

Module 12 – Events a Learner Can Expect to Experience

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The value of education does not lie in acquired knowledge of facts and formulae, but rather in acquired higher thinking abilities.

Remember the Scarecrow who received his cherished brain from The Wizard of Oz? Suppose the Wizard offered to build a brain for you, custom-built to your specifications. What would you ask for? A “Brain-Specs Manual” might be useful!

Studies of adult learners through college and beyond furnish the information needed for such a manual. The studies reveal the characteristics of brains during varied stages of assembly as well as the sequence in which certain abilities develop, the time needed to develop them, and some side effects that occur. Because we build and stabilize synaptic connections through learning, each of us is our own Wizard.

Let’s enter the Wizard's shop and see what the “Specs Manual” can tell us.

1. In the early stages of assembly, a properly functioning brain displays beliefs that all problems have correct answers, and that authorities (teachers, elders, scholars) can furnish these answers. Listening carefully to authority constitutes education. The brain can remain at this functional level for life. That life can be happy and contented, so long as it remains satisfied with authority. If we want this, assembly can stop here.
2. With further assembly, the brain learns that authority is fallible. A side effect is discomfort. Brains in this stage tend to withdraw from authority and seek comfort in the company of peers. Without authority to serve as arbiter, arguments appear to be only opinions, and all appear equally valid. Ambiguity causes discomfort and is not appreciated. Becoming educated is mainly about learning factual content and skills. The brain must do such learning for a while before it can assemble further.
3. Brains at the third stage recognize that important challenges have *reasonable* and *unreasonable* solutions rather than single correct answers. Yet, it is not yet adept in resolving the argument that is most reasonable among competing arguments when all sound plausible. This stage brings feelings of insecurity, self-doubt and occasional anger. Desire exists on one hand to learn and on the other to escape from struggle. Struggle with ambiguous challenges for a time seems necessary before further assembly is possible. Most college students stop brain assembly at about this stage.
4. Change into stage four occurs after feeling “stuck” at stage three. The entry into this stage is abrupt and punctuated. The brain realizes that the key to determining

the best among competing arguments is reasoning that employs evidence. Education is now an opportunity to develop skills in such reasoning, and the brain realizes self as a very capable authority. This stage brings relief, renewed confidence and security.

5. The brain now appreciates ambiguity as a quality of the most interesting challenges. It enjoys discovering and using evidence. Brains at this stage recognize that reasonable answers often depend upon the settings and value systems in which the problems occur. Education is perceived as the opportunity to develop abilities to understand when evidence is incomplete and practice the research skills required to fill in the gaps. Associated feelings are focus and commitment.
6. Brain assembly in this uppermost stage usually occurs years after college and never before all prior stages have been achieved. These brains perceive how feelings and personal values influence their own decisions and actions. Acquisition of wisdom and emotional intelligence allow better access to others' expertise. With practice, one may even acquire through perception and empathy the capacity for vicariously experiencing another's feelings and thereby deeply understanding another through the other's felt experiences.

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The distinctive quality that separates those who do high level thinking from those who cannot is effective use of evidence. Evaluative thinking is not the only kind of thinking that has value, but ability to make evidence-based decisions is one of the most important skills to modern life. That is a benefit that can come by taking an informed approach when obtaining a college education.

Developing high-level thinking takes years and requires practice in making evidence-based decisions. We should expect to feel insecure, frustrated, doubt ourselves, and, at times, even want to quit. While discomfort accompanies this development, persistence *will* bring success. There are no known shortcuts to higher stages that don't require time spent in the lower ones. Unless we are very attuned to how we think, we will not recognize when we pass into a higher stage or even realize that we once thought in more restricted ways.

College is not the only place where we can develop such capabilities, but the inevitable mistakes made in this particular kind of learning are less costly when made there than when made in the high-stakes situations that typify careers and important relationships.

Reflective Exercises.

- 1. Find your current stage of development from the descriptions above. Then complete the following statement:**

The activities I most need to engage with in order to build my brain to reach the next stage of development are _____

- 2. You are frustrated with responding to a written take-home essay assignment and literally screaming “What does the professor WANT?” What developmental stage does this typify?**
- 3. A professor who teaches college juniors reads the responses for suggested improvements on her student ratings form. Five students wrote: “Please, just give us the facts.” What does this reveal?**
- 4. Read the statement below and try to diagnose the level of reasoning behind it.**

| STATEMENT | PROBABLE STAGE |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| “I saw the evidence, but it did not change my mind.” | |
| “I believe this because someone I trust told me so.” | |
| “I carefully considered the arguments, but I favor this one because it has the most support from the evidence.” | |
| “For a long time I really opposed this argument. Now, I realize just how compelling the evidence for it is. I realize that I opposed it largely because I did not want to believe it.” | |
| “I observed that people in California readily accepted the evidence, but there are reasons that Midwesterners will not be inclined to do so.” | |
| “Yes, there is evidence, but everyone has a right to their opinions. In order to respect others rights we must accept that all opinions are equally valid.” | |
| “There are good arguments on all sides, so I am going to just do what I feel is best.” | |

- 5. Gather some friends from a class and watch the Swedish movie, “The Girl With the Dragon Tattoo.” What levels of thinking do the characters Mikael Blomkvist & Lisbeth Salander exhibit?**
- 6. View the Prezi constructed by Dr Devan Barker at http://prezi.com/1cmm76suwcb1/perrys-stages-of-cognitive-development/?auth_key=ed6ade93f994a43d19f2573250df59c54b7868e8 Why might intellectual growth possibly be accompanied by feelings of grieving?**

References:

- Alverno College Faculty. (2000). *Self Assessment at Alverno College*. G. Loacker, (Ed.) Milwaukee, WI: Alverno College.
- Arum, R. and Roksa, J. (2011). *Academically Adrift: Limited Learning on College Campuses*. Chicago, IL: University of Chicago Press.
- Baxter Magolda, M.B. (1992). *Knowing and Reasoning in College: Gender-Related Patterns in Students' Intellectual Development*. San Francisco: Jossey-Bass.
- Baxter Magolda, M.B. (2001). *Making Their Own Way: Narratives for Transforming Higher Education to Promoting Self-Development*. Sterling, VA: Stylus.
- Baxter Magolda, M.B., E. G. Creamer, and P. S. Meszaros (2010). *Development and Assessment of Self-Authorship: Exploring the Concept Across Cultures*. Sterling, VA: Stylus.
- Belenky, M.F., B.M. Clinchy, N.R. Goldberger, and J.M. Tarule. (1986) *Women's Ways of Knowing: The Development of Self, Voice, and Mind*, New York: Basic Books. (reprinted in 1997).
- Biggs, J. B., and Collis, K. F. (1982). *Evaluating the Quality of Learning*: London, Academic Press.
- Carper, B. A. (1978). Fundamental patterns of knowing in nursing. *Advances in Nursing Science* 1 1 13–24.
- Felder, R.M., and R. Brent, (2004). The Intellectual Development of Science and Engineering Students: Teaching to Promote Growth. *Journal of Engineering Education*, 93 4 279–291.
- Flavell, J. H. (1976). Metacognitive aspects of problem solving. In L. B. Resnick (Ed.), *The nature of intelligence* (pp. 231–235). Hillsdale, NJ: Erlbaum.
- Goleman, D. (1995). *Emotional Intelligence*. New York: Bantam Books
- Goleman, D. (1998). *Working with Emotional Intelligence*. New York, Bantam Books.
- Hoare, C., ed. (2006). *Handbook of Adult Development and Learning*. Oxford: Oxford University Press.
- Journal of Adult Development (2004). Special volume of nine papers on the Perry legacy of cognitive development. *Journal of Adult Development* (11, 2) 59-161
Germantown NY: Periodicals Service Co.
- Kegan, R. (1982). *The Evolving Self: Problem and Process in Human Development*. Harvard University Press.
- King, P.M., and K.S. Kitchener (1994) *Developing Reflective Judgment: Understanding and Promoting Intellectual Growth and Critical Thinking in Adolescents and Adults*, San Francisco, Jossey-Bass.
- Krathwohl, D.R., Bloom, B.S. and Masia, B.B. (1964) *Taxonomy of Educational Objectives: The Affective Domain*. New York: McKay.
- Love, P.G., and V.L. Guthrie (1999) *Understanding and Applying Intellectual Development Theory*, New Directions for Student Services, No. 88, San Francisco: Jossey-Bass, 1999.
- Lynch, C. L. & Wolcott, S. K. (2001). Helping Your Students Develop Critical Thinking Skills. IDEA Paper No. 37. Manhattan, KS: IDEA Center. Available: http://www.idea.ksu.edu/papers/Idea_Paper_37.pdf
- Nuhfer, E. B (2008) The feeling of learning: Intellectual development and the affective domain: Educating in fractal patterns XXVI. *National Teaching and Learning*

- Forum*, 18 (1) 7-11.
- Nuhfer, E. B., and Pavelich, M., (2001) Levels of thinking and educational outcomes. National Teaching and Learning Forum, v. 11, n. 1, pp. 5-8.
- Paulsen, M.B., and C.T. Wells, (1998). Domain Differences in the epistemological beliefs of college students. *Research in Higher Education*, 39 4 365–384.
- Pavelich, M.J., and W.S. Moore (1996). Measuring the effect of experiential education using the Perry Model. *Journal of Engineering Education*, 85 4 287–292.
- Perry, W. G., Jr. (1999). *Forms of intellectual and Ethical Development in the College Years*. (Reprint of the original 1968 1st edition with introduction by L. Knefelkamp). San Francisco: Jossey-Bass.
- Schraw, G., and D. R. Robinson, eds. (2011). *Assessment of Higher Order Thinking Skills*. Charlotte, NC: Information Age Publishing.
- Wolcott, S. (2010). Professional attributes: Teaching the fine arts of being a professional accountant. Paper Presented at Accounting Educators' Symposium, Toronto, November 2010.
- Wolcott, S., and Lynch, C. (2011). Resource site accessed February 21, 2011, at <http://www.wolcottlynch.com/> contains many resources for development of high level thinking.

Notes: The six items in this chapter that describe stages and their sequence relate to the Perry model and King and Kitchener's Reflective Judgment (RJ) model as follows: Item 1 = Perry Stages 1 &2 and RJ 1&2; Item 2 = Perry 3 and RJ3, Item 3 = Perry 4 and RJ4; Item 4 = Perry 5 and RJ5; Item 5 = Perry 6 and RJ 6; Item 6 = Perry RJ 7 and Perry 7,8 &9. The RJ model dismissed the relationship between affective and cognitive development in the upper stages and thus has no equivalent for Perry stages 8 & 9.

The emotions that accompany the developmental stages derive from mapping the development of the affective domain as established by Krathwohl, Bloom, and Masia to Perry's model of intellectual development, and Barbara Carper's esthetic pattern of knowing, which is similar to "connected knowing" later described by Belenky and others.