Psychological Foundations of Curriculum

Kevin Thompson
1. In what ways do psychological foundations enable curriculum workers (teachers, supervisors, and curriculum developers) to perform their educational responsibilities?

2. How would you compare the three major theoretical schools of learning?

3. How has the view of multiple intelligences influenced the field of curriculum? How might this concept of intelligence influence the field in the future?

4. How does constructivism incorporate the most recent views of learning?
Focusing Questions (cont’d)

1. How should the concept of learning styles influence the thinking of those responsible for curriculum development and delivery?
2. How should an educator use the information about various types of thinking?
3. How would you define humanistic learning in schools?
4. In what ways can addressing emotional intelligence be justified in the curriculum?
What is Psychology?

• the scientific study of the mind and behaviour

• It is concerned with the question of how people learn

• Question: Why should a curriculum developer have knowledge about the psychology of learning?
Psychology of Learning

- Psychology theories provide insight into understanding the teaching and learning process:
- What is learning?
- Why do learners respond as they do to teachers’ efforts?
- What impact does the school and culture have on students learning?
Psychology of Learning (cont’d)

- Psychology theories provide principles and direction for curriculum developer:
  - How should curriculum be organized to enhance learning?
  - What is the optimal level of student participation in learning the curriculums various contents?
3 MAJOR THEORIES in Psychology

- Behaviorism
- Cognitive Psychology
- Phenomenology and Humanistic Psychology
Contrasts of the three Major Theories

**Behaviorism.**
Learning tends to focus on conditioning or modifying behavior through reinforcement and rewards.

**Cognitive Psychology**
Learning process focuses on student’s developmental stages, multiple forms of intelligence, problem solving, critical thinking and creativity.

**Phenomenology and Humanism**
Learning deals with the learner’s needs, attitudes and feelings.
Behaviorism

Main Theorists:
1. Thorndike – Connectionism
2. Pavlov (and Watson) – Classical Conditioning
3. Skinner – Operant Conditioning
4. Bandura – Observable Learning and Modeling
5. Gagné – Hierarchical Learning
Edward Thorndike (1874 – 1949)

Father of modern educational psychology & founder of behavioral psychology

- Started his research with animals using stimulus-response (classic conditioning) and developed the idea of Connectionism.

**Connectionism**

- Defined learning as a connection or association of an increasing number of habits.
Three Major Laws of Thorndike

1. Law of Readiness
   - If nervous system is ready, conduction is satisfying and lack of conduction is annoying.

2. Law of Exercise
   - Justifies drill, repetition and review.

3. Law of Effect
   - Justifies use of rewards and punishments, especially Skinner's operant model.
Ivan Pavlov (1849-1936)

- Pavlov was the first to demonstrate Classical Conditioning.
- He is best known for his experiment with salivating dogs.
- It involves - Eliciting an unconditioned response by using previously neutral stimuli.
- Unconditioned stimuli create reflexes that are not “learned,” but are instinctual.
- Neutral and adequate stimuli are introduced at the same time. Adequate stimulus is gradually removed, and the neutral stimulus elicit the same reflex.
James Watson

• Watson took Pavlov’s findings to another level.
• Emphasized that learning was observable or measurable, not cognitive.
• Believed the key to learning was in conditioning a child from an early age based on Pavlov’s methods.
• Nurture vs. Nature
  ○ Watson’s theories strengthened the argument for the influence of experiences as opposed to genetics.
B.F. Skinner was one of the most influential American psychologists.

He began his research with rats at Harvard and pigeons during WWII.

His work led to the development of the Theory of Operant Conditioning.

- The idea that behavior is determined or influenced by its consequence.

Respondent vs. Operant behavior

- Respondent behavior is the elicited response tied to a definite stimulus.
- Emphasized the use of positive and negative reinforcement.
Albert Bandura

- Bandura- bridge/transition

- learning is social by observation, modelling, imitation

- He showed that aggressive behavior can be learned from watching adults fighting, violent cartoons or even violent video games. Passive behavior can also be learned from watching adults with subdued actions.
Gagné’s Hierarchy of Learning notes the transition from behaviorism to cognitive psychology.

The Hierarchy of Learning is an arrangement of 8 behaviors ranging from simple to complex. The first 5 behaviors are Behaviorist, the next 2 are both behaviorist and cognitive and the last (highest form) is cognitive. The hierarchy suggests a “bottom-up” approach to learning where general principles/concepts must be learned before advanced learning can take place.

He also describes 5 observable and measurable learning outcomes
Robert Gagné (1916 – 2002)

1. Intellectual Skills
   • “knowing how” to organize and use verbal and mathematical symbols, concepts and rules to solve a problem.

2. Information
   • “knowing what” – knowledge and facts

3. Cognitive Strategies
   • “learning strategies” needed to process information

4. Motor skills
   • Ability to coordinate movements

5. Attitudes.
   • Feelings and emotions developed from positive and negative experiences.
   • Mental operations needed for each outcome differ.
   • Gagné’s Instructional Events lead into cognitive psychology.
The Impact on the curriculum

- **Behaviorism – curriculum**
  - impacts on curriculum
    - Increase learning relevant and enjoyable
    - Connections should be built on student’s positive experiences
    - Negative feelings: identified and modify to positive results
  - **Behaviorism:**
    - curriculum should be organized to master the subject matter
    - Highly prescriptive and _dignostic_
    - Step by step
    - Structured learning methods
    - Critics: too mechanical – over reliance on classical conditioning
Cognitive Theory
Maria Montessori (1870 - 1952)

What she did:

- Psychiatric Clinic at the University of Rome - taught “difficult” children to read at a normal level
- 1906 asked to start a progressive school for slum children of Italy - Casa dei Bambini (Children’s House)
- Focus on how sensory stimulation from the environment shapes thinking
Maria Montessori (1870 - 1952)

- Focused progressive child-centered approaches which involved freedom within structure
- Opposed behaviorist focus on only “doing” but focused also on looking and listening • Focus on how sensory stimulation from the environment shapes thinking
Jean Piaget
1896 - 1980

**Sensorimotor stage** (Birth to 2 years old)
learning by movement and sensory exploration

**Preoperational stage** (ages 2 to 4)
Needs concrete interactions (no abstract)
use of symbols (pictures, words) to communicate

**Concrete operations** (ages 7 to 11)
begins to think abstractly, needs physical, concrete examples

**Formal operations** begins @ 11-15
abstract thinker
Lev Vygotsky (1896-1934)

- Russian psychologist
- Theory of sociocultural development

- Culture requires skilled tool use (language, art, counting systems)
- The **Zone of Proximal Development** (ZPD): distance between a student’s performance with help and performance independently.
- Learning occurred in this zone
Lev Vygotsky
(1896-1934)

• Learning as a social activity

• Social environment (experiences, skills, knowledge, culture) influence learning

• Cooperative, collaborative and group investigation allow students to discuss ideas, beliefs, misconceptions

• Zone of proximal development – difference between what learners can do on their own and with help of others (experts /peers)
Constructivism

• Some include this as a separate theory, other include it inside of cognitive theories.

• Individual must construct own knowledge - make meaning.

• Learner must reshape words - mimicking is not enough.

• Learners must make knowledge personally relevant.

• Learning occurs when new information is linked to prior knowledge, so mental representations are subjective for each learner.

• Learning is optimal when there is awareness of the process - metacognition.
Humanism

- Learner is seen as a person who has feelings, attitudes and emotions.
- Emotions – feelings, attitudes, self-assurance, intrinsic and extrinsic motivation
- Emotions can facilitate learning and at the same time can distract learning
Humanist: Abraham Maslow

- Observed humans are striving to control behaviour and gratify themselves
- Proposed “Maslow’s Hierarchy of Needs”
- When lower needs are satisfied, they will be more motivated to go higher level.
Humanist: Carl Rogers

- Client-centered therapy (not tell directly what to do but create atmosphere, sense their taught and feelings)

- Classroom must be learner centered and teachers should facilitate learning.
Learning Styles

ACTIVITY
Some uses of psychology in making decisions about the curriculum

- Goals guide the educational thrust of the school, objectives provide a specific direction in the selection of experiences to meet students’ educational needs.

- Expectations of student achievement have been stated against a background of goals and objectives.
Some uses of psychology in making decisions about the curriculum cont’d

- Learning experiences should be designed to allow practice of the behaviors that the objective suggests.

- Learning experiences should express what the learner believes he or she is expected to know.

- Learning experiences should sometimes be of the self-activating type. Students need opportunities to proceed at their own rate through subject matter that suits them.
Learning experiences should be fostered, whenever possible, in intimate face-to-face relationships within small groups.

Learning experiences should be as varied as the objectives they represent. There has been too great a tendency to utilize a few kinds of experiences to achieve several objectives.