2. SLO: THEORETICAL UNDERSTANDING

Class: SED 690
Professor: Dr. Brian Foley
Assignment: Misconceptions Paper

A significant part of SED 690 was a review of the current research on the misconceptions that students possess and how this affects their ability to learn and apply new knowledge. Dr. Foley presented several different theories pertaining to this pedagogical concern: misconception versus phenomenological primitives. Perhaps the most fundamental difference between the two theories is that a misconception must be deconstructed if learning is to occur. On the other hand, a phenomenological primitive (p-prim) is an a priori cognitive construct that should not be eradicated, rather it should be modified and employed to facilitate learning. Dr. Foley had us read and evaluate a number of articles dealing with both misconceptions and p-prims.

I had the opportunity to employ this knowledge of misconceptions and p-prims by writing a paper, The Artificer-Phenomenological Primitive and the Inculcation of Evolutionary Theory, which was a synthesis of what I had learned from Dr. Foley lectures and my reading. This paper proposed that the difficulty that the scientific community has in inculcating evolutionary theory in secondary and post-secondary education is due to the existence of a p-prim which I called the Artificer Phenomenological-Primitive. I argued that the artificer p-prim is responsible for (1) the persistency of agency, (2) the impulse to ascribe agency linguistically, (3) the transcultural and transhistorical ascription of agency to origin narratives, (4) an
explanation for the early childhood development of the artificer p-prim, and (5) the promising pedagogical interventions that employ a p-prim approach.

If this synthesis is correct, then the p-prim could be adapted to inculcate evolutionary theory. This was evinced by the work of Matthews (2001) and Blackwell (2003). Matthews proposed the use of “creation stories in teaching evolution” as a possible pedagogical approach. This is consistent with the idea that a p-prim is not viewed as interfering with “students’ development of expertise; they are essential to it.” (Hammer, 1996 p120). Blackwell developed this concept further by constructing a questionnaire that would be given to students prior to instruction in their biology class. Although not articulated as such, this questionnaire was designed to re-direct the artificer p-prim so that the artificer would be perceived as natural selection. Blackwell reported improved student acceptance of evolutionary theory as a result of his questionnaire intervention. If Blackwell had been dealing with a misconception it is unlikely that his methodology would have made a significant difference in the students’ acceptance of evolution thus lending further evidence for the existence of an artificer p-prim.

In my paper I questioned the ethics of manipulating this p-prim in order inculcate a theory which may run contrary to a student’s philosophical/religious beliefs. But the point here is that I believe this assignment and the associated reading and instruction that went along with it demonstrates a theoretical understanding which could be put to use in the classroom.

References:


Of Cognitive Structure Influence Instructional Perceptions and Intentions.

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