

ID ISSUES AND FEATURES THROUGH BEHAVIOURIST, COGNITIVIST, AND CONSTRUCTIVIST LENSES

--ERTMER & NEWBY, 1993



THE NEED TO BRIDGE LEARNING THEORIES WITH PRACTICAL ID ISSUES...

Why look to human learning theories?

- Source of tried-and-true techniques, strategies.
- Insight on selecting the right strategy—matching demands with the right technique
- Informs us how to integrate strategies/techniques in given contexts.
- Reasonably predict foreseeable issues.



SCHUNK'S 5 QUESTIONS TO DISTINGUISH LEARNING THEORIES:

- How does learning occur?
- Which factors influence learning?
- Role of memory?
- How does transfer occur?
- What types of learning are best explained by the theory?

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Additional questions added by Ertmer & Newby (for our ID context/purposes)

- What assumptions /principles of this theory are relevant to ID?
- How should instruction be structured to facilitate learning?

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WHY THE BIG 3?

- Behaviourism
- Cognitivism
- Constructivism

Timeline: Behaviourism(1950)→Cognitivism(late 1950s)→Constructivism

Empiricism (a.k.a associationist) VS Rationalism

- Bottom-up logic VS Top-down logic
- Inductive VS Deductive

Quick Discussion: Examples of each? (Groups of 3-4)



BEHAVIOURISM AND ID

- Suited for what types of learning?

Stimulus-response associations, chaining, recalling facts, and defining and illustrative ideas/concepts

- Generally not higher order skills

Principles, techniques, and structures applicable in ID

- Emphasis on measurable objectives
- Need for learner analysis
- Progressive complexity
- Reinforcement/rewards/feedback (to shape behavior)
- Determine/set up strong cues to elicit response
- Facilitate operant conditioning (environment important)



COGNITIVISM AND ID

- Suited for what types of learning?

More complex learning—Reasoning, argumentation, and problem-solving

Principles, techniques, and structures applicable in ID

- Breaking material down into standard, simple units for efficient absorption and transfer of knowledge
- Feedback(not to shape behavior, but to strengthen connections between pieces of info/knowledge)
- Learner-centered/controlled: planning, monitoring, meta-cognition
- Present new info in best organization to achieve organization of, assimilation into, accommodation into schemas—Piaget reference)
- Enable structuring and organization; promote strategies such as summarizing, categorizing, outlining, and synthesizing etc.
- Encourage linking current to previously known skills/knowledge (utilize metaphors, analogies, and models. E.g., link to learner's previous job/profession)



CONSTRUCTIVISM AND ID

- Suited for what types of learning?

Well, it depends on the context...

Cannot assume/identify types of learning in isolation of context (Bednar, Cunningham, Duffy & Perry, 1991)

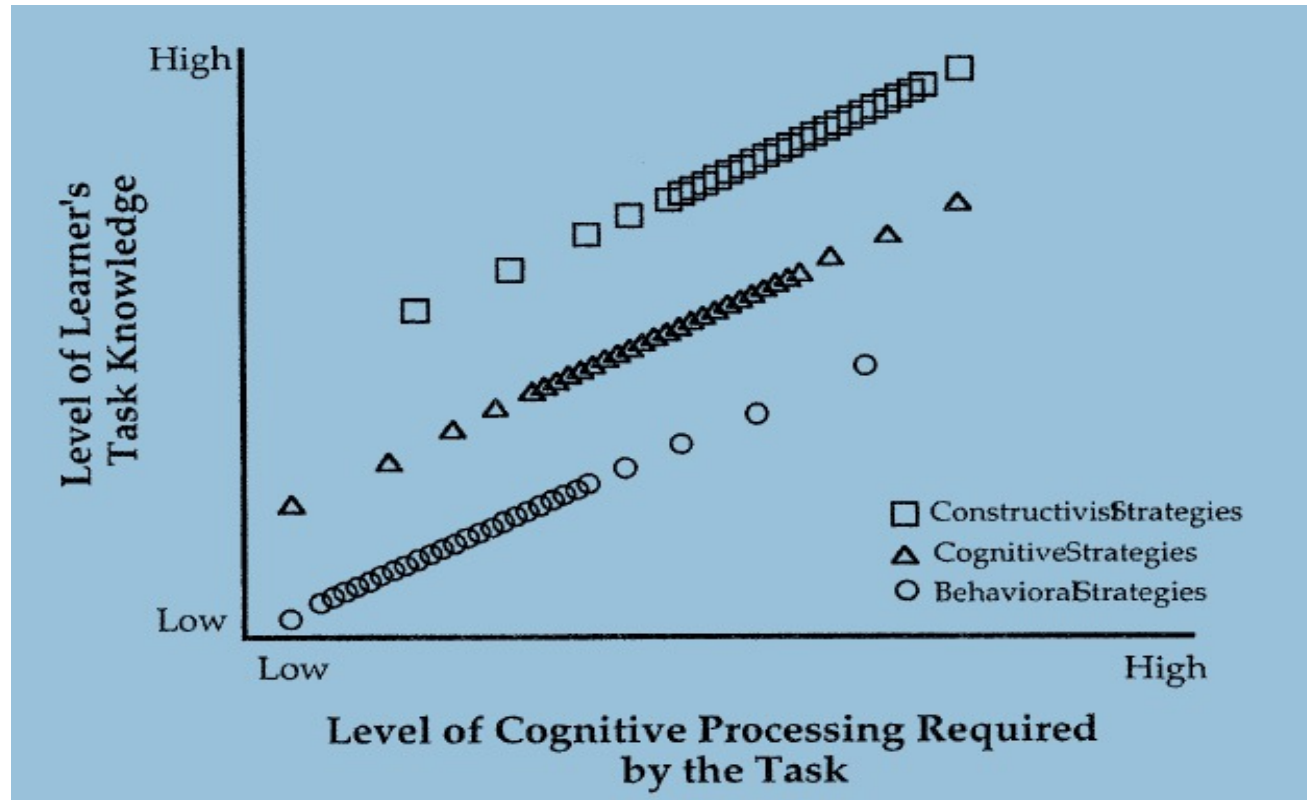
Epistemological domains not to be isolated; interwoven.

Principles, techniques, and structures applicable in ID

- Guide learners to become experts in their own domain/content area/context; content not specified; learner-centered/controlled direction
- Emphasis on having multiple perspectives—present knowledge in perspectives; alternative ways around problem
- Collaboration (to expose learners to multiple perspectives)
- Importantly, assessment focuses on transfer of skills, meaning, and learned knowledge to various other new scenarios/situations (essentially to deal with complex problems in reality).



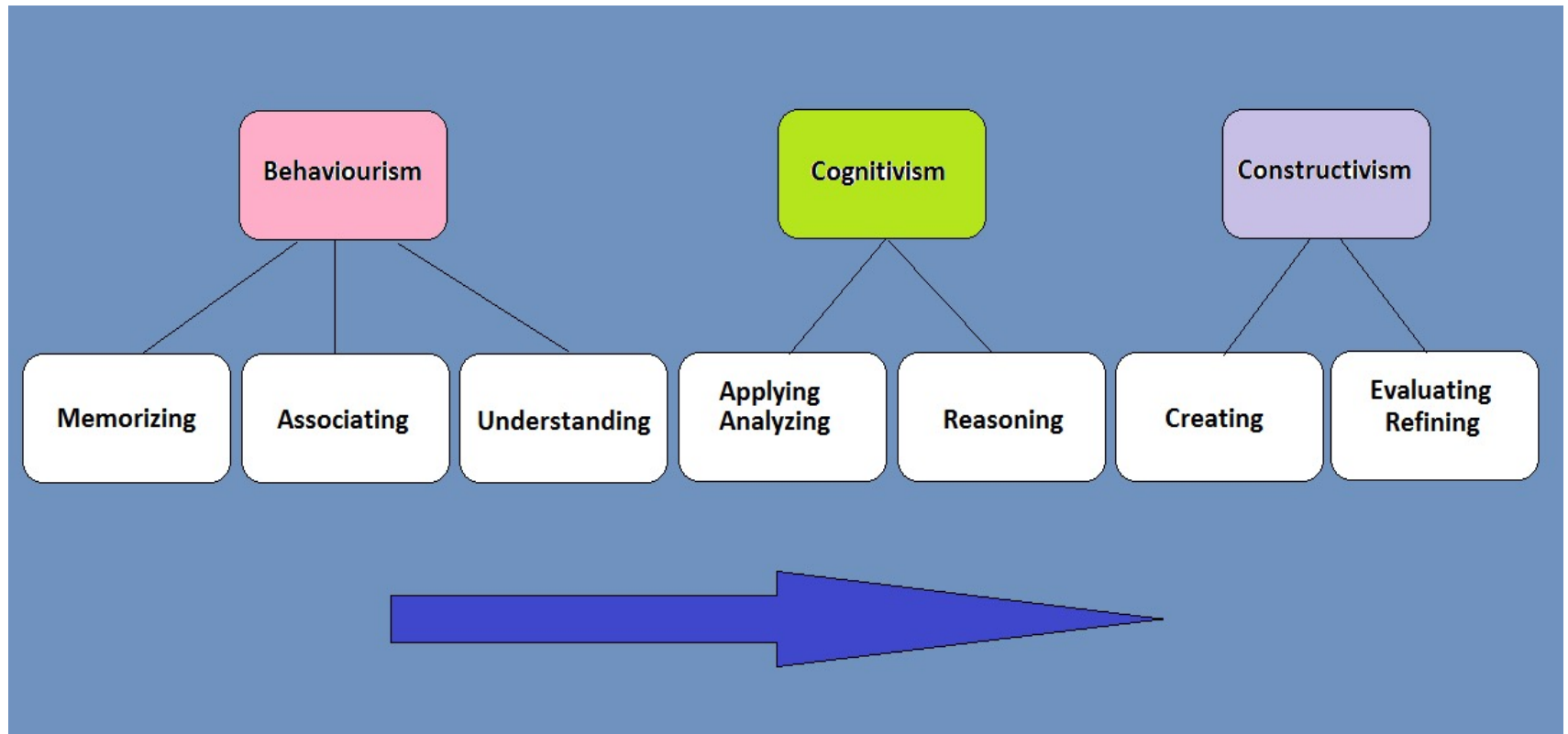
THE CONTINUUM



Ertmer & Newby, 1993



THE CONTINUUM



AUTHORS' ADVICE FOR IDESIGNERS

Ask these questions:

- What is the learning purpose(s)?
- Where do the learners “sit” on the continuum?
- How much mental processing is required?

E.g., remembering facts? Understanding concept? Solving simple problems? Reflecting? Solving problems in ambiguous contexts?...

Finally, bear in mind:

- Overlap between theories
- You guessed it... try not to fixated on merely a single perspective— “Systematic Eclecticism”



QUICK DISCUSSION...

- In groups of 3-4, let us discuss how we can extract elements from each of the big 3 learning theories and apply them in your/a specific field of study.

Consider:

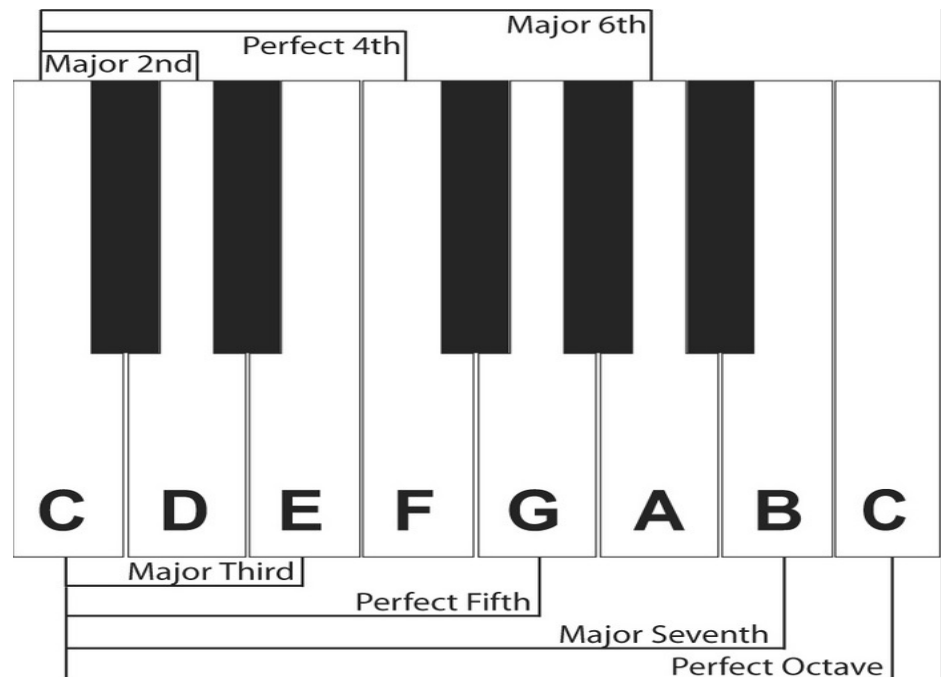
- Is it best to adopt a hybrid design?
- What is the rationale?

1 hypothetical scenario from each group, please...



SOME APPLICATIONS IN MY FIELD (MUSIC EDUCATION)

- Performance markings
/terms
- Music history
- Identifying intervals
(Music theory)
- Ear-training
- Composition
- Piece analysis/interpretation



REFERENCE

- Ertmer, P., & Newby, T. (1993). Behaviorism, cognitivism, constructivism. *Performance Improvement Quarterly*, 6(4), 50-72.

