

Driscoll Chapter 7

Interactional Theories of Cognitive Development

1. Introduction

- These are perhaps the two most unique and interesting voices in cognitive theory we will meet. Both have taking stances on the foundational importance of social/cultural environments in the process of learning. The order of this chapter is interesting, in that Bruner counts Vygotsky as a great influence, and his influence is still being seen made manifest in Bruner's writings. But then Bruner started as a more conservative voice in the cognitive revolution of the 1950's, while Vygotsky became available in this country in the early 1960's. So the order of this chapter is effect rather than chronology.
- Jerome Bruner has had an enormous career in the psychology of learning. In his early days he was one of the leaders in the "cognitive revolution" that finally broke the dominance of B.F. Skinner's behaviorism. Yet it was not long before he broke with this revolution and it's dominance by information-processing theorists who he viewed as lightly re-clothed behaviorists. Bruner was always concerned with the greater social role of learning, a priority that was forsaken by main-stream cognitive science. Bruner's current thought goes a great distance beyond where the text explains.
- Lev Vygotsky is a most interesting character. His perspective on learning comes from his pre-Stalinist socialism, where he started with considerations of the culture, not the individual as we do in the West. It is this perspective that led to his notion of the Zone of Proximal Development (ZPD, pronounced "Zap-Duh" by hip theorists), which describes that area where a learner can do more with help than they could alone. This led to the notion of scaffolding; the culture around the individual allows the individual to grow.

2. Terms to Know

- Enactive
- Iconic
- Symbolic
- Learning by Discovery
- Zone of Proximal Development
- Intersubjectivity

3. Thoughts

- Bruner: Beyond the Information Given

- Here Bruner is giving a description of what an adult “endpoint” is through the following three modes of development. Essentially, Bruner gives a description of thinking that is creative in nature. He uses the words “autonomous” and “self-propelled” to describe a mature mind, one that is able to go beyond provided information to new truths. So in a way there is an independence in this mind, yet it comes about not only due to a progression through developmental stages, but is extended by the role of culture.
- Three Modes of Representation
 - Sequence of Representational Stages
 - It’s important to be clear on Bruner’s stages and to contrast them with Piaget. Bruner both agrees and disagrees with Piaget - he sees a clear path from enactive (sensorimotor) to symbolic (formal), but does not see a rigid age-dependent sequence. Also, he sees culture as an important factor in how the course of cognitive growth proceeds.
 - Enactive - “action or patterned motor acts”
 - Iconic - “conventionalized imagery and perception”
 - I am intrigued by the word “conventionalized” for it implies a large role for culture. We are using external symbols to represent knowledge. Some posit that TV has created a barrier at this stage few transcend into the Symbolic stage.
 - Symbolic - “Language and reason”
 - Though most adults have language and reason, they often are not able to use them on novel learning situations. My online Web Authoring class shows that, and I have been using more and more pictures to illustrate concepts.
 - Adult learning - Bruner makes no direct application of his stages to adult learning, but does seem to leave the door open for others to try it. The Web Authoring example above is an example of how I think stages can surely be useful in teaching skills to adults.
 - Sequence and Instruction
 - Very simply, if the students do not have highly defined symbolic systems that are robust enough to be applied to novel situations, then sequence is best conceived of as a journey from enactive to iconic to symbolic. Others have posited that no true understanding is possible without a motor (“gut”) sense of the issue.
 - Schultz and I were discussing calculators in the classroom. I would maintain that calculators are iconic machines that make math “easier” because they replace the silly symbolic way math is usually taught. Note that math instruction fails a lot with children - Bruner might say that it is

because you cannot start a subject at the symbolic level, especially with children. What's missing in math education traditionally is the enactive level. My son is in a Montessori school where they use manipulatives as a way to introduce math concepts in an enactive manner.

- The Course of Cognitive Growth
 - Learning by Discovery
 - The thing to be most clear on in this concept is that Bruner is not talking about accidental learning. His theory of discovery is highly structured in that there must be “guided practice and sufficient prior knowledge.”
 - He was distressed by the notion that rich environments and freedom came to be associated with discovery learning. While these are qualities, Bruner retained the teachers role as experiential guide through this process. Please be clear on this important and generative part of Bruner’s pedagogy. His goal is always to develop thinking, and his way of doing this was to have students learn to “attack problems” in an authentic way for their discipline.
 - Culture and Cognitive Growth
 - Schooling is an instrument of culture. It should provide a “toolkit” for students to operate and thrive within that culture.
 - Evidence of learning should be seen outside of the classroom context. Learning should make a difference in lives, not insitutionally-sponsored performance.
- Vygotsky: The Social Formation of Mind
 - Vygotsky’s Developmental Method
 - Rejected the simplicity of Piaget’s stages in favor of a much more complex description of development.
 - The Natural Process of Development
 - Phylogenetic Comparisons
 - Sociocultural History
 - The Social Origins of Higher Mental Processes
 - Internalization
 - The Zone of Proximal Development
 - Learning, Instruction, and Development
 - Teaching Teaching vs. Content-Specific Skills
 - Interaction in the Zone of Proximal Development
 - The Role of Language and Other Sign Systems

- Conclusions