Transformative Learning: An Epistemological Study of
Kalamazoo College Student Learning Outcomes

By Kiran Cunningham & Robert Grossman
Kalamazoo College

As higher education shifts the focus from teaching to learning and assessment takes hold as a means of keeping educators accountable for achieving student learning outcomes, educators across the board are paying more attention to the developmental processes of student learning. Two separate though related conversations are occurring in the literature on this topic, one informed by the concept of transformative learning, and another informed by the processes of epistemological development. This paper seeks to bring these two conversations together in an exploration of the conditions under which experiential learning leads to transformative learning.

According to Mezirow (1997), transformative learning involves a change in one's frame of reference. He explains that frames of reference are composed of two dimensions: habits of mind and point of view. "Habits of mind," he says, "are broad, abstract, orienting, habitual ways of thinking, feeling, and acting influenced by assumptions that constitute a set of codes….Habits of mind become articulated in a specific point of view – the constellation of belief, value judgment, attitude, and feeling that shapes a particular interpretation" (p.5). Fostering transformative learning, then, means teaching with the goal of not only fostering change in students' points of view but in their habits of mind as well. Most of us who are involved in experiential learning would probably say that transformative learning is our goal. But, how often, and under what circumstances, does it really occur?

Kiely (2005), drawing on the work of Mezirow, lays out a useful, albeit complex, model of transformative learning. He begins with Mezirow's finding that transformative learning is typically initiated by a disorienting dilemma: "a critical incident or event that acts as a trigger that can, *under certain conditions* (i.e. opportunities for reflection and dialogue, openness to change, etc.), lead people to engage in a transformative learning process whereby previously taken-for-granted assumptions, values, beliefs, and lifestyle habits are assessed and, in some cases, radically transformed" (p.7). Kiely adds the concept of dissonance to Mezirow's concept of disorienting dilemmas. Disorienting dilemmas create dissonance when what students are seeing, hearing, and feeling is unfamiliar and incongruent with their present frame of reference. In his research with several cohorts of students who accompanied him on service-learning trips to Nicaragua, Kiely found that distinguishing between low-intensity and high-intensity dissonance was important for identifying situations that led to transformative change. Whereas low-intensity dissonance results in adaptation but not in transformative learning, it is high-intensity dissonance that under the right conditions leads to transformative learning.

When encountering high-intensity dissonance, according to Kiely, one's existing knowledge is not sufficient to make sense of the contradictions one is experiencing. As he says, "High-intensity dissonance often causes powerful emotions and confusions and leads [students] to reexamine their existing knowledge and assumptions regarding the causes and solutions to ambiguous and ill-structured problems such as extreme forms of persistent poverty" (p.11). Kiely's research suggests that whereas effects of low-intensity dissonance fade and/or are resolved, effects of high-intensity dissonance do not go away; they "create permanent markers in students' frame of reference" (p.11). Kiely's findings are particularly important to our own research in that they point to the potential of experiential learning for creating the highly dissonant conditions under which transformative learning occurs.

Featherston and Kelly's (2007) study of the impact of critical pedagogy on transformative learning in a conflict resolution course also adds important nuances to our understanding of the process of transformative learning and the conditions under which it occurs. Their work, like Kiely's, demonstrates the critical roles played by intense dissonance. Moreover, they draw attention to the emotional and cognitive "messiness" associated with the process of transformative learning. They add an important element to our understanding of this process, however, with their finding that students must be willing to engage in this mess. When students meet the dissonance with resistance (either benign or actively negative), they are blocked from moving into and through the transformative process.

Regarding the transformative process itself, Featherston and Kelly draw attention to the importance of paying attention to [t]ransformations as well as [T]ransformation. As they say,

> what we found in our research, while we were searching for [T]ransformative experiences, were [t]ransformations. Students experiences were partial, incomplete, messy, complex, sometimes incongruent encounters with various aspects of the course/wider social space. Rather than wholesale reorganization of fundamental assumption or overthrow of internalized hegemonies, we found our students described their experiences as shifts in some attitudes, fluidity or greater openness in some assumptions and perspectives, greater engagement and empowerment, greater/more aware skill use, and greater awareness (of self/other/discourse). And, more importantly, these were experienced over time, incrementally, and at different levels of intensity (p281).

These findings caution us against assuming that [T]ransformation is the be-all, end-all of learning; rather, it is one leap that comes towards the end of series of smaller, but no less significant, leaps in learning.

Another variable affecting change in undergraduate learning is epistemological development. This comes from the research of William Perry (1970) and his followers (Belenky, Clinchy, Goldberg, & Tarule, 1986; King, & Kitchener, 1994; Baxter Magolda, 1992; Kegan, 1994). They each found a series of developmental positions in students'

beliefs about knowledge. Students started in an absolutist or dualist position where they believed all valid questions had specific, correct answers and they relied on authority for these answers. Kegan called this the position of the socialized self where meaning was constructed and shaped by the values and expectations of others in one's social environment.

Students moved to a multiplistic or more independent (Baxter Magolda, 1992) position where they recognized some truth as uncertain and therefore concluded that one opinion was as good as any other. In this position students recognized little need to support or defend their opinions with evidence. Because of this King and Kitchener (1994) labeled this as the "quasi-reflective" position. This was also seen as the beginning of self-authorship (Kegan, 1994) which was not fully in effect until the next position, contextual relativism. In what Kegan called "the fourth order of consciousness" the student discovered that there are right and wrong answers depending on the context and that judgments must be grounded in relevant evidence. Here students can for the first time reflect on their experience and become aware of their assumptions and biases. As Kegan notes:

> Her discovery is not just that she herself has different ideas, but that she has been uncritically, unawarely identified with external sources of ideas (her husband, her church, and her culture). To be uncritically, unawarely identified with these external sources is to be *unable* to question, or weigh the validity of these ideas; it is to take them as The Truth…her previous stance *toward* these beliefs and values, a stance of being uncritically made up by them…it is not the same self now listening to its own drummer rather than stepping to the beat of another. This is a *wholly different way of constituting what the self is, how it works, what it is most about.* (p. 110)(author's emphasis)

Kegan clearly focused on how individuals construct meaning and on the relationship between the self and the social environment.

According to these scholars, students generally begin their college careers in the socialized-self stage, and ideally move into the stage of self authorship over the course of their college experience (Baxter Magolda, 2001; Pizzolato, 2007). In line with King and Kitchener (1994) and Baxter Magolda (2001), Kegan proposed that few college students were in this fourth stage. He reported, "our research suggests that almost no one this age has fully constructed the fourth order of consciousness" (p. 292).

In an interesting article Diane Erickson (2007) linked the transformative learning process to epistemological development stages focused primarily on the socialized self and self-authored self. She found that the reflecting on assumptions and biases aspects of transformative learning required that student be fully in the contextual relative or self-authorship position of epistemological development. We take Erickson's synthesis of Mezirow's phases of meaning with Kegan's stages of meaning-making a step further and

develop of continuum of transformative learning to explore the conditions under which movement along this continuum occurs.

Research design

Our research takes a grounded theory approach with our instruments, analysis and conclusions developed through an iterative, deductive and inductive process. Because we were interested in understanding the conditions under which transformative learning occurs, we first needed to develop a very clear understanding of the process of transformative learning itself. We began deductively. Building upon Erickson's (2007) integration of Kegan's (1994) meaning-making stages with Mezirow's (1997) stages of transformative learning, and integrating research findings from Kiely (2005), and Featherston & Kelly's (2007) notion of [t]ransformations and [T]ransformation , we created a list of what we understood to be key elements of the process of transformative learning,

This list became a continuum with six stages and indicators for each stage through a process of inductively analyzing two sets of data containing student reflections on experiential learning: a subset of the eighty interviews that Cunningham and her Qualitative Research Methods class conducted with Kalamazoo College seniors in the spring of 2007, and a set of structured personal reflections from Cunningham's Culture, Religion, and Nationality class. In the former, we focused on students' reflections on their service-learning and study abroad experiences; in the latter, we focused on students' reflections on their ethnographic fieldwork with immigrant faith communities.   With the goal of creating a continuum of levels of transformative learning with clear indicators for each level, our analysis of both sets of data focused on the ways that changes in learning were experienced and expressed. This process ultimately led to a transformative learning continuum with six levels:

1. Knowledge gains
2. Attitude changes
3. Changes in perspective,
4. Deepening self understanding,
5. Deepening structural understanding,
6. Transformative change.

We used this continuum to construct an interview guide for a second round of interviews designed specifically to address our main research question: under what conditions does experiential learning lead to transformative learning. Two semi-structured interview guides were developed, one focused on service-learning and one focused on study abroad, and they covered such topics as reflection, experiences of dissonance, resolution of dissonance, on-site and peer relationships, connections with coursework, etc.. The interviews themselves were conducted by trained student interviewers and were typically 45-60 minutes long. The interviewees were all seniors in their last term before graduation. A total of 40 interviews were conducted, 18 focused on service-learning interviews and 22 focused on study abroad. All interviews were

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recorded and transcribed verbatim. They were then coded using the Atlas.ti software program. To establish inter-coder reliability, the three researchers coded several interviews together so that we had the same understanding of the codes. After then dividing up the interviews and coding individually, we came back together to compare our individual coding, which led to another round of individual coding.

Our analysis of these interviews has led to new layers of understanding in two areas: 1) new understandings about the process of transformative learning and the nature of the conditions under which experiential learning leads to transformative learning , and 2) a new layer of understanding about self-authorship [sometimes you hyphenate this and sometimes you don't. In addition, our findings have important implications for how experiential learning opportunities should be designed to maximize the potential for transformative learning.

Conditions under which experiential learning leads to transformative learning

While there were many examples of knowledge gains, attitude changes and changes in perspectives throughout the interviews, our focus in this particular analysis is on the last three levels of the continuum: deepening self understanding, deepening structural understanding, and transformative change, the levels associated with self-authorship and transformative learning.

Over the course of the data analysis, certain codes stood out as particularly salient indicators of a given level of transformative learning. The quotes associated with these key codes demonstrated essential steps along the path toward a shift in frame of reference and habit of mind characteristic of transformative change. Table 1 lists these key indicators, the level with which they are associated, and the abbreviation we will use to refer to them.

Table 1: Key indicators for transformative learning levels

Level	Indicator(s)	Abbreviation
Deepening Self Understanding	Critical assessment of assumptions about self	SL-2
Deepening Structural Understanding	Structural understanding of the experience	ST-2
Transformative Change	Connecting understandings of the experience, self, and broader structures	T-7

Twenty-six of the 38 interviews contained at least one of these indicators. Table 2 shows the frequency of all three indicators among these 26 interviews. An x indicates evidence of the particular key indicator in the interview. Evidence of deepening self understanding was present in all but two of the interviews, and evidence of deepening structural understanding was present in all but six. There were only eight interviews (cases 1-8) with evidence of transformative change, as indicated by T7. Interestingly, in all eight of the T7 interviews, evidence of SL2 and ST2 were also present. We explore

these indicators and the patterns between them in more depth through a closer look at the quotes associated with these indicators.

Table 2: Frequency of deepening self understanding, deepening structural understanding, and transformative change

Case	Self Understanding (SL2)	Structural Understanding (ST2)	Transformative Change (T7)
1	x	x	x
2	x	x	x
3	x	x	x
4	x	x	x
5	x	x	x
6	x	x	x
7	x	x	x
8	x	x	x
9	x	x	
10	x	x	
11	x	x	
12	x	x	
13	x	x	
14	x	x	
15	x	x	
16	x	x	
17	x	x	
18		x	
19		x	
20	x		
21	x		
22	x		
23	x		
24	x		
25	x		
26	x		

Deepening Self Understanding

Questioning or critically assessing one's assumptions is an important step along the way toward transformative change. In order to change one's frame of reference, one must not only be aware that one has a frame of reference, but also have a sense that this frame of reference is constructed. Pierre Bourdieu's (1990) concept of the *habitus* is useful here (see also Featherstone and Kelly, 2007). Transformative change involves the

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process of understanding that one has a *habitus*; understanding that one's *habitus* propels one's decisions, actions, and dispositions; and understanding the structural factors associated with the nature of one's *habitus*. Questioning one's assumptions is the first step along this process. Through a questioning of one's assumptions, one comes to understand that one has a frame of reference and that that frame of reference, or *habitus*, is not necessarily the same as others.

Twenty-four of the interviews contained evidence of students critically assessing their assumptions. One example of critically assessing assumptions about self comes from case #10, and is connected to a student's experience of studying abroad.

> I saw our culture, not necessarily as right but just as this is the way things are – this is what life is and even though there are lots of other cultures out there, they're more like deviations from ours. But as soon as you go on study abroad, you realize that their culture isn't a deviation from ours, and ours isn't from theirs, but they're just different ways of living in the world. That's something that I didn't get from looking at books or learning about cultures but living in the culture.

This student describes how his assumptions about cultural differences that he held before study abroad – that other cultures "are more like deviations from ours" – could not hold when actually living in another culture. His experience abroad forced him to not only critically reflect on his assumptions, but also shift toward contextual relativism.

Another example of critically assessing one's assumptions about self comes from case #26. As part of a service-learning project, this individual was working in an after-school program in a distressed neighborhood in Kalamazoo.

> It was kind of disheartening to talk to some of the kids about their homes. [The program] is set up in government-subsidized housing so a lot of these kids don't have very much. So I asked someone to draw a picture of their house and their family, I didn't even think about it but they said, "I don't have a house, it burned down," or "It's only me and my mom." It kind of put me in my place. I didn't think to modify activities or what we were doing because I didn't know that was their situation. I guess it just made me think before I gave them a task and gave suggestions as to write about, I thought, "Well, maybe that's not their situation," and tried to modify tasks so that they were more universal. But it's hard because that's not the background I came from.

The child's response to the exercise produced an experience of dissonance for this student. It never occurred to her that the exercise would be anything but simple and straightforward; as she said, "I didn't even think about it." The child's jarring response not only shed light on her assumptions and biases, but helped her to see the ways they were operating in her in interactions with the children with whom she was working. This, in turn, led her to continue to question the degree to which her assumptions were biasing the exercises she was creating. In other words, this dissonant experience triggered

the student to realize that, to use Bourdieu's (1990) terms, she had a *habitus*, that it was not the same *habitus* that the child was operating out of, and that her *habitus* was propelling her to create an exercise that did not necessarily make sense in the context of another *habitus*. In this sense, she was moving into self-authorship.

Deepening structural understanding

Understanding that one has a frame of reference and questioning the assumptions that are embedded within that frame of reference is a key step along the path toward transformative learning. Coming to see that frame of reference as constructed, another key step along the transformative learning path, requires an ability to contextualize one's experience within broader structural frameworks. Nineteen of the 38 interviews contained evidence of this level of understanding. Indeed, several different kinds of structural frameworks were apparent in the interviews, including structures of culture and gender, as well as psychological and socio-economic structures. The four quotes used in this section and the next illustrate each of these various kinds of structural understanding and the way they were used by students to make sense of the dissonant experiences they were having.

The first quote is illustrative of using an understanding of socioeconomic structures to make sense of one's experience. In this case (#15), the student was doing a service-learning project in a public health agency in Kalamazoo, and was alarmed by the inequities she was seeing in terms of access to health care.

> I worked with patients who didn't have good insurance coverage. So, there were a lot of times where we'd try to schedule a patient, but the physician would only take maybe four Medicaid patients a month. So, I have 25 patients who can only see this one specialist because it's all the insurance will cover, but the specialist will only take four patients without good insurance because they can't make money if there's no insurance to pay for the coverage. So, a lot of times I had to tell these people, "Well, I'm sorry. I know you need this life saving procedure, but he doesn't feel like taking you today. So, you can't go." Or there were less dramatic things, like a patient who needs to see some physician, and they have no transportation. We can't go pick up every patient and take them on time. And, if they don't have transportation lined up then we can't make the appointment. There was so much crap that these patients had to go through just to see a specialist that people with good insurance would never have to go through.

This student uses a structural understanding of the health insurance industry to make sense of the inequity he sees and experiences at the agency. While this kind of structural understanding does not diminish his frustration, it gives him a framework for understanding the dynamics he witnesses.

The second example of structural understanding comes from an interview (#16) with a student who had studied in Kenya and was reflecting on the relationship she had with her host father. While she was in Kenya, she was very frustrated and disappointed

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with this relationship because it was not the father-daughter relationship she had hoped it would be. It was only after returning to the U.S. and continuing to process her disappointment with part of her study abroad experience that she came to a new understanding of the dynamics of the relationship.

> I have a close relationship with my [actual] father. My parents have been married for 33 years. So, I'm used to having a father, having a dad. So, I really think I depended on my host father to be a dad. But just reflecting on my experiences, I think that maybe there was a limit to how far he could really be as a stand-in father. And, the reason was I'm an American woman living in house. You know what I mean? I'd see him engage his daughters in certain ways and wonder why doesn't he engage me in those ways. And, I really think that maybe he was being guarded because I was an American woman living in his house. That's the only way I can really conceptualize it.

When this student stood back and contextualized the dynamics of the relationship in terms of structures of gender and dynamics between Kenyan men and American women, she was able to make sense of her host father's vigilance about maintaining a distance between them. This student goes a step further along the transformative learning path than the first student in that she connects structures of gender to the frame of reference, or *habitus*, propelling her host father's actions. As she said, "maybe there was a limit to how far he could really be as a stand-in father." What we do not see in either of these quotes, however, or in the interviews from which they were excerpted, is evidence of an understanding of the students' own frames of reference as constructed in the contexts of these same kinds of structures.

As Table 2 shows, almost half of the 38 interviews showed evidence of both structural understanding and self understanding. Many of the students interviewed critically assessed their assumptions and demonstrated a structural understanding of their experience. However, only a few were able to bring these two levels of understanding together. Indeed, our analysis of the interviews suggests that transformative learning requires the bringing of the experience itself into a dialogue with a deepening understanding of one's assumptions and a deepening understanding of the structures within which those assumptions are constructed and those experiences occur. In other words, only when all three of these things come together *in the same conversation* does [T]ransformation happen. We saw evidence of this level of understanding in only eight of the interviews.

One example of this level of connecting of the experience, oneself, and broader structures, in this case psychological structures, comes from case #5. This interview was with a student who has been involved in service-learning at a nearby elementary school.

> Teaching kids [has made me] really learn that labeling does have an effect. Like, with teachers, when kids get labeled as the bad kid who does this and they're sent to the office in a second. You don't want to get caught up in that, and I feel like sometimes I catch myself and I'm like, "Nope." I gotta remember. I don't want to

forget it, because I think it's really easy to get caught up and start labeling and put kids in these classifications and you just don't want to do that. You want to try and push them as far as they can go, and it's actually a lot of work to do that. But that's how it should be.

Here, this student is linking together an understanding of psychological structures (labeling) with his experience tutoring disadvantaged kids, and connecting both of those to his own *habitus*, which, if he's not vigilant, will propel him to label the kids and therefore create barriers to their ability to attain their potential. In Mezirow's (1997) language of transformative learning, he has identified ways that his frame of reference embodies problematic assumptions with deeper structural underpinnings and is actively working on changing a habit of mind. Moreover, he understands that changing habits of mind is difficult, but is worth doing.

The second example (case #8), an illustration of structures of culture, comes from an interview with a women who studied in Senegal.

Intercultural relationships are very stressful relationships to have. I think one of the biggest things that reiterated that to me was translating. The translation in my mind, just knowing that no matter what I wanted to say in English, and no matter how good my French was, there would never be a perfect translation for what I was trying to say. And, I think that happened culturally too. That no matter what action I did, or what intent I had, it could never be read in the same way by a Senegalese person as by an American person. Say, I mean, just something as simple as touching, like I mentioned before with the woman who sat right next to me on the bus, thigh to thigh, arm to arm. That felt very intimate to me, and to her that felt like, "I'm sitting next to a woman on the bus." And, so I think I just realized how deeply I hold cultural assumptions and cultural understandings. And, and how it's very difficult to get past that sometimes.

This student has come to a sophisticated understanding of structures of culture, or to use Kegan's (1994) language, meaning-making, and uses this to make sense of the difficulty of cross-cultural relationships and dynamics. Moreover, she connects this understanding to her own self, realizing "how deeply I hold cultural assumptions and cultural understandings."

Our analysis of these interview data reveals significant new insights into the processes of transformative learning and meaning-making. The literature on the stages of meaning making, particularly as they relate to college-age students, focuses primarily on self-authorship. Our dual focus on the stages of meaning-making and the process of transformative learning have pushed us beyond simple self-authorship. While [T]ransformative learning may not be attainable by all students, it is clearly attainable by some and we need to understand the kind of thinking that is necessary to push students toward it. Indeed, armed with this kind of understanding we may be able to help more students actually get there.

Our research suggests that while self-authorship, and the deepening self understanding associated with it, is a necessary precursor to [T]ransformative learning, it is not sufficient. Also required is an ability to place one's experience within a broader structural understanding of the world and social interaction. This kind of structural understanding seems to require self-authorship as a precursor, as one must understand that one has a *habitus* before one can understand that it is constructed. What those who focus specifically on self-authorship do not seem to acknowledge, however, is the significance of understanding the structural context within which the *habitus* is created and meaning is made. We are arguing that not only is it important to acknowledge this structural context, but gaining the capability of understanding the structures that underlie meaning-making helps push students in the direction of the transformative learning because it forces them to see that the *habitus* not only exists but is constructed and not given.

Implications for maximizing the transformative potential of experiential learning

The original impetus for this research was a desire to understand how experiential learning opportunities for students could be designed so that the potential for [T]ransformative learning could be maximized. Our findings about the process of moving along the continuum of transformative learning have significant implications for how we should structure the experiences themselves and the reflection associated with them. While it is tempting to focus on how we move students along the continuum of transformative learning in a single course or experiential learning opportunity, it is much more realistic to focus on how we move students along this continuum over their entire four year college experience. As we know from Kolb's (1984) experiential learning cycle, learning is a recursive process and should be envisioned as more of a spiral than a line. Moreover, in order for the learning spiral to work, opportunities for experiential learning need to be scattered throughout a student's college experience.

Layering our transformative learning continuum and Kegan's (1994) stages of meaning-making over this four-year learning spiral suggests that the reflection and processing associated with experiential learning needs to begin with a focus on deepening self understanding, then add a focus on deepening structural understanding, and finally bring the two together. Scholars who work on epistemological development would caution us at this point to remember that the kind of reflection one is able to do is constrained by one's meaning-making stage of development. While this may be true, we must not let our understanding of intellectual development prevent us from developing educational strategies to nudge them closer (or even into) the next stage. As the data presented here suggest, [T]ransformative change is possible among undergraduates. Moreover, these data suggest that by providing the theoretical and conceptual frameworks for a structural understanding of themselves, their experience, and the connection between the two, we can provide the kind of reflective scaffolding needed to push students further along the continuum of transformative learning than many scholars, particularly those focusing on self-authorship, have thought possible.

Perhaps we should understand the relationship between epistemological development and the process of transformative learning as dialectical, rather than the former constraining the latter. In the process of spiraling through the experiential learning cycle and obtaining the kind of deepening structural understanding necessary for transformative learning, students also come to understand the structures that underlie meaning-making generally, and their own meaning-making more specifically. Through this spiraling, dialectical process, they are not only nudged closer to [T]ransformative learning, but also beyond the self-authored self and closer to the self-transformed self.

Bibliography

Baxter Magolda, M. B. (2001). *Making their own way*. Sterling, Virginia: Stylus Publishing, LLC.

Baxter Magolda, M. B. (1992). *Knowing and reasoning in college: Gender-related patterns in students' intellectual development*. San Francisco: Jossey-Bass.

Belenky, M. F., Cinchy, B. M., Goldberger, N. R., and Tarule, J. M. (1986). *Women's ways of knowing: the development of self, voice, and mind*. New York: Basic Books.

Bourdieu, P. (1990). *The Logic of Practice*. Stanford: Stanford University Press.

Erickson, D. (2007). A developmental re-forming of the phases of meaning in transformational learning. *Adult Education Quarterly*, 58 (1), p. 61-80.

Fetherston, B. and R. Kelly (2007). Conflict resolution and transformative pedagogy: A grounded theory research project on learning in higher education. *Journal of Transformative Education*, 5 (3), p. 262-285.

Kegan, R. (1994). *In over our heads: the mental demands of modern life*. Cambridge, MA: Harvard University Press.

Kiely, R. (2005). A transformative learning model for service-learning: A longitudinal case study. *Michigan Journal of Community Service Learning, 12*, p. 5-22.

King, P. M. and Kitchener, K. S. (1994). *Developing reflective judgment*. San Francisco: Jossey-Bass.

Kolb, D. (1984*). Experiential learning as the science of learning and development.* Englewood Cliffs, NJ: Prentice Hall.

Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult and Continuing Education, 74*, p. 5-12.

Perry, W. P. (1968). *Forms of intellectual and ethical development in the college years: A scheme.* Austin, TX: Holt.

Pizzolato, J. E. (2007). Assessing Self-Authorship. *New Directions for Teaching and Learning,* 109, 31-42.