CO-CONSTRUCTING KNOWLEDGE BETWEEN EDUCATORS AND THEIR STUDENTS: A PEDAGOGICAL APPROACH TO TEACHING AND LEARNING IN THE HE.

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WHAT IS THE BASIS FOR CO-CONSTRUCTION?

- My role as an educator

Working with students from diverse backgrounds

- Relevance of this presentation to supporting teaching and learning (our experience- educator/student)

(how to help teachers/teacher educators/ITT)

WHAT IS CO-CONSTRUCTION OF KNOWLEDGE ?

- Co-constructing knowledge (Constructivist approach)

What research says

We need to create the environment for this to happen

- Pedagogical approaches to developing a constructivist learning experience for students can facilitate equality, diversity and inclusive learning opportunities.

CONSTRUCTIVISM- FOR US AS EDUCATORS

- The EEF (2018) encourages teachers/educators to build on the ideas that students bring to their classrooms and promote self-regulation and thinking skills. These are embodied in constructivist learning and can develop a cognitive learning experience for our students, making it relevant to our modules.
- Constructivism has various lenses as portrayed by Piaget, Vygotsky, Bruner and Ausubel. The common forms of constructivism in our practices focus on Piaget and Vygotsky.

CONSTRUCTIVISM

- Piaget's cognitive constructivism
- Vygotsky socio-cultural constructivism; a form of social interaction

CONSTRUCTIVISM- FOR US AS EDUCATORS

- Intrinsic (personal) and extrinsic (behaviour and environmental) factors Bandura's (1989, 1998) social cognitive theory (SCT).
- Using a combination of assessment frameworks such as modelling and collaborative learning (Major and Mulvihill, 2018; Magaji, 2021) to aid cognition.
- Trainees taking part in constructivist learning- modelling.

NOTE

- Constructivist theories focus attention on the mental models that a learner employs when responding to new information or new problems
- Hartle et al. (2012) four criteria for identifying constructivism: 1) eliciting prior knowledge, 2) creating cognitive dissonance, 3) applying new knowledge with feedback, and 4) reflecting on learning (metacognition).

PEDAGOGICAL APPROACHES TO CONSTRUCTIVISM- 5E INSTRUCTIONAL MODEL

Elicitation: Recall knowledge
Social/cultural capitals
Applications
Building working memory
Cognitive dissonance
Subject knowledge development/audit- areas of conceptual problems
Co-construction/student-led

Step 1: Engagement -problem-solving tasks (areas trainees have conceptual misconceptions)/past/present experiences

Step 2: Exploration- promotes inquiry experience/understand the problem. Adoption of the CREAM strategy to achieve this process

Co-construction with tutor

Step 3: Explanation- communicate what they have learned, concept cartoons, justifying evidence and evaluating etc

Step 4: Elaboration- apply knowledge in other contexts and link to real-life. Used skills gained to improve products, models, analogies, practical work

Step 5: Evaluation- assess what learning has taken place, questions/probing, students' questioning.

BENEFITS TO STUDENTS

- Develop and sustain a culture of inquiry to bridge the gap between science trainee teachers' everyday knowledge and that provided by the university/relevance to their modules.
- The knowledge acquired in this process can be viewed as co-constructed and the knower should have agency and a voice in the process of knowing and the process of learning should be dialogic.
- Publication: Science trainee teachers' experience of outdoor learning and its inclusion in the curriculum by: **Adjani, M**., Jack, C., Konadu-Boadi, A., Nwosu, E. & Magaji, A. (2023).
- Framework versus mindset