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3 Forms of Knowledge embodied = what we can do in nature (direct experience; becomes second nature; context **Social Contexts of Learning** dependent) practical = skills acquired in practice (eventually **E-Learning** (contexts) becomes embodied) discursive = proportional elaborations we can make individual in social order **Bruner** • 1-to-1 role of culture group **Role of Teacher** children naturally curious; inherently sensitive to culture children live in affects: community "Sage on the Stage" culture around them who they believe they are what they believe they can accomplish **Notable Figures:** Blended Learning = combination of contexts how they process new information sometimes all 4 What is it? **Skinner** (operant) a process good consequence = likely to repeat behaviour **Notable Figures:** experience causes change in behaviour bad consequence = unlikely to repeat behaviour effect of external events on individual ie. hand on hot stove **Idealism** (behaviourist) Piaget (Cognitive Constructivist) observable behaviours idea centered individual construction of knowledge Watson teacher central to learning Impact on Education: "solitary scientist" lecture, discussion, imitation students expected to achieve specific, desired development preceeds learning What is it? language reflects thinking outcome Realism (behaviourist) **Classical Conditioning (Pavlov):** creation of meaning through personal behaviours are rewarded or punished content systematic, organized experiences unconditioned stimulus (ucs) (consequences) standardized tests, textbooks, curriculum isolated to mind filters information to create own conditioned stimulus (cs) external reinforcement changes behaviour over subject area Vygotsky (Social Constructivist) interpretation of reality (construct own cs + ucs = conditioned response (cr) learning occurs through active participation understanding of world) association forms b/w ucs and cs Pragmatism (constructivist) • cognitive development *depends on* interaction with memory constantly under construction - changes cs alone leads to response application of knowledge - uses ideas for problem as new information and experiences are gathered learning fosters development engaging learner in activities interdisciplinary thinking reflects language **Operant Conditioning (Skinner):** consequence of behaviour influence probability of Existentialism reoccurance target behaviour want to change (train new Punishment vs. Reward Punishment always decreases behaviour **Behaviourism** Reinforcement and Punishment "authentic tasks" - real world problem solving behaviour) Constructivism self-reflection - what student is doing, how understanding changes Reinforcement always increases behaviour Strategies: **Neo-Behaviourism** (Bandura) social participation collaborative learning provide students tools to support learning observation influences behaviour* gathering multiple sources of information *not all the time (ie. speeding ticket) debate **Role of Teacher** Inquiry Theory of Development & Learning "Guide on the Side" problem solving CoP provide activities within ZPD intermittent reinforcement over time fastest way to social learning encourage students to continually assess how activity change behaviour common interest in subject or problem is helping gain understanding Situated Learning (Lave & Wenger) collaboration over time guide students to question themselves & their learning is contextual - embedded in become more competent - move periphery to centre social/physical environment • classroom environment = students "learn how to engagement in "community of practice" **Stages of Cognitive Development** Impact on Education: students create meaning through personal Sensorimotor Stage (0-2) experiences, and acquisition of new knowledge child begins to interact with environment students as active participants in creation of learning Preoperational Stage (2-6 or 7) learning must be relevant to students child begins to represent world symbolically **Notable Figures:** Concrete Operational Stage (7-11 or 12) child learns rules such as conservation Impact on Education: cognitive development in any stage depends on children think differently than adults Formal Operational Stage (12+) children must be developmentally ready to learn children must engage in appropriate activities in order adolescent can transcend concrete thinking and think teachers should use developmentally appropriate to learn (active learners) about the future cognitive growth occurs through (1) process of practices to enable children to learn adaptation and (2) process of assimilation and each stage qualitatively different accommodation stages follow a regular sequence Cognitivism What is it? experience and time needed to progress information processing how and why we think Assimilation = incorporating new knowledge into existing **Content Knowledge** ability to remember new information is highly related Accommodation = adjusting to new knowledge **Declarative Knowledge** = *knowing what* to amount of knowledge already acquired semantic memory Schemas: **Equilibration** episodic memory how memories are stored in LTM process of balancing what we know with what we many types of schemas may be asked to learn that doesn't quite fit **Procedural Knowledge** = *knowing how* schemas are what LTMs attach to we are always trying to achieve equilibrium (balance) - when balance is disrupted seek to restore **Conditional Knowledge** = *knowing when & why* Working (short term) (WM) equilibrium focused on explicit task movement through stages - cognitive conflict & up to 30 seconds disequilibrium Sensory Memory (SM) stimulus around us **Processes of Memory:** fraction of a second to a few seconds "Providing students with evidence that Habituation contradicts their initial beliefs will require as SM increases, processing speed increases no longer paying attention to stimulus them to modify cognitive structures on the basis action becomes habit of new information. Through this process of Working (short term) (WM) adaptation, students build new cognitive focused on explicit task Dishabituation structures." up to 30 seconds something changes so you need to pay attention Long Term (LTM) **Automaticity** -processing information with little to no effort up to a lifetime

Archer (Critical Realist)

natural - time constraint

practical - technological constraint social - work-related constraint

action becomes automatic

Selective Attention

other stimuli

concentrating or focusing mental resources to a task

ability to focus on important parts while blocking out

Attention

3 Orders of Reality

naturalpracticalsocial