

## Thinking About Brains and PLA: A Conversation with Kathleen Taylor and Catherine Marienau

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*Kathleen Taylor and Catherine Marienau's book, Facilitating Learning with the Adult Brain in Mind: A Conceptual and Practical Guide (Jossey-Bass, 2016), explores what we know about the brain, right now, and how that understanding can and should inform both theories and practices of adult educators. Taylor, professor at St. Mary's College of California, USA, and Marienau, professor in the School for New Learning at De Paul University, USA, have provided an accessible way into a complex terrain with significant attention given to the day-to-day work of their adult educator-colleagues. Our conversation of 18 September 2018 took up many of the key themes of their fascinating volume – themes that we believe hold much relevance to our common interest in experiential learning and its recognition. Thanks to Kathleen and Catherine for their ideas, for their time and patience, and for their help in editing this interview.*

**Nan Travers (N.T.):** How did you get interested in writing on this particular topic, and why did you think that this was a really important area for educators, especially adult educators, to think about?

**Kathleen Taylor (K.T.):** It grew out of several things: One is that anybody who has a brain is likely to be interested in knowing how that brain works when it's learning. Plus, when you're an adult educator, you have the sense that "I ought to know how best to engage with adults' brains in order to promote learning." Exciting research on learning and the brain was increasingly available, but as Catherine and I delved into it, it seemed there were two major kinds: One was highly technical with a lot more Latin and anatomy than we found helpful. I don't really need to know where the anterior gyrus is. It's more about: What aspect of this might this be meaningful to me as an adult educator and practitioner? The other kind tended to be lists of directives: "Here are 12 brain-friendly ways to teach." For me to make sense of that and apply it effectively, I needed some sort of meaningful explanation. When we couldn't find what we were looking for, we finally decided to write about the adult brain in a way that is accessible and meaningful to practitioners like us.

**Catherine Marienau (C.M.):** When we began this project, we thought we were going to be highlighting methods and approaches that good adult educators use, and then explain why they are powerful and effective in terms of the brain and how the brain learns. We envisioned making familiar adult teaching-learning methods more visible to the larger world of higher education. But as we got deeper into the neuroscience and cognitive science and philosophy of mind literature, conventional adult learning-focused methods became less of the foreground for us. We found that these different ways brain science looks at learning had something in common we didn't expect. We describe it in the book as "embodied learning" [the ways in which the brain is connected with and responsive to every part of the body], and it turned out to be a major shift for us. Both of us have a lot of experience working with adult learners and feel pretty comfortable and confident in typical, generally discussion-based, classroom interactions. Now we realized that we needed to embody our approaches to teaching and learning, and that was scary. One of my colleagues was a theater and improv person and skilled at doing different kinds of experiential movement activities, and then facilitating meaningful debriefings. I appreciated watching how she did it, but I never wanted to actually lead these activities myself. In the process of thinking about and writing this book, Kathleen and I have had to push ourselves and each other out of our own comfort zones. It has enlivened my practice; I am more excited about my teaching than ever.

**K.T.:** We were more than a little uncomfortable when we recognized that if we were going to tell others

about embodied learning, we had to change what *we* do, too! We had started out thinking that we have decades of experiences, and we expected to have most of that confirmed. Now my practice has changed in ways I never could have anticipated. And I'm consistently willing to step off the high diving board into space, because it is rewarding, affirming, and most of all, I can see the difference in the students.

**Alan Mandell (A.M.):** One of the things that struck me in your discussion of “brain basics” is the importance of pushing away from some romantic notion of what you call the “curious brain” and realizing the significance of what you call the “anxious brain” and its effect on learning. Maybe this is one of those “high diving board” moments that points to the importance of confronting things that are different and, indeed, “scary.” The tendency toward self-protection is, it seems, quite great.

**C.M.:** I've worked in programs my entire professional life that encouraged and honored prior learning assessment. And it's been perplexing to me why more adult students aren't lining up around the corner to do PLA! Of course, it's essential that the process is rigorous and credible, so we provide lots of guidelines and rubrics. But for many students, our words on the page don't have a lot of meaning. The whole process is scary. Though we are offering them what we think is a gift, an option, an opportunity, their reactions are quite different. Some don't seem to believe the offer: “Oh, I already know that, so it would be cheating to have this recognized.” Or: “I already know what I do and it's not that important, so it couldn't possibly be worthy of college credit.” There can be a lot of self-doubt. And then others accept the premise, but only within limits: “I know what I know and I want to get credit for it, but don't push me to go any further.” The anxious brain is saying: “I don't want to be exposed; I don't want to be pressed beyond what I think I'm capable of.” So a self-protective response comes out in different ways.

**K.T.:** Before we wrote the book, I saw that students had widely different reactions, but I didn't understand how their anxieties related to how the brain learns. In the PLA system that we use – and I don't think our institution is unique – what we are asking adults to do is to consciously construct knowledge. Now that's actually a pretty big lift. We construct knowledge all the time or else we couldn't get from morning to night. But to do that consciously and to be reflectively aware of your process, and to go through your doubts and concerns that go along with that, and then to be able to say, “Yes, this is how I know what I know; I can name it and claim it” – that's a magnificent capacity we are fostering.

Our research in neuroscience taught us that the brain avoids the feeling of not-knowing. When, as Catherine mentioned, we wonder why students aren't lining up around the block to do PLA to get college credits, we have to recognize that we are really asking them to stand at the end of that diving board and jump in. Even though we think we're supplying floatation devices and all sorts of other supports for them – and even though we assure them that the water isn't as far away as it appears--we are asking them to do something that their brain desperately wants to step back from. PLA is both a wonderful and a terrible opportunity that we are giving these students – and terrible in the strict sense of “full of terror.”

**N.T.:** A lot of students have developed these self-scripts based on their past educational experiences and even though they've gone off and had other experiences, they're coming back to us with the images of what education had been like for them. I've always been fascinated with the fact that everybody has horror stories about their learning experiences; you really don't hear a lot of people just talking about past learning as being fantastic. I sometimes think about this as students being “learning injured.” So we've developed these self-scripts that tell us that every time we risk ourselves, we are potentially going to be told we're wrong or that what we know is worth nothing. In the prior learning assessment process, we see a lot of students who don't believe they actually have college-level knowledge. They minimize who they are and put themselves within this kind of capsule that doesn't allow them to move out. As you are pointing out, the anxious brain becomes a barrier. But can we take the anxiety that goes with the anxious brain and think of it in terms of helping students work with it as a messenger for change, rather than as a protective wall that that won't let you change? Can the anxious brain actually help the learning process?

**K.T.:** This is a fantastic question. Though there isn't a simple, one-step response – it is a process that involves many steps – we have an activity in the book called “the crowded brain” that effectively brings to the surface the kinds of injury you alluded to. Everyone has an experience of being told, usually in their fairly

early school years, although sometimes it's in their family, that you're not OK as a learner: you're stupid. Or some teacher thought he or she was doing you a service by telling you what you *couldn't* do. We cringe when we hear these stories, but we find that everyone has experienced something like it.

Having begun my own journey of adult learning when I went back for a bachelor's degree in my early 40s, I saw that the people, "re-entry college students like myself, seem especially likely to have these injuries." This may be connected to why they didn't get college done the first time – in my case, also the second time and third time. Those experiences are something we hold, we embody. So first we say: "This is likely to be what you have experienced. You may have forgotten it, but let's see if we can bring it back to the foreground." Our very neat little response involves revisiting such experiences and then doing an embodied activity that basically says: "That's gone." There is surprising power of an adult going back to that experience, literally thrusting it away, and articulating her feelings, such as: "No! I no longer believe what I was told." It's also important to keep that reality in mind when we create PLA courses. We need to be constantly aware of the need – as [noted American adult educator] Larry Daloiz says – to "catch them doing something right." The more we can create the scaffolds and the structures that support learners toward "you *can* do this," and "look at all you've *done*," the better we can help them overcome the "learning injuries" that you mentioned, Nan – injuries that tend to activate their anxious brains.

**A.M.:** I'm reminded of the exercise you describe about asking students to count the people in the room. You get to have a discussion about these internalized voices who are *not* really there, but are very much present. It's powerful.

**C.M.:** Students also get to *disinvite* them – to essentially kick them out of the room. It's under the umbrella of building awareness. The more that learners can know about themselves as learners – whether it's in a PLA course or any discipline-based study – the more they are able to exercise some self-agency. And they're social learners, so when they hear from somebody else about having anxieties, or "This is the script I grew up with," there is a bonding that builds trust. We don't spend a lot of time in the negative appraisal mode. We *do* say, "Let's put it all on the table." It's naming it, claiming it, and then you have a choice: Are you going to let them, whoever they are, continue to be that voice inside you, or are you going to drown it out, mute it – just knock it out?

**K.T.:** It also turns out to be really empowering. Students look around the room and realize they're not alone. Grown men weep, and I mean that literally. Lots of people are misty-eyed when they've done this activity. Talk about embodied learning!

**A.M.:** For me, this is linked to another idea from the book about this anxious/curious brain idea. We get so excited that adults come to us with so much "experience"; that's what we say differentiates the adult from other younger learners. What an advantage! And yet, as we've been discussing, some of the qualities of those experiences may have been massively debilitating and thus make their learning that much more difficult. It's somewhat counterintuitive: These adult students are coming with all this stuff, but some of that stuff could contribute to a deeply felt sense that they are stupid. This is a huge impediment to learning.

**C.M.:** Some students come hanging their heads in almost shame, and others come with bravado – either one is challenging for the instructor. How do you help each person get in touch with the real learner in there, their potential? That's the big question.

**K.T.:** The overcompensators are the ones who lean back and fold their arms across their chests. Their basic response is either, "I already know that," or "That's not how we do it in my shop." That's the anxious brain's desire to hold on to what is already known because that's comfortable, that's safe; that's where anxiety might be tamped down. In effect, the brain says to itself, "I don't have to be afraid of what is familiar. I'm going to try to stay with knowledge that I *do* have, that I already depend on."

**N.T.:** It does make sense: We've interpreted the world using our learned mental maps; they've worked for us, and when we challenge what's already worked for us, we have to break down to rebuild, and that's not easy. This is connected to a quote from your book: "Adults have more, and more varied, raw material from

which to extract, interpret, and ascribe meaning ... [and, on the other hand] [w]hat we already know, or believe, affects how we interpret new experiences – in other words, what we are prepared to learn”(p. 41). We have all this experience, but that experience shades exactly how we come into a new situation; but then in the new situation, we have to reinterpret whether this is the same thing that we've already experienced or whether it is different. You know there is this dichotomy, or at least there are tensions going on inside ourselves. And, at the same time, we're often asking students to describe their experiences – their learning – using a language, an academic vocabulary, which could be quite alien.

**C.M.:** I think we underestimate how taxing it is just to articulate what we know because we have huge amounts of experience but it isn't cataloged and ordered for easy retrieval. It's there, but a lot of it is *tacit*; we're not fully aware of what we know and how we know it. As facilitators, we need to appreciate the challenge of what we're asking people to do. We can't just say: "Go excavate," "Go mine;" and "Interpret." We may easily recognize the frameworks, the competence, the probable outcome, but they are just now learning how to make these connections. As you said, Nan, much of this, especially at the beginning, is a foreign language and each one of those activities – "extract, interpret, ascribe meaning" is *huge*, it's really taxing, for the already anxious brain! "Don't worry," we may say to the adult learner, "just reflect!" And they're frozen in disbelief, "Oh, sure! And what does *that* mean?"

**A.M.:** As I am listening to our discussion, I just keep thinking about why a student would choose to take a standardized exam. Put aside the problems of our whipping out the word "reflection," as if everyone knew what we are asking for. If instead somebody says: "You can study this booklet, and when you are ready, you can take this multiple choice exam. And if you do well enough, you can earn college credit." For some, this has to be a relief! It obviously takes a certain level of accomplishment to be able to do this, but this kind of assessment is not about reflection on prior learning we don't yet know we have. It's not about asking difficult questions about what it means to know something. It's also true that for some of our students, taking such a test could be the *most* intimidating thing – "That's why I was always bad at school." But for others, it's exactly the kind of regurgitation-method that they mastered long ago.

**K.T.:** In our program at St. Mary's College, we require that students take the PLA course and submit a written portfolio even if they *don't* need the credits. It is also the first course because we really believe in what it does and how it helps students understand themselves as learners, and how it helps them own their process. One of the things most adults arrive with is an understanding of how to "play school" the usual way because they've done it for so many years. What we're saying is: "OK, we know you're good at this, and that you wouldn't be here if you hadn't mastered this way of learning, but we're going to do it differently." And we believe making that shift is a basis for transformative learning and for our students to become conscious, self-aware constructors of knowledge. It's a crucial developmental step that the PLA process is part of.

**N.T.:** The call I had right before this one was with an institution that has been thinking about starting PLA in their institution. They have a very strong volunteerism, service learning and internship component in their college. Some of their students will have done volunteer work before coming to the school and many will include volunteer work when they are students. We got talking about what prior learning *isn't*. They mentioned that having the PLA option would help students get through faster. I said that it's not a check-off box process where you are going to say: "OK, I've got to get this done and so I can get through sooner." You might as well just create an exam if that is your whole purpose. But if you really look at the development that takes place for a student as they're going through the self-reflection and the self-assessment process, and if you really ask what makes a good self-regulated learner, I think we have to recognize that actually *all* of our knowledge is prior learning. It's only in the moment that we're having new, emerging learning, and then it almost immediately converges with our prior learning, so it's always prior. I think our challenge is to really think about the ways in which we can help students think through how they do that self-reflection, how they do a self-assessment, and how those processes help integrate their current experiences with their prior experiences to really broaden how they use their brain. Could you talk about that integration of the prior with the current – how to bring those together?

**C.M.:** It's like examining your memories; every time you go back and examine your memories, you give them a slightly different interpretation. It's not like the brain stores fixed memories that are always there. We

may not realize it, but we remember things differently and emphasize one thing over another at different times. What feels like “a” memory is always a *reconstruction* based on all of your subsequent experiences – even those that have no direct connection. Just as with Kathleen’s program, in our program at the School for New Learning, we also introduce the notion of learning through experience at the very beginning. Later, students have the choice as to whether they’re going to actually go on to develop documentation and have their prior learning assessed. The point is that the brain needs ongoing reflective practice; what John Dewey talked about as “continuity.” I wonder about the adult programs where in quick succession students do a portfolio up front, submit it, get their credit hours, then wrap it up, put the bow on it and they’re done. Such a front-loaded approach may be doing a disservice to the learning process and to the developmental aspect of prior learning assessment. Going through the PLA process is a very powerful way of going about the *process of learning*. Practicing the skills of examining and interpreting experience and putting it in some kind of framework – in other words, doing PLA in a developmental, progressive way – should go on throughout our students’ entire educational careers and their work lives. Our whole lives, not just at the front end of our programs.

**A.M.:** I think this directly touches on another point in your book that seems really important and that also directly speaks to a major theme of this issue of *PLA IO*. We can wax eloquent about the value of some astonishing process of reflection and transformation, but what are the kinds of supports that students, that all of us, need in order to make that happen?

**C.M.:** This relates to the importance of creating a safe space. Many students don’t feel that they’ve had a place either with their adviser or their teacher or even with other students where they have felt OK about being self-revealing and taking some risks – a place where they won’t be harmed. But support means different things to different people. There’s no list of 10 points on how to provide “support,” and it’s the same thing with “challenge.” People experience those things differently, and we have to get to know them and keep trying things out with them. Even when a student initially says to me: “I don’t need support, I just want to have an adviser who is going to give it to me straight and give me hard negative feedback,” I think, “Really? That works for you?” and then I work to help each person begin to identify for him or herself what is support and what is challenge. They’re not mutually exclusive – people can need more or less of either one at the same time, so we’re constantly balancing. Generally, as people get more familiar with the educational structure, they can take on more challenge. Knowing how important support is for anxious-brained adults, Kathleen and I both used to err on the side of *support, support, support!* But then, when it comes time to assess someone’s work and I’m required to be in that evaluative mode, they may have been taken aback: “Who is *this* person?” I had to learn to regulate and balance my own impulses.

Going back to the question of how we communicate – we often speak with students glowingly about reflection and self-assessment and imagine that this is inherently supportive and encouraging. But if, for example, I ask them what reflection means, their eyes often glaze over. “I don’t reflect. I’m not a reflective person. That reflection stuff belongs to you academics.” However, if I ask: “What do you call it when you’re at work and something happens and you need to change course or you wonder what’s going on?” When you put it that way, students have all sorts of familiar terms for it. I can use that to connect with what they already know – which calms that “not-knowing” anxiety-rejection right down. “OK; let’s call *that* ‘reflection,’ then.” That’s more effectively supportive.

**K.T.:** Plus, as a whole, we are an *unreflective* society. If we talk about reflection, there’s a whole huge population of people for whom that’s just navel-gazing. There’s also something about the unfamiliarity that makes it inherently suspect. So that’s also part of the context in which we adult educators are working. We have to be aware of that.

**N.T.:** I’d like to return to the question of self-assessment and what it means and how it’s connected to this discussion of support and reflection.

**K.T.:** The actual meaning of the word, “assess,” comes from the Latin, “to sit” – so “self-assess,” in effect, means to sit beside yourself. This is crucial because we are asking someone to occupy two universes at the same time. One universe is where you are, and the other is a place from which you can observe where you are, which means there’s a two-ness to it. Thus, to self-assess, I must be both where I am and at a distance that

enables me to observe that other place, not merely inhabit it. That also means that I can perceive myself perceiving. In that way, I may become aware of what is usually hidden – that what I usually experience merely as “reality” is actually a *construction*. That is an incredible capacity and discovery: I am not just who I am, but there is also something – that paradoxically is also me – that it is beyond who I am that I can aspire to. That to me is the developmental process and PLA absolutely feeds into it.

**N.T.:** I've been saying recently that to me, self-assessment is probably the most valuable ability that we can help our students gain because they if they have good self-assessment capabilities, they can also learn all of these other things. In self-assessment, you're actually engaging the learning process. And the brain really is designed to self-assess because at the molecular and chemical levels, what's happening is that as we are stimulating different neuron paths, we're either reinforcing something that already exists or we've got to adjust those neuron paths to take in this new information. However, while there's always this self-assessment going on in the brain, our educational system has taught us to be “other-regulated” and to let others do the assessment for us. In our educational system, we've stripped away the responsibility of the individual to self-assess, and we've really geared people *to be assessed*. We put more value on somebody else's judgment than on the individual's judgment when, in fact, the individual needs to be able to more strongly develop self-assessment capacities. When we think about the PLA process in these terms, we are really empowering the individual to do that self-assessment, but even in the PLA process we take away the end result, so something is taken away again. As we've been saying, we need to spend more time thinking about the interconnections between way the brain learns, PLA, self-assessment and how we understand and deliver education today.

**C.M.:** I agree with you 100 percent. It saddens me to see how many programs that could have a greater emphasis on self-assessment have moved away from it. And why? Students don't like it; it seems repetitive; instructors don't really know how to ask the right probing questions. And then, who does anything with it after that? My sense has always been that such self-assessments have been used as developmental markers for the student, or for the mentor, or for anyone who is following that student along for conversation and for awareness-building. In terms of brain basics, we're talking now about the “survivalist” strategies of the brain. We want to be efficient, and one way to do that is to quickly fill-in missing pieces, to tell stories. I think that is what PLA allows us to do in the most constructive of ways: We fill-in some of these missing pieces. We're not necessarily fully conscious of them from the start, but the process allows us to tell our stories in ways that are impactful for us.

You may remember Tim Lehmann and his work with the National Council on Adult Learning (NCAL) housed at Empire State. Years ago, I was one of the “fellows,” and my project was on self-assessment. I followed cohorts of students over time and I compared cohorts, and I also looked at people as they were graduating. Almost everyone said they found self-assessment valuable and worthwhile – a skill, an attitude, a way of being that they could take away with them. In addition, when they were engaged in authentic self-assessment, they also reported that they were reaching out and asking for more feedback. What surprised me was that in the process of asking for feedback, students' interpersonal skills improved. I never would have thought those two things were connected.

**A.M.:** Thus far in this conversation, we've been talking about the brain, but one of the surprising and interesting aspects of the book for me is the way in which it's really an argument about the integration of the mind and the body. It's not about the isolation of the mind or the brain, but about body-based metaphors and things having to do with movements and bodies – perhaps the “embodied learning that you referred to at the beginning of our conversation. I wonder what significance that has, especially given that fact that so much of our thinking is still in this kind of Cartesian universe of separation. You're making an argument that such a model is just not quite right.

**K.T.:** It's not that it's “not quite right,” it's wrong!

**C.M.:** I think our way of framing this now is that it's *not* even an integration of the body and the mind; they are just intertwined. It's what we describe as the “body-brain.” And while the brain is usually pictured sitting above the neck, the reality is that every part of our body is making a contribution to all the functions of the brain that we usually call the “mind.”

**K.T.:** There's a fascinating interview in *The New Yorker* with the Scottish philosopher Andy Clark (MacFarquhar, 2018). He's the guy who wrote *Supersizing the Mind* (Oxford University Press, 2008). When we came across his work, Clark was known primarily as a cognitive scientist who was interested in artificial intelligence, and even though that was his premise, he said things that from our point of view were so quotable that we included several of his statements as epigraphs in our book. For example, "The biological mind is, first and foremost, an organ for controlling the biological body. ... Minds are *not* disembodied logical reasoning devices" (Clark, 1997, p. 1). In this *New Yorker* interview (MacFarquhar, 2018), he owned up to the fact that he started out thinking that artificial intelligence will eventually be able to create brains or supplant brains; and he now says, more or less in language that we would deeply approve of, you can't do it without a body.

**C.M.:** In effect, without a body, there is no functional brain.

**K.T.:** Right. Here's another epigraph from Clark that we included: "The source of cognition is not just the naked brain, but the brain in concert with the sensing, acting body ... [as it] intervenes with the environment" (Taylor & Marienau, 2016, p. 33). And that is what we cannot now lose sight of, but which Descartes didn't recognize. Our *awareness of what we are thinking* is a very small part of the *process of knowing and learning*. It is the *end* of what we call "the train of meaning." The engine of learning is experience; the middle part of the train, so to speak, is the long and complex process of association and categorization, which is analogical and metaphorical. Whenever we have an experience, no matter what it is, the brain has to connect it to prior experiences that have left their imprint throughout the body. All our prior body states are registered in our neural networks. When any new experience comes up, the first thing the brain asks itself is: "How is this like what I already know?" And after it goes through an invisible process of making that discovery through association, and only in that last part of the process, can we articulate a thought, or become aware of a feeling. The problem is that Descartes didn't know that, so for him, being a deeply philosophical and intellectual person, the part he focused on was the part he could recognize. He had no way of knowing it was the *caboose* of the train! Because of people like Antonio Damasio and Mary Helen Immordino-Yang – and many others we describe in the book – we now know that learning is embodied. But we remain under the shadow of Descartes who wrote more than 400 years ago! If you ask well-meaning educators today about a thought, they will still immediately go to "mind"!

**A.M.:** What's really interesting to me is that at the same time that the two of you are urging us to be aware of the embeddedness of our lives, you're also quite optimistic about the possibilities of transformation. Why are you so optimistic that this process can actually happen when so much of the argument of the book shows it's not only your mind, it's your whole body; it's your being; it's as if everything is conspiring *not* to change. Why are you so sure about people being willing to reflect and question and to be able to explain why?

**C.M.:** Well it's not that we're naive. I think it's because we've worked with hundreds of students; we see it happening. All we're trying to say to educators is: "Would you *please* appreciate how taxing and how strange what we're asking student to do, and don't be cavalier about it. Be appreciative, be patient, offer respect, help people practice over and over again, and provide the scaffolding students need."

And there is one more important point that we take up in the last chapter of the book and that's about enhancing peoples' capacities to be what we describe as more "caring and courageous citizens" (p. 288). This is what the world needs. It needs places where people can develop their capacities for complexities and commitments and all of the skills that will help them truly learn from experience, and be able to make choices about how they want to be effective. People are *absolutely* capable of doing that. Education has just too often gotten in the way. I remember my daughter in the fourth grade was crying and saying to me: "I just hate school. I stopped having fun in third grade." That's what we do to them as children go through the traditional system: We just take the curiosity out of them; we take the risk-taking out of them. But it's there for adult learners; we just have to help rekindle it.

**K.T.:** In the book, we did try to create a flow. We're not sure if it was always obvious, but, indeed, we have what you might call these bookends around the several chapters in the middle that are very practitioner-focused. The first bookend is something like Brain 101: It sets the groundwork for understanding what the brain is doing as it learns. The other bookend becomes more of a text for higher-level learning and includes

most of the theory. We did that so people for whom that was not an area of interest would not be interrupted by tons of citations as they read. But when we got to the very last chapter – the chapter that Catherine just described – we wanted to write about our goals, our passions, our intentions. That’s where we address what we think about what the brain is for! What people usually accept as a given is that it’s for learning content. But that’s *not* what we find meaningful. Meaningful learning is about what John Heron [British researcher known for his “cooperative inquiry” method] wonderfully calls “human flourishing,” and that includes not just people but other members of the biosphere. That learning supports development of one’s capacities to authorize knowledge and to recognize that knowledge is not something that comes *to* us. It’s something we *construct*, and more importantly, it affects what we *do*. It makes the difference in what our lives contain and in the quality of our communities. That’s what we feel our book is ultimately about. We describe it as movement “toward complexity and commitment.” That’s why I think Catherine and I are optimistic, although sometimes these days, that optimism lags. If we didn’t believe in this, then what’s the point? Either we think that we can learn our way out of the morass we’re all in or else we might as well just go toes up and call it a day.

**A.M.:** Which we hope that none of us will choose to do. It’s the “journey” that we are all on. The T.S. Eliot quote that closes your book seems just right: “We shall not cease from exploration / And the end of all our exploring / Will be to arrive where we started / And know the place for the first time” (Eliot as cited in Taylor and Marienau, 2016, p. 314).

**N.T.:** Thank you both very, very much.

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