Presented by: Curtin Academy
for Curtin Dubai

Acknowledgement

We acknowledge the Traditional

Owners of this Land, the

Nyungar people, and pay respect

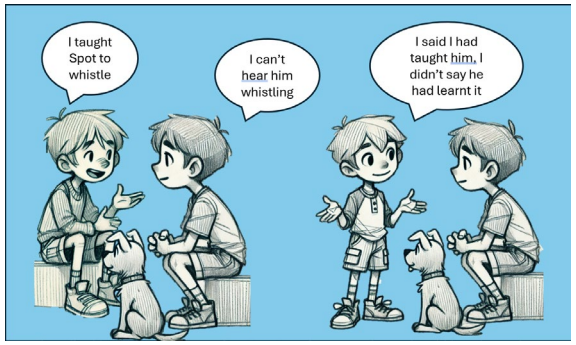
to the Elders of their community

The CURTIN ACADEMY

Curtin ACADEMY

PEOPLE
people-centred
PEDAGOGY
globally-placed
PRACTICE
paradigm-shifters

AGENDA



1. **Welcome**
2. **Professor Dr Rachel Sheffield**
3. **Questions**
4. **Close**

"Education is not the filling of a pail, but the lighting of a fire." —
William Butler Yeats

Quiz. Section A: Learning Goals and Teaching Focus

1. How do you typically approach the design of your lessons?

- A. I design lessons with a focus on clear objectives and measurable outcomes.
- B. I incorporate modelling and encourage students to observe and imitate key behaviours.
- C. I structure lessons around the cognitive processes required for deep understanding.
- D. I focus on hands-on experiences, encouraging students to construct their own knowledge.
- E. I encourage collaboration and use diverse social contexts to build understanding.

2. What is the primary role of the student in your classroom?

- A. To follow instructions, demonstrate learned behaviours, and achieve specified outcomes.
- B. To observe, imitate, and reflect on modelled behaviours.
- C. To actively process and internalize information through structured learning experiences.
- D. To construct knowledge through inquiry and problem-solving.
- E. To co-construct knowledge through interaction with peers and cultural tools.

Curtin ACADEMY
"Making the invisible, visible"

Quiz. Section B: Instructional Strategies

3. How do you typically provide feedback to your students?

- A. I provide immediate feedback to reinforce correct behaviours and correct mistakes.
- B. I provide feedback that helps students understand how well they are imitating the modelled behaviour.
- C. I give feedback that encourages students to reflect on their thought processes and cognitive strategies.
- D. I guide students to reflect on their learning processes and encourage self-assessment.
- E. I promote peer feedback and use group discussions to deepen understanding.

4. How do you encourage students to engage with the material?

A. I use rewards, such as grades and recognition, to motivate students to achieve desired behaviours.

B. I use demonstrations and role models to motivate students to learn through observation.

C. I design tasks that challenge students' cognitive abilities and help them build mental frameworks.

D. I encourage students to explore, ask questions, and develop their own understanding.

E. I foster group activities that promote collective problem-solving and shared learning.

Quiz. Section C: Role of the Teacher and Learner

5. How do you view your role as an educator?

- A. I see myself as a controller of the learning environment, using stimuli to elicit desired responses.
- B. I see myself as a model, demonstrating behaviours that students should emulate.
- C. I see myself as a facilitator, helping students organize and structure their cognitive processes.
- D. I see myself as a guide, supporting students as they actively construct their own knowledge.
- E. I see myself as a mentor, scaffolding learning within social interactions and cultural tools.

6. How do your students typically approach learning in your class?

A. Students respond to clear directions and perform behaviours that are measured and reinforced.

B. Students observe, imitate, and model their learning after others.

C. Students focus on mastering content by organizing information and engaging in cognitive tasks.

D. Students actively engage with the material, solving problems and constructing knowledge.

E. Students work together in groups, using their collective knowledge and experience to solve problems.

Curtin ACADEMY
"Making the invisible, visible"

Quiz. Section D: Assessment and Motivation

7. How do you assess student learning?

- A. I assess students based on their ability to demonstrate specific, observable behaviors or skills.
- B. I assess students based on their ability to replicate modelled behaviours and demonstrate improvement.
- C. I assess students based on their understanding of key concepts and their ability to apply cognitive strategies.
- D. I assess students based on their ability to solve problems and reflect on their learning processes.
- E. I assess students based on their participation in group work and their ability to collaborate effectively.

8. What motivates your students to succeed in your class?

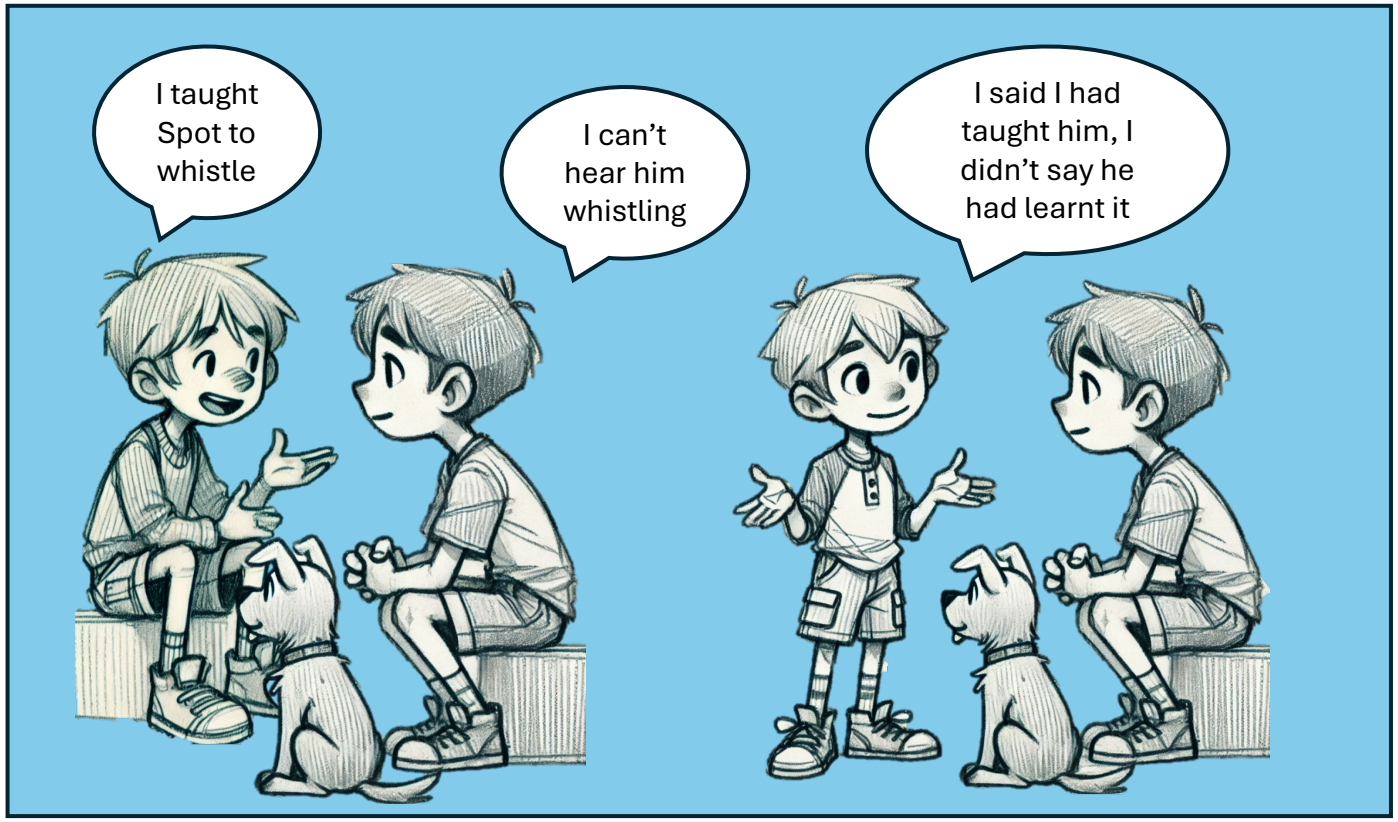
A. External rewards such as grades, praise, or recognition.

B. The desire to match or exceed the performance of peers and role models.

C. The challenge of mastering difficult concepts and cognitive tasks.

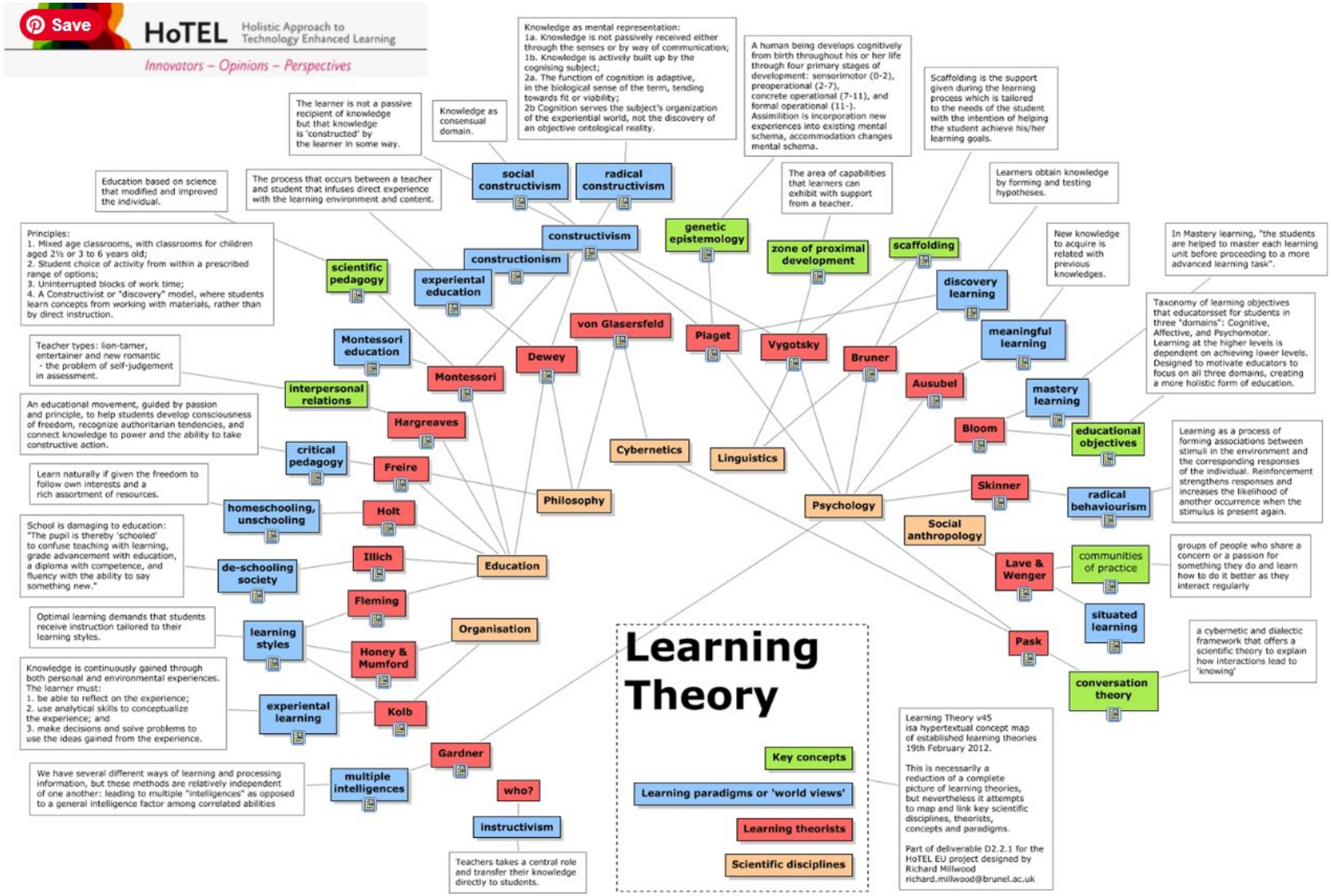
D. The intrinsic reward of discovering new knowledge and solving problems.

E. The satisfaction of working together to achieve common goals and support each other.



Teaching Spot to whistle

In order to teach
we need to understand
how students learn



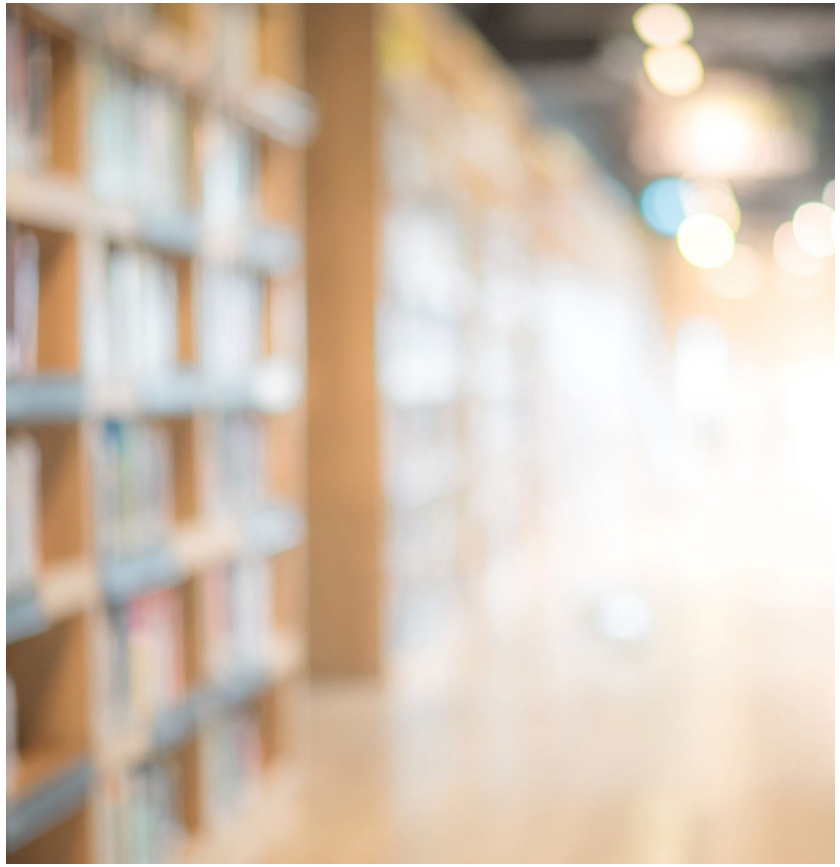
Curtin ACADEMY
"Making the invisible, visible"

Transmissive Instructional Approach

Students do not come to classrooms as “empty vessels” to be filled in. (Duit 2009)

The transmissive instructional model is a teacher-centred teaching and learning model in which the teacher’s role is to design lessons aimed at pre-determined goals and to present knowledge and skills in a pre-determined order, and students’ tasks are to passively acquire teacher-specified knowledge and skills (Slavin 2012).

A fairly structured learning environment is required.



Behaviourism

Skinner

Behaviourism

Principles:
Behaviourism defines learning as observable changes in behaviour resulting from the interaction between stimuli and responses. The focus is on measurable behaviours, with no consideration of internal thought processes or emotions. Reinforcement (positive or negative) and punishment shape behaviour.

Role of the Teacher:
The teacher plays a highly active role, controlling the learning environment to ensure desired behaviours are demonstrated at the appropriate time. Teachers design reinforcement schedules and manage stimuli to elicit the target behaviour from students.

Role of the Learner:
The learner is seen as a respondent to environmental stimuli. The primary task of the learner is to respond appropriately to these stimuli, with little focus on internal cognitive processes.

Behaviourism
Learning Focus:

Behaviourism manifests in educational environments through practices such as

- Direct instruction,
- Rewards for high performance (grades, recognition), and
- Penalties for undesired behaviours (scolding, academic probation).
- Classroom management strategies, reinforcement schedules, and feedback are central components.

Social Cognitive Theory

Principles:
Social Cognitive Theory expands behaviourism to include the role of observational learning, where behaviour is influenced by watching others. Motivation, self-efficacy, and self-regulation are important cognitive elements. Learners observe and model behaviours based on the perceived consequences of those behaviours in others.

Role of the Teacher:
The teacher strategically models desired behaviours and controls the environment to reinforce both observational and direct learning. Teachers optimize opportunities for imitation and ensure that learners observe the consequences of desirable and undesirable behaviours.

Role of the Learner:
Learners are more active, engaging in observational learning by paying attention to demonstrations of behaviours. They retain, reproduce, and are motivated to perform these behaviours based on observed outcomes.

Social Cognitive Theory Learning Focus:

This theory is often used in skill-based teaching, emphasizing

- role modelling,
- imitation, and
- demonstration.
- classroom management, where strategic interactions between learners can shape behaviour.

- Key instructional strategies include
- goal setting and
- reinforcement of behaviours learned through observation.

Cognitive Learning Theory

Principles:
Cognitive Learning Theory focuses on internal mental processes, such as how information is encoded, processed, and stored in memory. It emphasizes meaningful learning and the connection of new knowledge with prior knowledge to create strong cognitive structures.

Role of the Teacher:
Teachers play an active role in organizing and structuring content to ensure learners can process and retain information. Concepts are presented incrementally, from foundational to more complex, with sufficient repetition and opportunities for recall to ensure long-term retention.

Role of the Learner:
Learners are active participants who process information and build mental representations (schemas) of knowledge. They engage in higher-order cognitive tasks and work to organize new knowledge in a meaningful way.

Cognitive Learning Theory. Learning Focus:

Instructional practices include
the use of memory aids,

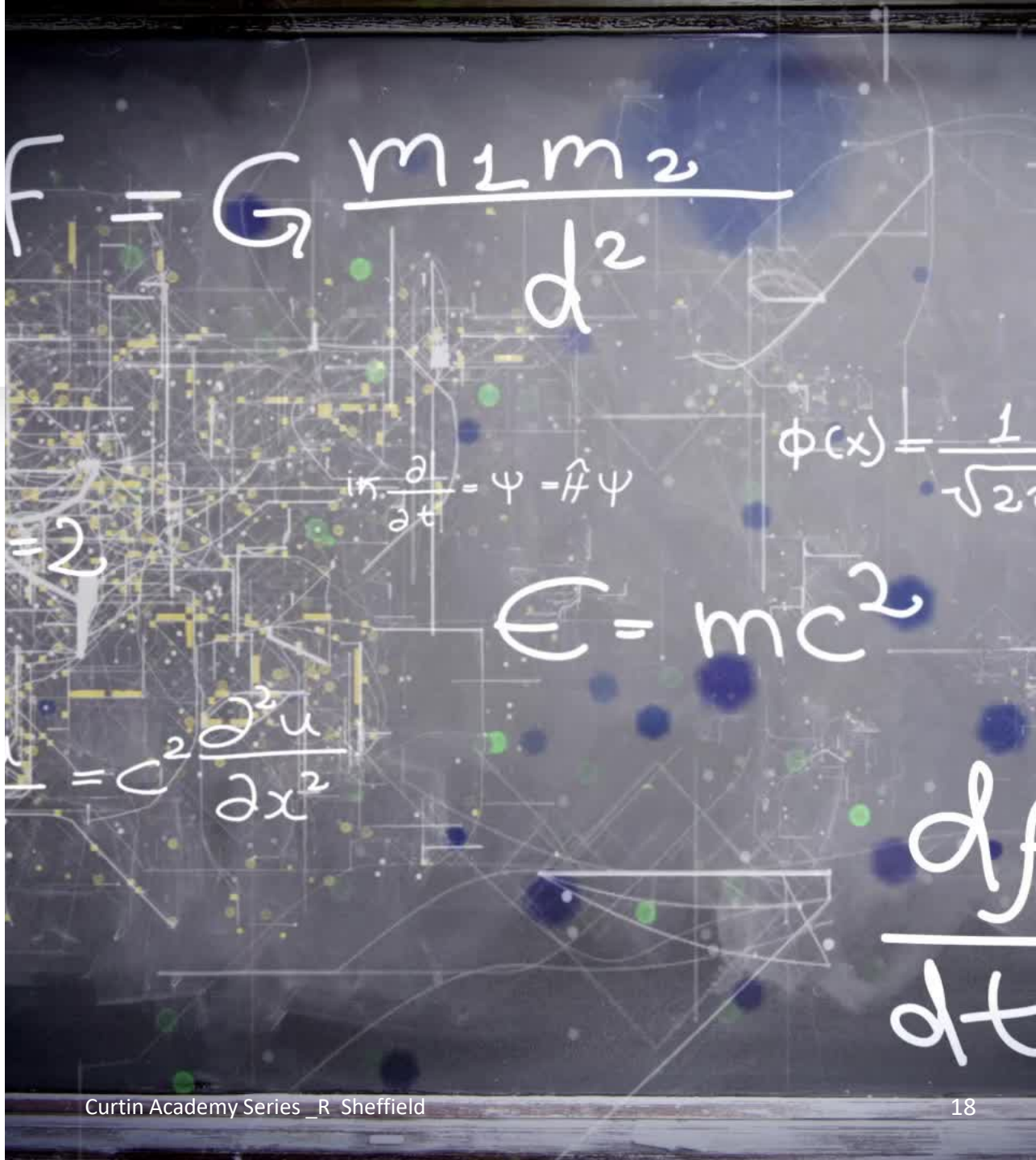
- advanced organizers, and
- opportunities
- for students to connect new information to prior knowledge.

Strategies such as

- concept mapping and
- meaningful learning are used to enhance long-term retention.

Constructivist Theory

- “Essential functions of the mind are formed by developing a foundation consisting of understanding and innovation and constructing reality” (Piaget, 1971, p. 27).



Constructivist Theorists	Contribution
Jean Piaget (1896-1980) Psychologist	Cognitive stages, schema, assimilation and accommodation
Jerome Bruner (1915- 2016) Psychologist & Educator	proposed a 3-tiered system of internal representations: enactive (action-based), iconic (image-based), and symbolic (language-based).
Lev Vygotsky (1896- 1934) Educational Psychologist	Social cognition, collaborative learning and the zone of proximal development.
John Dewey (1859 -1952) Educational Psychologist, Philosopher	children “learn by doing.” and the Dewey Decimal System

Constructivist instructional Approach

The constructivist instructional model works on the principle that knowledge is personal, social and cultural, and that knowledge is actively created by the learner, and not passively received from the environment.

This model has its origins in the individual, conceptual view of learning based on child development theories of 20th century Swiss developmental psychologist Jean Piaget (1936). He viewed learning as arising from children's acting within their world.

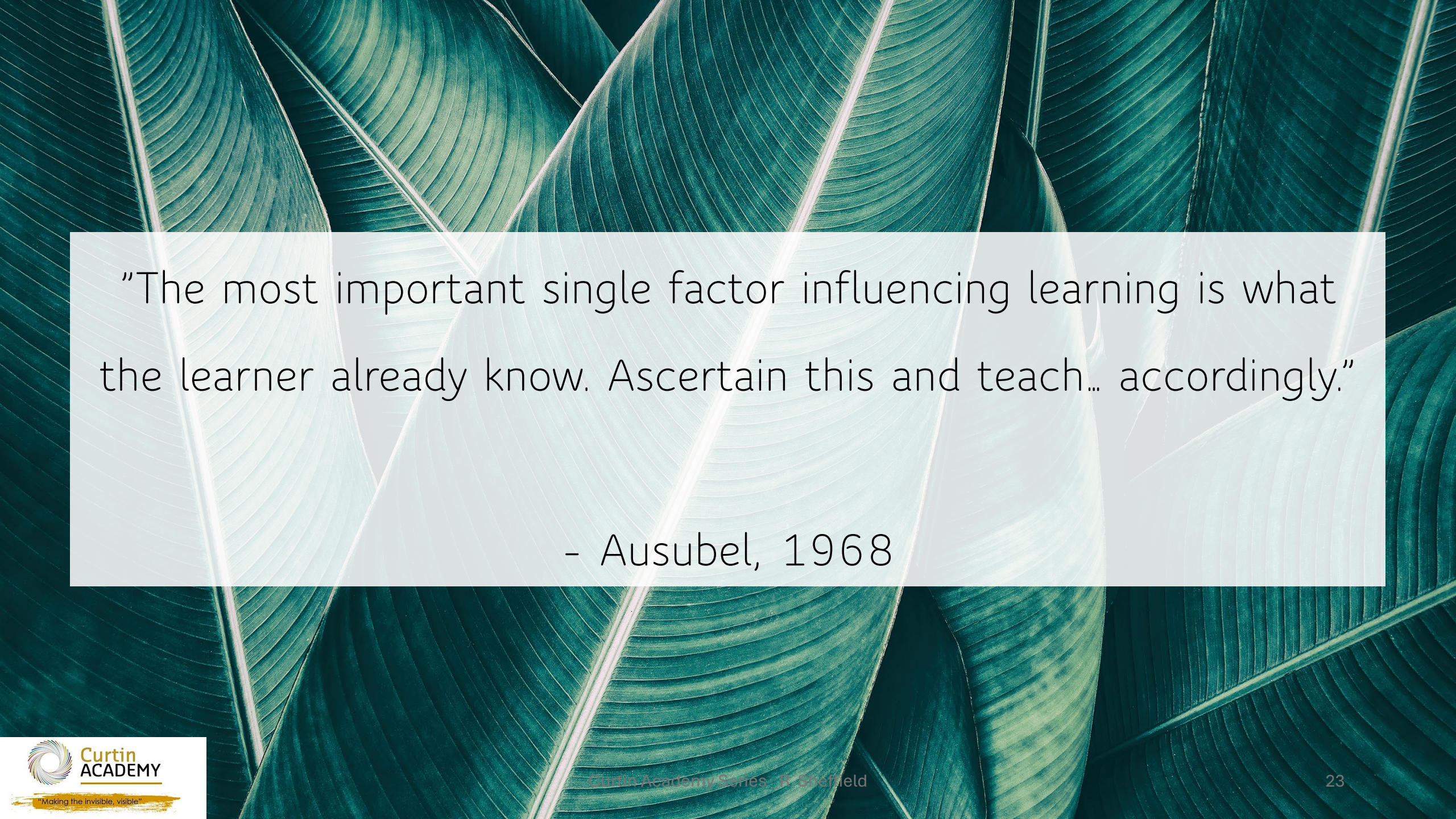
Features of a constructivist view

Learning outcomes depend not only on the learning environment but also on the knowledge of the learner.
Learning involves the construction of meaning.
The construction of meaning is a continuous and active process.
There are identifiable patterns in the types of understanding student construct due to shared experiences with the world, and to cultural influences through language.
Knowledge promoted in the science classroom is evaluated, and may be accepted to varying degrees.
Learners have the final responsibility for their own learning.

Developmental Levels

Stage One Sensorimotor	**Birth – 2 Years**	
Stage Two Pre-Operational	**2 Years – 6 Years**	
Stage Three Concrete Operational	6 Years - Teen	Reversibility, classification (number i.e., 6 objects), addition, subtraction, division, multiplication and conservation.
Stage Four Formal Operational	Typically, 12+	Combinational reasoning (systematic testing), proportional reasoning, hypothetical and deductive reasoning.

Curtin ACADEMY
"Making the invisible, visible"



"The most important single factor influencing learning is what the learner already know. Ascertain this and teach… accordingly."

- Ausubel, 1968

Curtin ACADEMY
"Making the invisible, visible"

Inquiry-based learning

Problem-based learning

Co-operative learning

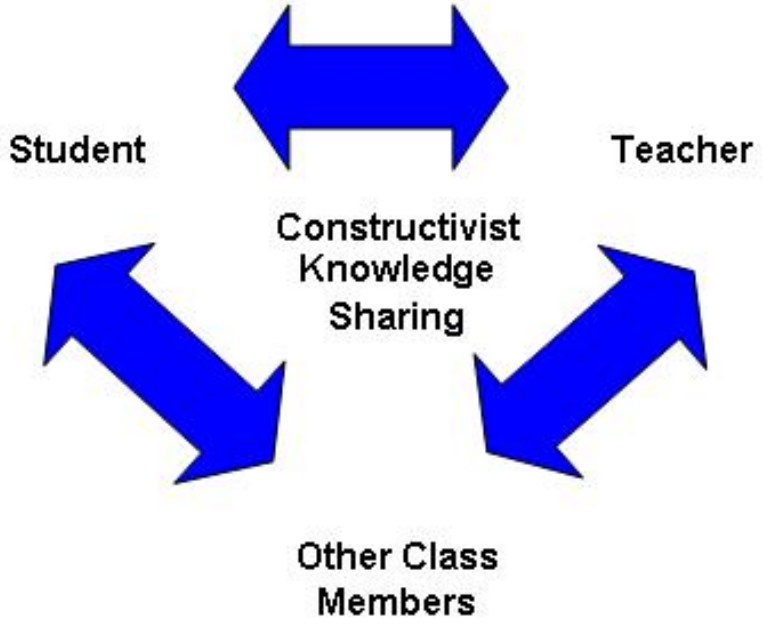
Autonomous learning

Script-based learning

Curtin ACADEMY
"Making the invisible, visible"

Social Constructivist Perspectives

A **social constructivist** position focusses our attention on the social processes operating in the classroom, by which a teacher promotes a community in which they **co-construct** knowledge with students.

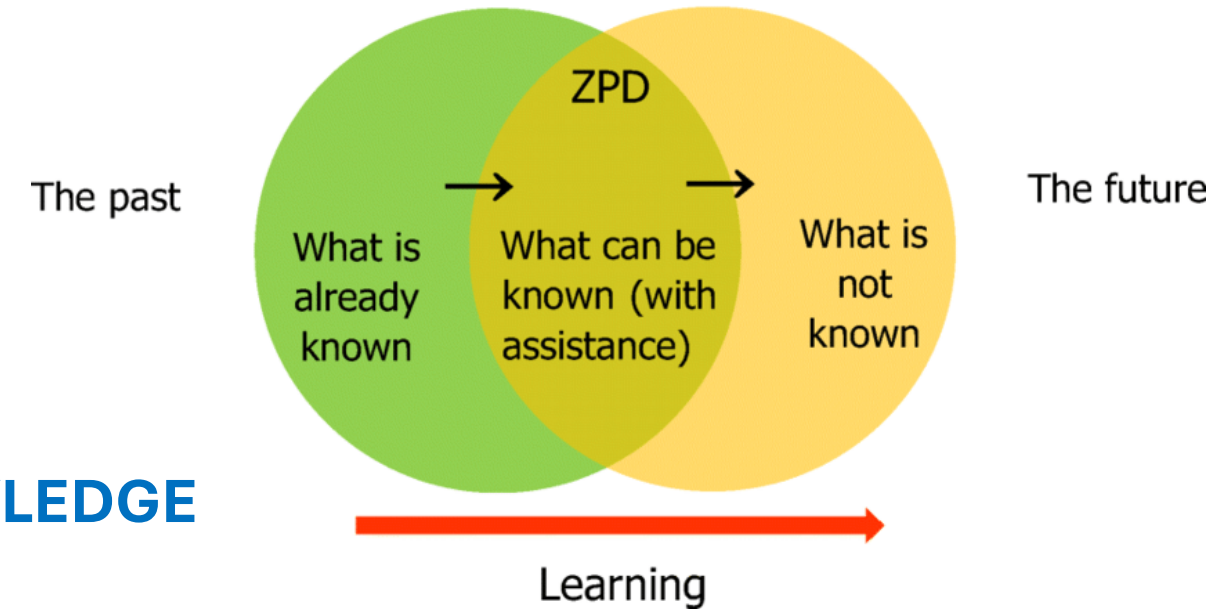


What is the socio-constructivist view of the teacher?

- Operate with the classrooms as much as with individual students
- Set up conditions for high level of discussion with the class through engaging and challenging activities
- The activities can take place through scaffolding through language and the ideas learners have access to
- Promote conditions conducive for active sharing and critique of ideas
- Develop a `community of inquiry'

- The Zone of Proximal Development is defined as the space between what a learner can do without assistance and what a learner can do with adult guidance or in collaboration with more capable peers.

Vygotsky's zone of proximal development (ZPD)



PRIOR KNOWLEDGE

- Students come to learning with preformed ideas that help them explain the world around them
- These ideas make sense and are logical to the student and are usually strongly held
- These ideas are referred to as misconceptions, preconceptions, alternative conceptions, alternative frameworks, pre- instructional conceptions
- Where are they getting these ideas from?

Conceptual change views of learning

Conceptual change view of learning are underpinned by the idea that the learning involves complex changes to students' knowledge from alternate conceptions to scientific conceptions.

Teaching a concept is a process of fundamental change.

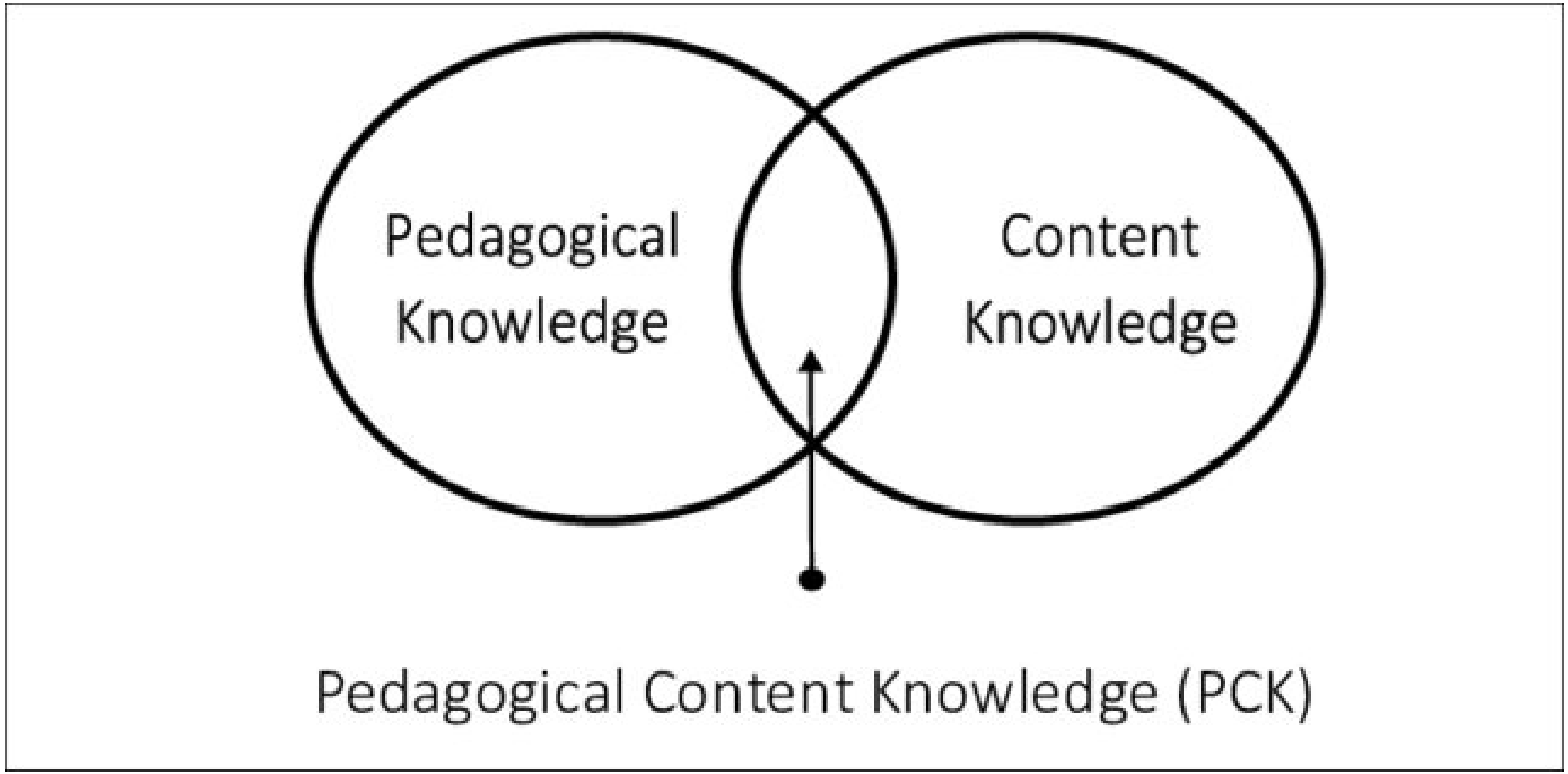
Students can use a number of conceptions together to give different perspectives on the **same** event.

(Posner, Strike, Hewson & Gertzog, 1982).

Teaching

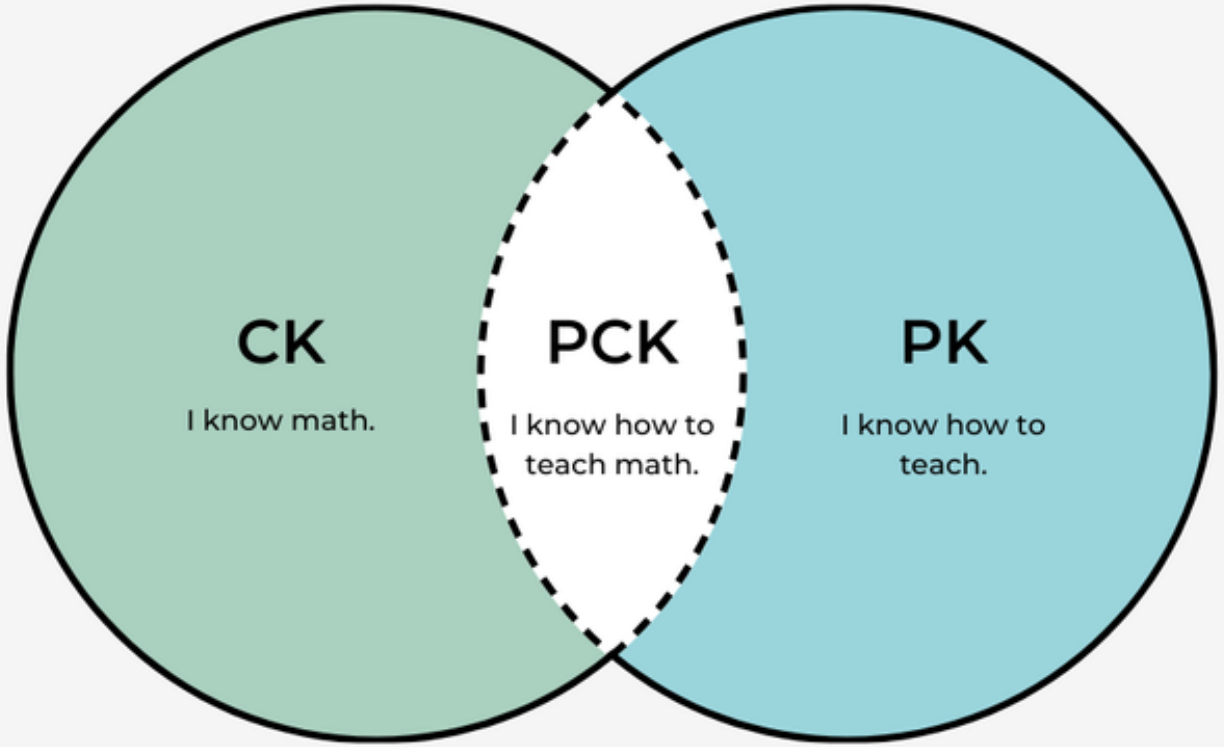
An image of teaching

Here are two images representing a classroom teaching scene. Let me know if you'd like any adjustments or different details added!



Shulman (1986)

Pedagogical Content Knowledge



Andragogy


Need to know
Self-concept
Motivation
Andragogy
principles according to Knowles
Experience
Orientation
Disposition

Pedagog Vs Andragog

Knowles made an important distinction between a pedagog and an andragog.

- A pedagog, according to Knowles, would want to keep the learner dependent on the teacher, whereas
- an andragog would encourage the learner to become autonomous in the desire for further inquiry

(as cited in Levitt, 1979, p. 53).

Quiz. Section D: Assessment and Motivation

Interpretation: Once you complete the survey, tally your responses to see which learning theory your teaching most closely aligns with:

- **Behaviourism:** Most of your answers fall under option A.
- **Social Cognitive Theory:** Most of your answers fall under option B.
- **Cognitive Learning Theory:** Most of your answers fall under option C.
- **Constructivism:** Most of your answers fall under option D.
- **Social Constructivism:** Most of your answers fall under option E.

Teaching

- The focus is on creating an environment where students are engaged and motivated to learn. Key elements include:

1.Active Learning:

2.Classroom Dynamics:

3.Assessment and Feedback:

4.Teaching Methods:

5.Reflective Practice:

Active Learning

- **Engagement through Participation**: Active learning emphasizes the need for students to be actively involved in their learning process.

- **Hands-on Activities**: Students are more likely to retain knowledge when they engage in hands-on activities, such as experiments, practical tasks, or simulations.

- **Problem-Solving and Critical Thinking**: Active learning strategies, such as case studies or problem-based learning (PBL), enhance students' ability to solve real-world problems.

- **Retention of Knowledge**: process of interacting with content, either through peer discussions or self-reflection, helps deepen their understanding and reinforces knowledge retention.

Classroom Dynamics

1. **Mutual Respect**: Establishing a culture of respect among students and between students and teachers is fundamental.

2. **Community Building**: Strategies to foster a sense of community within the classroom are highlighted, such as collaborative projects and group discussions.

3. **Participation Encouragement**: Techniques to ensure all students are involved in the learning process are essential. This might include varied questioning techniques, structured group work, or peer-to-peer teaching sessions.

4. **Responsive Teaching**: The ability of educators to adapt their teaching style in response to the dynamics of the classroom is vital.

5. **Conflict Resolution**: Effective management of conflicts and disagreements within the classroom is also discussed.

Assessment

- **Formative Assessment**:. Formative assessments provide teachers and students with real-time feedback, allowing for adjustments in teaching strategies and student approaches to learning.

- **Constructive Feedback**: Providing timely, actionable, and constructive feedback is a core element in supporting student development. Feedback should focus on guiding students toward improvement rather than just highlighting mistakes.

- **Alignment with Learning Objectives**: Assessments should be clearly aligned with the intended learning outcomes.

- **Self-Assessment and Reflection**: Encouraging students to assess their own work and reflect on their progress fosters independent learning and critical thinking.

- **Diverse Assessment Methods**: Using a variety of assessment methods, such as quizzes, projects, presentations, and peer reviews, to cater to different learning styles and provide a comprehensive evaluation of student performance.

Teaching Methods

•**Variety of Methods**: to accommodate different learning styles and preferences. This includes lectures, discussions, case studies, group work, and hands-on activities.

•**Student-Centered Learning**: Teaching methods should focus on the needs of the students prioritize active student involvement, such as problem-based learning and collaborative projects

•**Technology Integration**: The use of technology in the classroom is presented as a way to enhance learning. Tools like multimedia presentations, online resources, and educational software can help facilitate learning and make the material more accessible.

•**Differentiation**: Teachers are encouraged to differentiate adjusting the level of complexity, the pacing of lessons, and the methods used to ensure all students can achieve the learning objectives.

•**Lecture Efficiency**: While lectures remain a common teaching method need to make lectures more interactive and engaging. This can be done by integrating questions, encouraging discussion, and breaking up lectures with activities or group tasks.

•**Experiential Learning**: Hands-on, experiential learning methods, such as internships, simulations, and real-world projects, are highlighted as effective ways to connect theory to practice and deepen understanding.

Reflection 1

•**Continuous Self-Assessment**: Teachers are encouraged to critically analyze their performance to identify strengths and areas for improvement

•**Professional Growth**: By engaging in reflective practice, educators can continuously improve their skills and adapt to new teaching challenges.

•**Adapting to Student Needs**: Reflective practice helps teachers adjust their teaching strategies to better meet the diverse needs of their students.

•**Use of Feedback**: Incorporating external perspectives can provide valuable insights that may not be immediately apparent through self-reflection alone.

Reflection 2

•**Goal Setting**: Reflective practitioners set specific, actionable goals for their teaching based on their reflections.

•**The Reflective Cycle**: Teachers are encouraged to follow a structured reflective process, such as Gibbs' Reflective Cycle or Kolb's Experiential Learning Cycle.

•**Documentation of Reflection**: Keeping a reflective journal or portfolio helps teachers document their thoughts, experiences, and progress.

We teach a subject not to produce little living librarians on that subject, but rather to get a student to think … for himself, to consider matters … to take part in the process of knowledge-getting. Knowing is a process, not a product.

Jerome Bruner
Toward a Theory of Instruction

Bruner's theory

Bruner developed a model for the way children turn experiences into knowledge

The 3 stages of the model is;

1. Enactive mode – children represent and understand using physical actions. They act out experiences to learn & remember
2. Iconic – children will use one thing to represent something else or create their own images
3. Symbolic – children are able to represent and understand the world round them using words & ideas. They don't need to act out or use objects when expressing experience

Baker, B. Et Al, 2102:321