# Jerome Bruner: Teaching, Learning and the Spiral Curriculum

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Jerome Bruner was one of the most important psychologists of the 20th century, though it is in the field of education that his influence has been most keenly felt. Two of his books, *The Process of Education* and *Towards a Theory of Instruction,* have come to be recognized as landmark works and reveal Bruner's particular view of the educational theory known as constructivism.

## The Spiral Curriculum

In the 1960s, Jerome Bruner put forward a theory of cognitive growth which looked to the influence of environmental and experiential factors in a child's education, and which suggested that each child's intellectual ability develops in stages through changes in how the mind is used.

**Teaching and learning at an early age should have as its goal the child's intuitive grasping of a subject's basic ideas.**

Bruner's position was that young children need to learn the underlying principals of different concepts – the structure of ideas – rather than to simply memorize their related facts and data. He championed learning through inquiry, and believed that the teaching and learning of any subject at an early age should have as its goal the child's intuitive grasping of its basic ideas. As children grow then, Bruner believed, curriculum should revisit earlier learned ideas, expanding upon them until a child reaches a more complete understanding of individual ideas and how they relate to one another. Bruner referred to this as the "spiral curriculum", wherein ideas are presented in repeated learning opportunities over time, and are organized from the simple to the complex, from the general to the specific, and are examined in relation to one another. Engaging information in a spiral fashion, Bruner wrote, helps children to organize knowledge into a structure that makes it both increasingly accessible and usable in areas beyond the immediate learning situation.

## Process and Structure

In *The Process of Education,* Bruner wrote of children as being active problem solvers, ready to explore complex subjects and ideas. In addressing the role of education within this view of young learners, Bruner identified four themes to be considered:

**Any subject can be taught effectively in some intellectually honest form to any child at any stage of development.**

- **The role of structure in learning and teaching**

  Bruner proposed introducing knowledge areas in a way which helps young children see the basic organizing principles within complex concepts, and to realize the more general nature of a concept before learning its particular information. "The teaching and learning of structure, rather than the simple mastery of facts and techniques, is at the center of the problem of transfer (of knowledge). If earlier learning is to render later learning easier, it must do so by providing a general picture in terms of which the relations between things encountered earlier and later are made as clear as possible."

- **Readiness for learning**

  Bruner believed that the teaching of important areas of knowledge is often postponed because they are thought to be too difficult for young children. Certainly teachers should watch for children's readiness to interact with different ideas. But it is also true, Bruner wrote, that "…any subject can be taught effectively in some intellectually honest form to any child at any stage of

development." This thought is at the foundation of the "spiral curriculum". Teachers need not just wait for each child's readiness to encounter a new idea, Bruner wrote, but can also foster, or scaffold, that readiness by "deepening the child's powers where you find him here and now."

- **Intuitive thinking**

  Bruner believed that children can and should be encouraged to think intuitively and not just analytically. In helping children to understand underlying principles in conceptual thought, he wrote, they begin to deal with problems on an intuitive level, looking not simply for the analytically "correct" answer but rather at broadly applied conceptual connections which help them learn to be problem solvers. "It seems likely that effective intuitive thinking is fostered by the development of self-confidence and courage in the student… Such thinking, therefore, requires a willingness to make honest mistakes in the effort to solve problems." Too often, Bruner wrote, our educational system rewards answers that are simply right without giving recognition or support to the creative process of thinking intuitively about a problem. Teaching, and learning, need to make room for both.

- **Motives for Learning**

  Interest in a subject, Bruner believed, is the ideal motivation for learning.

External motivations, such as grades or other rewards, carry within them the seeds of loss through the inability to meet an applied standard of success. Instead, Bruner wrote, it is the task of teachers and learning environments to provide materials and activities that pique children's interest, motivating them from within to pursue opportunities which will, inevitably, further their own growth. "Motives for learning must be kept from going passive… they must be based as much as possible upon the arousal of interest in what there is to be learned."

## The Spiral Curriculum in Relation to Constructivism

The theory of constructivism views the act of knowledge acquisition as a self-constructive process of cognitive organization on the part of the child. The Swiss developmental psychologist Jean Piaget viewed learning as an ongoing process of self-regulated behaviors which balance the acts of assimilation and accommodation. Assimilation, Piaget asserted, is the child's active organization of experience, through which ideas and experiences that match the child's current understandings are incorporated into an existing cognitive structure. Accommodation, on the other hand, is a reflective behavior through which learners change their cognitive structures in the face of experiences which do not mesh with their existing understandings. This process is commonly referred to as cognitive construction.

**The cognitive theory of constructivism views the act of knowledge acquisition as a self-constructive process of cognitive organization on the part of the child.**

Russian educator Lev Vygotsky, on the other hand, examined the interaction between the individual and others in a learning environment. The focus of Vygotsky's work was the effect of social interaction, language and culture on learning, which he viewed as a process referred to now as social construction. Like Piaget, Vygotsky believed that learning was an act of self-construction, but he differentiated between two types of conceptual knowledge, referring to them as "spontaneous" and "scientific" concepts. Vygotsky defined spontaneous concepts as those which come from within children themselves as

they reflect on everyday experience. He defined scientific concepts, on the other hand, as those which originate in classroom interactions between children and their peers and with adults, and which help bring the child toward formal abstractions and logically defined thinking. Vygotsky believed that the skills a child can learn with adult guidance, and peer interaction, exceeds what the child can obtain alone. As an educator, Vygotsky's concern was with the learning that expands children's understanding beyond individually held "spontaneous" concepts toward an understanding of culturally shared "scientific" concepts.

**Bruner saw the role of the teacher as that of translating information into a format appropriate to each child's current state of understanding.**

Like Piaget, Jerome Bruner believed that children construct knowledge internally by engaging in discovery learning, selecting and transforming information, constructing hypotheses and making decisions. And, like Piaget, Bruner also believed that learners rely on an internal cognitive structure to bring meaning and organization to learning experiences. Yet, like Vygotsky, Bruner also saw a direct role for interaction between a learning child and others in the learning environment, and saw the role of the teacher as that of translating information into a format appropriate to each child's current state of understanding.

In a child-centered learning environment such as Community Independent School, children are encouraged to discover ideas by themselves, and are provided opportunities which promote their desire to learn. Within this structure, there is also value in the dialogue that occurs between students and their teacher; between students with one another; and between the teacher, the students, and the learning environment itself as a vehicle for knowledge. Coupling these aspects of learning with Bruner's ideas of a spiral curriculum enables Community Independent School to present ideas to children at young ages, to help them revisit concepts over time as they reach toward mature understandings, and to provide children with opportunities to become creative, intuitive problems solvers equipped with the skills they need to construct and express their own deepening knowledge.