 'Oh! They're 7 years old, now we have to teach them this' but in reality your age has very little to know what is it do with what's the most interesting thing to come next for you.

TIM: So the Goldilocks is zone for you?

THEO: That's right. This is the second principle for us then and this assessment should help people learn in their Goldilocks zone.

TIM: Right! So once we know where your Goldilocks zone is then we can help you find ways of learning that you don't lose your Dopamine before you get to your goal.

THEO: That's right. We can give you the right porridge or the right bad or dangle the carrot at the right distance from your nose.

Tim: That seems to me, Fun because..

THEO: ..that's powerful and fun, yes.

TIM: That's the kind of learning I really love to do and by teaming up with Lectica, PatternDynamics that's the kind of learning in our programs we hope to build in.

THEO: That you're fostering.

TIM: That we're fostering, yea. It's been my experience

THEO: You're creating those virtual cycles for people. So you're helping them to stay in their zone.

TIM: Right, so that's what is so powerful. One of the elements that is so powerful about doing these assessments is that we can help you find your Goldilocks zone. Lectica actually prescribes or gives you a list of learning resources with your assessments such as the ranking saying: 'Here you are in these various ways of learning', say about decision making and in each of these called sub domains. "Here's your next step and here's what resources have to support that", "Here's your book and here's some training you might consider" and "Here's the next ways."

THEO: That's right. And that's the third principle. Is that assessment should be based on knowledge about how people actually learn the things their assessing. That may sound like 'I know, duh?' but there are no other assessments that are out there that are created with that kind of depth of knowledge that help people learning. So a typical assessment doesn't tell you anything about what comes next. So in making Lectical assessments, I say,

we study the hell out of how people learn the concepts that are targeted; the skills that are targeted in these assessments and we never stop studying it. We have created like an open book system for building and constantly improving upon the assessments that allows us to learn from every single person who takes one and continue building our understanding of how learning takes place in a very particular area. We're really devoted to this idea -- that a good assessment is going to provide these kinds of support for learning. Not just for individual learner but also for the educator.

TIM: Everybody involved is part of a learning process. Theo, can you describe a bit about how you study learning and how you identify these different components that people need to put together for a particular skill; these things that is called sub-domains that I've learned about at Lectica?

THEO: Well this is a really long story, I'm going to try to do my best to make it a little bit shorter but the best place to start is probably with the scoring system that we used to determine where on the learning scale a performance belongs or given the way of thinking about something belongs. We have spent many years refining a learning scale. We can call it a 'Developmental Scale'; we call it 'the Lectical scale' because we've trademarked it. We have this learning scale and we find the scale that people started talking about it over a hundred years ago now to the point where we can place performances or ways of understanding pretty precisely along that scale.

TIM: So this is like a ruler where it measures, say, length could measure a piece of paper or a piece of wood or a rock. So this scale can measure..

THEO: This ruler measures the developmental height of thinking.

TIM: Of any skill? Was that your contention?

THEO: ..of reasoning in any scale domain -- independent of a particular domain. It's conceptually quite mathematical underneath it which makes it sound really not very sexy.

TIM: You know what they say, for every formula you put in your book you lose half of your readers.

THEO: I know, exactly so it's really super abstract and nobody really wants to learn how to do this except a very few crazy people in the world but we have learned how to pretty precisely place performances in scale and along the scale. What we do is, when we are going to develop a new assessment, the first thing we do is usually someone who comes to us and asks. We'd love to be able to assess how well someone's learning, how to do critical thinking for example or how to understand leadership decision making for example. The first thing that we do is we figure out what's the current knowledge out there on about this constructs. So we read the literature that already exists and why we reinvent the wheel to find everything we can from the literature. And from that, we make some pre-selections of what we think the primary constructs are going to be or the primary themes or scales are going to be that are what we want to target with the assessments. We use our experience with building assessments to determine what form the assessments going to take. Is it going to be one where we're really asking people to define things for us? Is it going to be one where we're asking people to solve problems? There are a variety of different forms that things can take. We actually build our first version of the assessment and we give it to a whole bunch of

people who we represent a wide range and sometimes that range is from age five all the way up to PHD. Sometimes it's just adults in management; all in different levels of management that varies depending upon the needs of the client and once we have collected a bunch of these, then we score them with the ruler and we place them along the ruler. We go in and we do this really intense exploration of what the skill looks like in each one of the levels. Each one of the level is along that metric. What happens during that process is that we usually learn that our first way of organizing the themes or the skills is wrong. That's not the way that people really learn it and so we end up having to rethink what mathematic structure is, and so learn what their major themes are. And we learn about the different pathways to which people seem to navigate moving up the scale on those particular competencies.

TIM: These themes or competencies; there's a number of them usually required for a higher order scale like decision making. There will be a series of sub-components or themes as you've call them or sub-domains. And discovering the pathway that people take with these various sub-domains and how they might complement each other and knit together to form a higher order skill.

THEO: To form the constructs of the next phases and how people will climb that ladder; part of our research is also trying to figure out which pathways through this seem to be more optimal than others. There's multiple ways of getting from point A to B but other ways from getting point A to B that are predictors of whether if you're going to be able to move to C for example. Those are the kinds of things that were also paying attention to. But, when we're building assessments we primarily and initially just

looking at trying to figure out, okay so, what's the sequence through this people learn this sub-skill typically?

TIM: There's a real reader here. Your learning's are very powerful things about how people learn this particular skills and how to foster.

THEO: And all of this is codified in a big relational database of course, this are very technologically intensive

TIM: A lot of data there for you to work with.

THEO: Well, people call this 'Big Data'. What we learn from this process is we populate our assessments and we populate lesson plans and things like that. Once we know what sequences are, then when someone gets a score on that assessment in the future we can tell them what comes next.

TIM: You keep them in the Goldilocks zone where learning is fun and interesting and really engaging.

THEO: That's right and we still have a lot to learn about what that Goldilocks zone is going to be for that particular individual. We always tell teachers 'that's your job'. Get to know the learner well enough to figure out how much or how wide that zone is because if the person really likes a lot of ambiguity and chaos and they have a wide zone, they're going to be bored to tears when we can make it easy for them. Whereas the more cautious learner is going to be overwhelmed easily, so you need to try to figure out what's ideal for that person. But we make a kind of guesstimate for people that are kind of in the middle range and tie that feedback to particular learning resources that we think have the right level of challenge for someone who's performing in a certain level. That's also called 'Scaffolding'. It's called providing people

with learning materials that pull them up or support them to go to the next level in their thinking.

TIM: It's a structured way. There's this resource at this level and there's these resources at this level and for this particular sub-skill. You might want to do this that'll get you to the next level from where you are. It's very fine grain.

THEO: It's pretty fine grained and it can sound kind of mechanical when you first learn about it. It sounds like: 'Oh you mean like everybody has to learn the same exact thing in order to move to the next level?' But in fact, it's really fluid and there are multiple ways that people can go from one level to another and we provide enough resources. Usually the people that we're working with are using these assessments in their courses, are also providing additional resources so that everybody can find their own pathway. We don't want everybody to be a cookie cutter, cut out one another. Not that we would ever end up being that anyway because people are so diverse.

TIM: Theo, can you describe a bit about the ruler? The hierarchal complexity it's often called and how we move from one level to the next. Or the tears, how we move from one tear to the next tear perhaps even in the Lectical system.

THEO: I do call it the Lectical system but it's primarily built off of Kurt Fischer's Skill Theory and his Skill Scale. Piaget before Kurt Fischer discovered what Piaget called 'stages' and there were anywhere from four to five of these in his theory actually, I think he started with three and then it went up to five because his maximum number that he identified and Kurt Fischer calls those 'tears' now. There are five of them in Fischer's theory. They've also been called 'epox'. I like tears. Tears is nice, it will do too. And

each one of these tears ushers in completely new kind of skill or concept. Kurt Fischer calls them skills because skills could apply across the board from before your verbal all the way through the verbal period of your life but as you move through the levels they become more like concepts or a lot of them become more like concepts than skill their ways of thinking about things. In infancy, it's more about sensorimotor -- the actual physical actions that you do. We start first of all with just reflexive actions; just reflexes and then we start to build on those into patterns that we call 'sensorimotor skills' and then from there you move to something called representations where instead of having to physically do the thing you could actually talk about doing the thing.

TIM: You can represent it you have a concept or a symbol for it. Zack Stein has given a good example to help me more a lot here. He said, the sensorimotor that you experience as a kid around say bedtime; there's a series of things -- there's brushing your teeth, putting on your pajamas, it's getting to read a story, being tucked in bed. These are all sensorimotor experiences and are skills but at some point you chunked all of those together and kind of map them out and then you put them together into this kind of bigger chunk that's called bedtime and bedtime is a symbol or a signifier for all these sensorimotor.

THEO: It's a signifier for those actual actions in the environment and representations have this feature of being something that you could kind of point to or feel directly. They're concrete as Piaget would have said and Kurt calls these representations but they kind of have a concrete feel to them because their stories about what's going on in the physical world.

TIM: They're kind of like stories of a sensorimotor. They are very concrete like, the sensorimotor is very concrete. It's not abstract, it's physical. Then you get the next tier; is the representation. This is the chunking idea where the whole bunch of the sensorimotor stuff is chunked together in to a representation and that's the first kind of thing that happens and the bottom of the next tier. And then we map other representations and they get chunked up to the next. The first element of the next tier is that how the hierarchical complexity actually works.

THEO: That's exactly how it works. And each level becomes increasingly more abstracted from the concrete. The Sensorimotor actions are not abstracted at all from the concrete. We're actually operating on the world. Representations are more abstracted and then after representation we have what we actually call Abstractions. Abstractions are different from representations and that abstractions represent ideas that you could no longer point at.

TIM: So, it's not like bedtime. That's a fairly points to be conquered thing.

THEO: Because I can draw you pictures of all those things that you're doing in bedtime but I can't draw you a picture of friendship.

TIM: No, it's a total abstraction, there's nothing concrete that refers to.

THEO: Or truthfulness.

TIM: On the Lactical scale which goes up to thirteen, where do abstractions fit in the number system?

THEO: Now you're going to put me to work because I actually usually think about the top few. The Representations Tear starts with level five because there are two tears below it -- that sounds a little bit confusing. Actually it starts with level five because there's this weird zero down the bottom. So we start with the zero, it's actually level six but we call it level five. The representations here start with five, every tear is divided into three levels or four, depends on how you think about it. You'll get the idea of why sometimes we talk about it being four in just a minute. These three levels actually repeat in every tear.

TIM: And that's the identification of the element; a mapping of a bunch of these elements and then the systematizing of them into a chunk at the next level. Is that right?

THEO: Well, it's not at the next level yet. That's number four. When you systematize them into a chunk, they're not only coordinating the systems with systems but they actually become a new unit. That's the herald to the next stage. Let me go back and I'll just start.

It's the individual elements the first things that appear. You got a new kind of way of thinking. So you got bedtime but that just stands there by itself. Its bedtime and you're not connecting it yet to other kinds of representations yet. You're just building these individual elements first then you move on to being able to relate a couple of those to one another.

TIM: So maybe, bedtime and lunch time? Maybe? Or dinner time and bedtime?

THEO: You can say meal time which is bed time, lunch time and dinner time. That's actually fairly complex when it's a chain but is

still linear so it's still considered to be a mapping. Anything that maps in a line in a linear chain is a mapping or is a collection of things, like a pot where you got things collected in. And there's the systems level when you start relating these things together in more complex ways so, you've got more than two elements and they're being related to one another in complex ways that go beyond just a single linear.

TIM: Alright. So if we said something like there's bedtime, there's breakfast time, there's lunch time, there's school time, there's story time and all those things get to put together and the thing is called a day which is a system of these.

THEO: Or maybe a better example might being able to say that; you'd be able to say something like breakfast, lunch and dinner are all the same because we always sit down at the table together as a family.

TIM: Okay, so then there's an abstraction sitting at the table together.

THEO: That's a system because we've identified something that all of these things have in common.

TIM: I see, okay.

THEO: We're relating them all to one another rather than just putting them in a bundle together or just mapping them one to one another, one to one. Then you make a whole bunch of those. I think of these as like complicated stories at this level. They become complicated stories and you make a bunch of them and those are called systems as individual things. When you have a bunch of them that you can relate to one another; that's called systems of representational systems.

TIM: That's the fourth step, right?

THEO: That's the fourth step and it's also the first step of the next tear.

TIM: So that's the chunk.

THEO: It creates a new element. That's the big chunking.

TIM: Which is an Abstraction at this stage.

THEO: And now it's an abstraction

TIM: What will be an example of that?

THEO: Let's see if we can carry this particular example forward. I haven't actually used this one before. So, carrying this one forward, you might have something that emerges out of all of these experiences of meal times is together like quality family time.

TIM: Okay, because you can't draw that or point it or poke it with stick.

THEO: You can't try to point it. You can give examples of it still. You could give concrete examples of it but that wouldn't really capture what this whole thing is about.

TIM: That's much more abstract. Quality family time is an abstraction.

THEO: It's taking you to the abstraction level.

TIM: That's a tear jump. We've moved through the four stages of representations. We jumped up now, we're on the first stage of another tear.

THEO: The fourth level of the previous tear is the first level of the next tear. And you repeat that in every single one of the tear is a repetition of those three different kinds of ways of coordinating elements with one another within that tear.

TIM: Same process happens as you move through each tear.

THEO: Over and over again.

TIM: There's actually finer grain.

THEO: Its further divisions.

TIM: That's when you identify the assessments. Is that right? So you score you say, 10.2 and you know that you're in the first part of a certain tear.

THEO: Yeah, and this is our important contribution to the field or our first contribution was taking this model where we could identify the whole level. The model that Kurt Fischer developed allowed us to identify those levels and performances but we took it and we knew that in order to make this system useful, because the thirteen across the whole life span; that's not very fine grained. If I told you what level you're in, wouldn't tell you what you need to learn next.

TIM: No, the gap in your Goldilocks Zone would be too big.

THEO: It's too big of a gap, its way too big. If you're very high in a level, it could mean you're ready to go to the next level but if you're really low in a level it means you've got years of work to do still, to get ready.

TIM: There's years involved in moving through a tear.

THEO: There's more and more years involved as you go up the scale. There's more and more years involved in going through levels and going through tears as you move up the scale. It's just because things become more complex as you move up, so it's harder to learn it. It takes longer to learn it.

TIM: Let's talk about the particular skill in that regard -- decision making. I know the Lectical decision making assessment is one of your more developed assessments as in its done the most iterations. It had the most participants therefore you've learned the most about how it works

THEO: In the adult arena.

TIM: In the adult arena. Theo, do you consider decision making to be a kind of foundation skill for leaders? And maybe, explain a bit about decision making and its themes or sub-domains that you've identified.

THEO: Yes, I think that decision making is the foundational skill. It is leadership in so many ways. Leaders make decisions and most of the other things, other components that we think about when we think about leadership are things that contribute to better decision making.

I have an organization. I have three businesses. I see my role as a leader; as a decision making role and to understand why, I think about it that way it does help to understand how we think about decision making. Because some people think about decision making is a process of steps that you go through to make a decision but that's not the way that we conceptualize decision making. We conceptualize decision making as a set of skills that

you bringing to bear when you're confronted with an issue or a problem or a decision that's needs to be made.

TIM: This is a powerful distinction, I think, because I've learned a lot about leadership decision making as an organizational consultant and mostly it is a linear set of steps that people are taught. There are various of forms of these. What you're talking about is something very different; set of skills that you bring to bear.

THEO: Yes. You can bring them to bear and use as system that's got steps in it. I'm not saying that we should throw away decision making systems. It has steps. But the way we think about it more is the collection of skills. When we first started out building this assessment, we built it for a federal government agency here in the United States. When we first started out building it, we didn't know the component skills were. What we had was the skills that these organizations were mandating for; their management teams, they were saying: "Here are the things you need to be able to do to be managers". And when we went out and studied it. We actually found something a little bit different than what we thought we we're going to find. Importantly, one of the things that we found was that the primary most foundational skills for good decision making are perspective taking; what we call perspective seeking. There was nothing in the literature about perspective seeking.

TIM: I'm actually going in and asking someone for what they think. What their perspective is.

THEO: There's quite a bit in the literature about perspective taking and there's nothing in the literature about active listening and things like that but in terms of decision making, people hadn't

really pull that together in an explicit way. But we began to see absolutely critical perspective seeking was when we noticed that as people moved up the developmental scale, they did more and more and more of it. We thought: “What’s going on here? Does this mean that we can’t seek perspectives unless we’re highly developed?” And I thought: “No, I do remember my kids asking me a lot of questions when they we’re little.”

TIM: That’s right seeking your perspective.

THEO: I think it’s something that we unlearn because we kind of have a heroic leadership illusion.

TIM: We do have this model of leadership often in organizations now.

THEO: That’s right. And to look powerful and strong, we’re not supposed to look uncertain right? So why would we ask people what they think? What I think what happens is that by virtue of having to cope with the increasing complexity that comes with the demands of higher levels of management positions or anything that you’re operating on in life is highly complex, that you just come to realize in and of your own accord that I can’t do this by myself. I have to bring a lot of perspectives together because I need lots of kinds of expertise, lots of different ways about thinking about this in order to make the best possible decision. Because we have a certain kind of culture, this is a skill that kind of goes dormant for a while. Rediscovered in development as people; hopefully rediscovered in development. Not always rediscovered. A lot of managers can get very high levels without actually learning the skill but the most successful leaders are the ones that end up and are really rising to the top are people who have these and operate with these skills all the time.

TIM: We have identified two of these themes or sub-domains in decision making which is perspective taking and seeking.

THEO: Those are pre-requisites.

If you don't have perspective seeking, you're probably not going to be able to learn to do the other skills because perspective seeking is learning.

TIM: Right and it's really the kind of way of getting the collective intelligence on board.

THEO: Exactly. The other skills that we target are collaborative thinking.

TIM: That's the third, is it perspective coordination?

THEO: No, perspective coordination is the next one. Once you've got the seeking perspectives, the next thing that you will be able to do is actually coordinate the perspective you sought.

TIM: Can you tell me a little about what that means to you and how you've discovered that?

THEO: It means different things at different levels of development; which is why we kind of use that basket word -- coordination. It means how you put perspectives together in some levels. It means how you prioritize those perspectives. It can mean how you give priority to different perspectives. In other levels, it can be how you could have extract common themes from different perspectives and so it's about how you bring together the perspectives to help you formulate a decision. That's the most general way to state it and it's done in different ways over the course of development. And there are ways you can do it within a particular level of development as well. What are the sequences of

these? It's perspective coordination. I know I made the assessment. Its collaborative thinking, did we call it collaborative thinking?

TIM: I think you called it collaboration or at least when I did the full I think it is called Collaboration.

THEO: The fourth one is collaboration or collaborative thinking. The fifth one is contextual thinking and the sixth one is decision making process. We also tack on to the assessment skills for argumentation but those are actually not specifically related to the leadership in terms of the decision making domain.

TIM: That's your logic, is it? Like how you think about what you've done.

THEO: It's how coherent your thinking is; it's how well you predict over your arguments and it's kind of the quality of your thinking. We don't really want to try. Well, we're trying to put things on the scale in terms of how far along is someone on the scale. We don't want to confuse that with the quality that which they do it.

TIM: What's so interesting distinction with itself and it's probably a long conversation there but..

THEO: It's a really important one because if somebody is in this level of the scale but they have poor argumentation skills then its instructor is going to be helping them to develop the argumentation skills before they teach them the material, because the argumentation skills are about the mental map that you build as a terrain and until you build a good mental map you can't make a good argument.

TIM: That's interesting, that's a new perspective for me on the argumentation which is really helpful actually.

THEO: That's a very, very important piece of what we measure but that's not specifically a decision making skill. It's a skill that is brought to bear in lots of our assessments. The ones that are related to decision making are the perspective taking, perspective seeking, perspective coordination, collaborative thinking and contextual thinking. Those last two skills are important because it's not enough that you can coordinate perspectives but in order to actually do good perspective taking, you need these set of skills called collaborative skills and they're the kind of skills that you use in the process of seeking perspectives.

TIM: This is how you engage with another person or persons to get their perspective their intelligence.

THEO: And in the contextual thinking part, is about what are the context someone brings to bear when they're thinking through a decision making problem; and by context we actually mean something that is broader than we usually mean when we use the word context because we're actually also talking about the perspectives of individuals. An individual's mind is like a context in which a perspective resides or an experience of something resides but there's also the situation that that persons' in -- the specific situation they find themselves in a particular problem. And then there's how that situation is nested within a broader context of an organizational unit or the team or something else and then that context is going to be nested in an organization as a whole or a school as a whole which is nested in a business community which is nested in the social. So the context are all

about the different layers that we can bring to bear more thinking through our problems phase.

TIM: One of the ways to describe these problems phase at a certain level of development would be a kind of orientation to how the system works and often this kind of holarchical layering that you described the individual, their context maybe their team, their organization, society -- that's one way of describing systems or a systems within systems within systems.

THEO: Systems within systems but it's really important to understand that a 7th grader can talk about society. It's not the same thing as being able to say: 'Oh we have to think about this society here'. It's really about how well you actually can coordinate the interests of the society with the interests of the organization. At what level are you doing that? It's not "am I thinking about the organization?" It's how well I am coordinating the interests of the organization with the interests of that team.

TIM: The contextual thinking of theme or sub-domain is that how I coordinate the interest of a part with the interest of a whole.

THEO: That's right. There's certain relationship in how we do that with developmental level. There is some shared; we call "Shared Variants." If we did a correlation within the two, you'd find that they're related to one another but there's also a lot of independence as well. Only about a quarter of what's going on in doing contextual thinking is about the level that you're operating at on the Lectical Scale. Its counter to almost all of the models that exist out there because people have had a more simplistic way of thinking about it, probably that it comes out of never having actually to study how people learn to do this. By virtue of learning how people actually come to build these skills we learn that: 'oh it

doesn't work the way that we used to think it worked.' The same thing with perspective taking; the perspective taking models that existed prior to this work actually had it built into them that somehow you weren't able to take the perspective of the organization into account unless you could already take individual perspectives into account, but what we've found is that even in quite low levels people have a way of taking their perspective of the organization. It's just a less hierarchy complex way of doing so and they're consequently less adequate.

TIM: Right, especially if you're in a more complex world space as you say which if we bring this back around to conclude about PatternDynamics and its relationship to Lectica and the LDMA and the partnership we're forming about creating a very specific way of helping people learn to make good decisions which is based on the Lectical Scale and the LDMA assessment and PatternDynamics as a systems thinking or complexity thinking framework. The idea behind that integration is to equip people to make better decisions when they are in those more complex world spaces. For instance, if they're the leader or a change maker you're almost automatically in very complex territory these days. Maybe we can just wrap a bit Theo with why you think there's value in the systems thinking orientation or framework like PatternDynamics in conjunction with the LDMA and those sub-domains?

THEO: The way that I think about it is that, I've emphasized throughout this conversation, that we build our understanding of how people learn these concepts on what people actually do. We're not imposing a theoretical framework. We don't have theoretical frameworks that were viewing people through; we're just taking them for what they actually do. It's called the

‘Phenomenological Approach’. Rediscovering and then representing and we can do powerful things with that but the one thing that we can’t do is prescribe. We can only say: “Here’s what I think might be on your zone to learn next.” But we can’t say: “What’s the best thing for you to learn next in terms of building your skill more quickly or building your skill more effectively?” We haven’t created that model. I think of PatternDynamics as an excellent model for helping people to build systems thinking skills that go beyond what it is that we do on our own like flaunting around in the world to figure it out but actually scaffold our ability to do that. So we can become not so much learn to do it faster but learn to so it more effectively.

TIM: Its actual framework there that people can learn and it’s reliable and it’s repeatable. Now we’re rapidly learning how to help people learn the competencies around the systems principles that these patterns represents. Therefore we have scaffolding and we have a kind of method you can put to work through marrying it with the sub-domain as a kind of method where we take perspectives, we seek perspectives, we coordinate those, we collaborate, we think contextually, we make a decision. We describe that through our argumentation and then we use that as our actual learning loop of process as a kind of dynamic steering in our decision making process. We’ll discover because we’re assessing everyone before they start and after they finish our program then we’ll know if that leads to more effective learning of the skill of decision making.

THEO: More than just having that cycle, they have a tool kit that you’re giving them it helps them to decide what are the patterns that are involved here in this problem space and how can I use

these patterns to be able to support my thinking about these problems.

TIM: Well, I guess we'll find out because we're about to kick-off our program and students doing it will be watching this video and I'm just so grateful Theo that I've found your work, that I've had the opportunity to learn from you and Lectica and the other great people there and we can start to integrate this in to our program for what we hope to be very formative learning experience for folks. Thank you for your time today and I think we've all learned a great deal.

THEO: Thank you for having me and I just want to say to all the students in the course: "Happy virtual cycling!"

TIM: Great, Thank you Theo.