

TRANSFORMATIVE LEARNING

Transformative Learning as a 4-Stage, Brain-based Process

Dr. Dan Glisczinski of the University of Minnesota - Duluth became excited about examining the literature — from Aristotle and Confucius to findings from neuroscience based on functional magnetic resonance imaging studies — to integrate and synthesize a conceptual model of Transformative Learning practice. His writing (2011, 2012) examines the nexus where he finds connections between ancient wisdom about self-revelation and the insights coming fast and furious from cognitive neuroscience (and which will only accelerate as we move into coming years of the [Brain Activity Map Project](#)).

(Dr. Glisczinski will be a keynoter at the 2014 Transformative Learning Conference.)

What happens in the brains of students when they have a Transformative Learning Experience (TLE)? Might knowing this enable us to better plan experiences and events likely to trigger transformative realizations?

Glisczinski thinks so:

Thanks to their exhaustive research, I have been able to develop a learning experiences questionnaire into four unifying experiences common among rational analyses of TLEs. The first is the sensory cortex-based trigger event. The second is temporal region-based reflective observation. The third is the prefrontal cortex's critical analysis—and rational rejection—of assumptions often operating below conscious awareness. The fourth is the motor region's work of engaging in committed action. (Glisczinski, 2012, p. 2)

When parsing Glisczinski's contentions about the stages of neurocognitive function through which students pass when experiencing a transformation of perspective, it's clear he relates the brain function of the "disorienting dilemma" to sensory intake by the learner. In other words, the trigger event for what eventually makes the student expand or change her previously-held perspective is perceived through hearing, seeing, touching, tasting, or smelling.

The next neuronal network involved resides in the temporal region because the process of reflective observation is a linguistically-based activity: "I have new information that seems at odds with what fits in my version of the world. Why is that? What do I do next? Is it worth spending time to resolve this dilemma?"

Answering such questions keeps the temporal region of the brain firing, but the next step also requires the addition of the pre-frontal cortex because synthesis, analysis, speculation, judgment, and other higher-order executive functions are required to devise answers that help the learner bring her world back into a congruent state, one that accommodates the new perspective.

(Of course, in this stage, the learner may reject such accommodation. This means she devalues the accuracy or credence of the disorienting information, finding a way to discredit it that makes sense to her.)

In the successful instance of transformation, the fourth stage requires actions — actions that are new and which align with the newly expanded perspective. Taking action engages those areas of the brain that regulate motor activity.

In short, Glisczinski poses a 4-stage neurocognitive interpretation of the Transformative Learning Experience.

This model can be useful for faculty because it helps us better plan how and when we can provide opportunities that create disorienting dilemmas. Then the model provides clues to what we can do to shepherd students through the remaining stages of a successful perspective expansion.

While perhaps an oversimplification, here might be a brief “User’s Guide” for mentoring students through perspective transformation:

1. Present students with perspective-expanding information.

Sometimes this occurs naturally because the course content forces it. For example:

- evolution theory can disorient previously held beliefs
- fact-based history can challenge previously held conspiracy theories
- philosophical big questions can force reassessment of students’ worldviews

At other times, faculty can route student learning through a Central Six Tenet to achieve a course learning outcome, and in so doing, students are exposed to different beliefs in an ancillary process that ties into their work along the Central Six route. For example:

- Choosing Cultural Competency as the route to achieve a math outcome might mean exposing students to the way a different culture thinks about math and therefore approaches a math problem, ultimately deriving the correct solution even though the approach is decidedly *not* the way the Western mindset approaches the problem. This might prompt students to challenge previously held beliefs that Western culture’s approach is always the superior approach.
- A business class structured around a service learning project to achieve a course outcome about marketing plan creation might mean students confront pejorative assumptions about socioeconomic classes and be forced to adjust those assumptions in the face of contrary evidence.

Bottom Line: Create an opportunity for students to confront the ways they make

sense of the world. You won't necessarily know if you have designed a learning activity that challenges any student's worldview, but you definitely will accomplish this more often if you intentionally look for opportunities that *might* prompt students to challenge their beliefs than if you leave this completely to chance.

2. Help students develop questioning skills.

This is an age when it's easy for students to devalue the ability to ask good questions because finding answers to any question is so easy for them; after all, there's a reason Google has become a verb in today's parlance. We have the chance to help students re-experience the magic in learning how to ask good questions. Some good strategies for this include:

- "What's in it for me?" Jean Twenge's work, and others', focuses on whether and why there is a [narcissism epidemic](#) among college-aged and younger students. Setting aside the implications of such a thing if it exists, at least students' interest in their own lives and the lives of their friends (witness: Facebook) means we can use self-interest as a launching point for questions about meaning in one's life.
- Assign journaling activities in which students write out their answers to questions you force them to confront. Then require them to pose a follow-up question which has arisen during the thinking needed to answer the required questions. (Side benefit: students often try to answer the question they've posed to themselves.)
- Allow class time for thinking! After a student presentation, for example, have students summarize the points made by the presenter, then give students time to individually generate questions related to the presentation. After that quiet time, put students into groups to share their questions, refining the ones they select as the best for their group to challenge points made in the presentation.

Bottom Line: Provide opportunities for students to generate questions about their own perspectives and beliefs.

3. Help students develop the skills of analysis, synthesis, and critical thinking — skills they must have for successful self-reflection.

In Stage Three of a Transformative Learning Experience, students must be equipped with the skills to judge a) whether the new information they've been exposed to is trustworthy and therefore demanding of resolution, and b) how to resolve the contradictions presented by the new information when compared to beliefs previously held.

Bottom Line: To teach critical thinking in college, we must provide students opportunities to practice doing it. If we repeatedly build learning activities that demand critical evaluation of new information that may be at odds with limiting

perspectives, we do our students the service of providing the crucible within which to test their evaluative abilities. *But we must not leave them to stumble through this on their own!* We must model analysis, synthesis, critical thinking. One excellent way is [thinking out loud for your students](#).

4. Mentor students through the adoption of more expansive perspectives and ways of making sense of the world.

Examples:

- Share your personal stories of perspective-expansion when you confronted a belief that you came to understand was limiting your ability to grow.
- Make it easy for students to find more information about others' thinking on the topics that have prompted students' perspective expansion. This isn't necessarily easy for students to google because they often don't have the background to pose the right search terms. You may need to point them to Thoreau or Wittgenstein or the film *Finding Forrester* or Dylan's lyrics or the nearest place to sit and listen to the wind rustle the leaves or *Brave New World* or Yoda or Mark Twain or whether to choose the red pill or the blue pill or . . .
- Provide a safe place to confront inner self. Such work is done, of course, within students' own minds, but for some students, it's a scary process because their college experience is their first foray into an environment in which perspective-shaping is allowed to be a self-initiated and self-controlled activity.

Bottom Line: Accept the fact that, yes, you teach your discipline, but more importantly, you teach your students.

Glisczinski, D. (2011). Lighting up the mind: Transforming learning through the applied scholarship of cognitive neuroscience. *International Journal for the Scholarship of Teaching and Learning*, 5(1). Retrieved September 24, 2013 from http://academics.georgiasouthern.edu/ijsotl/v5n1/essays_about_sotl/Glisczinski/index.html

Glisczinski, D. (2012). Exercising critical reflection: Measuring the relationship between brain derived neurotrophic factor and transformative learning experiences. Retrieved September 24, 2013, from [http://www.d.umn.edu/~dglisczi/Glisczinski/Glisczinski\(2012\)ExercisingCriticalReflection.pdf](http://www.d.umn.edu/~dglisczi/Glisczinski/Glisczinski(2012)ExercisingCriticalReflection.pdf)