



សាកលវិទ្យាល័យ វេស្ទឺន Western University

Topic: Learning and Cognition in the Content Area

Subject: Education Psychology

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OUR TEAM

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INSPIRING QUESTIONS

- 1. How do cognitive processes involved in knowledge differ between expert knowledge and pedagogical content knowledge?**
 - 2. How does writing help students understand and remember what they learn?**
 - 3. What can teachers do to help students understand math concepts better?**
 - 4. What teaching methods are most effective for teaching science?**
 - 5. What is social study and why is social study important?**
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CONTENT

1. Expert knowledge and Pedagogical Content knowledge

2. Reading

3. Writing

4. Mathematic

5. Science

6. Social Studies

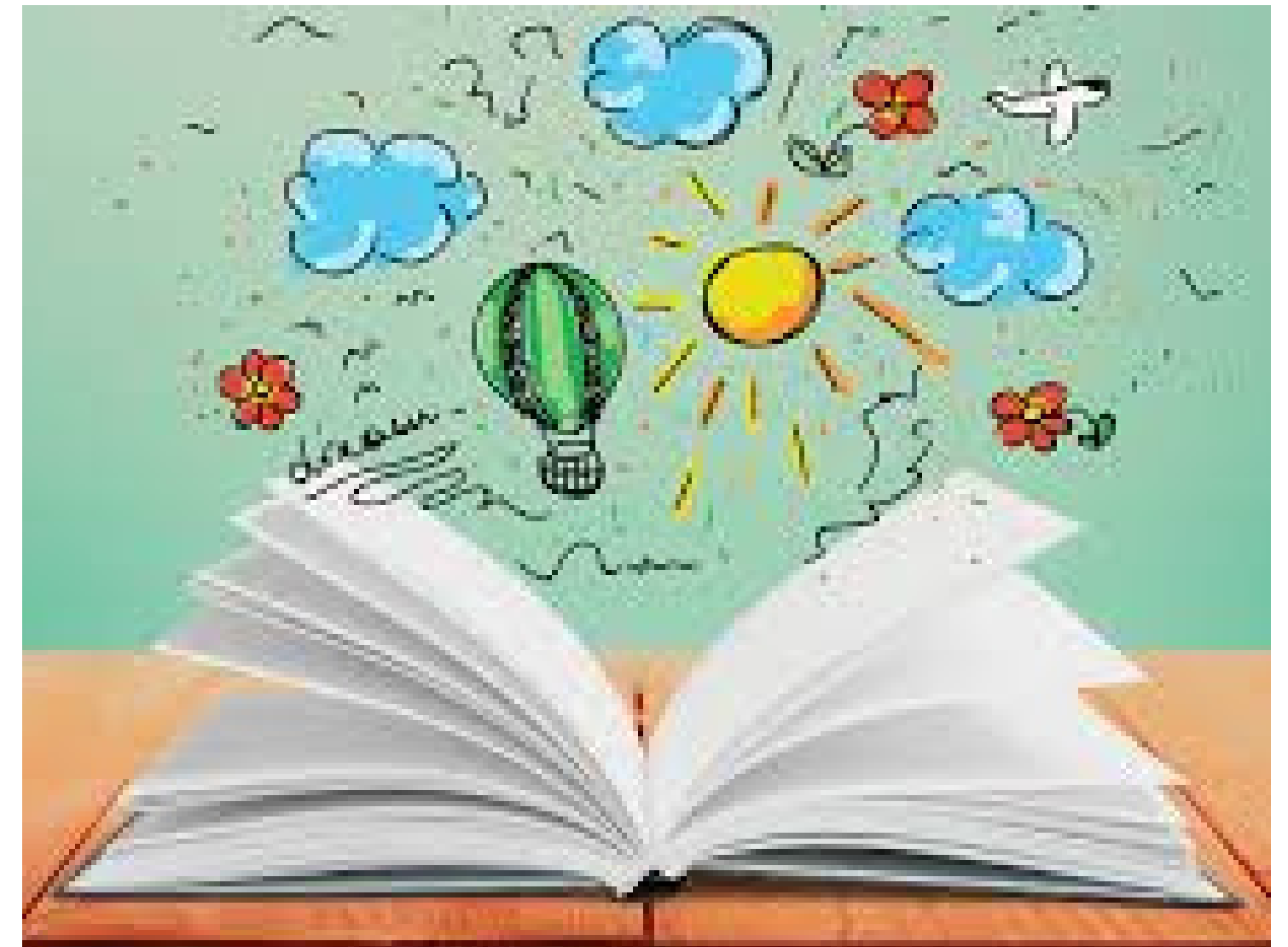
I. EXPERT KNOWLEDGE AND PEDAGOGICAL CONTENT KNOWLEDGE

Expert knowledge Also called subject matter knowledge; means excellent knowledge about the content of a particular discipline. **Pedagogical content knowledge** Knowledge about how to effectively teach a particular discipline.



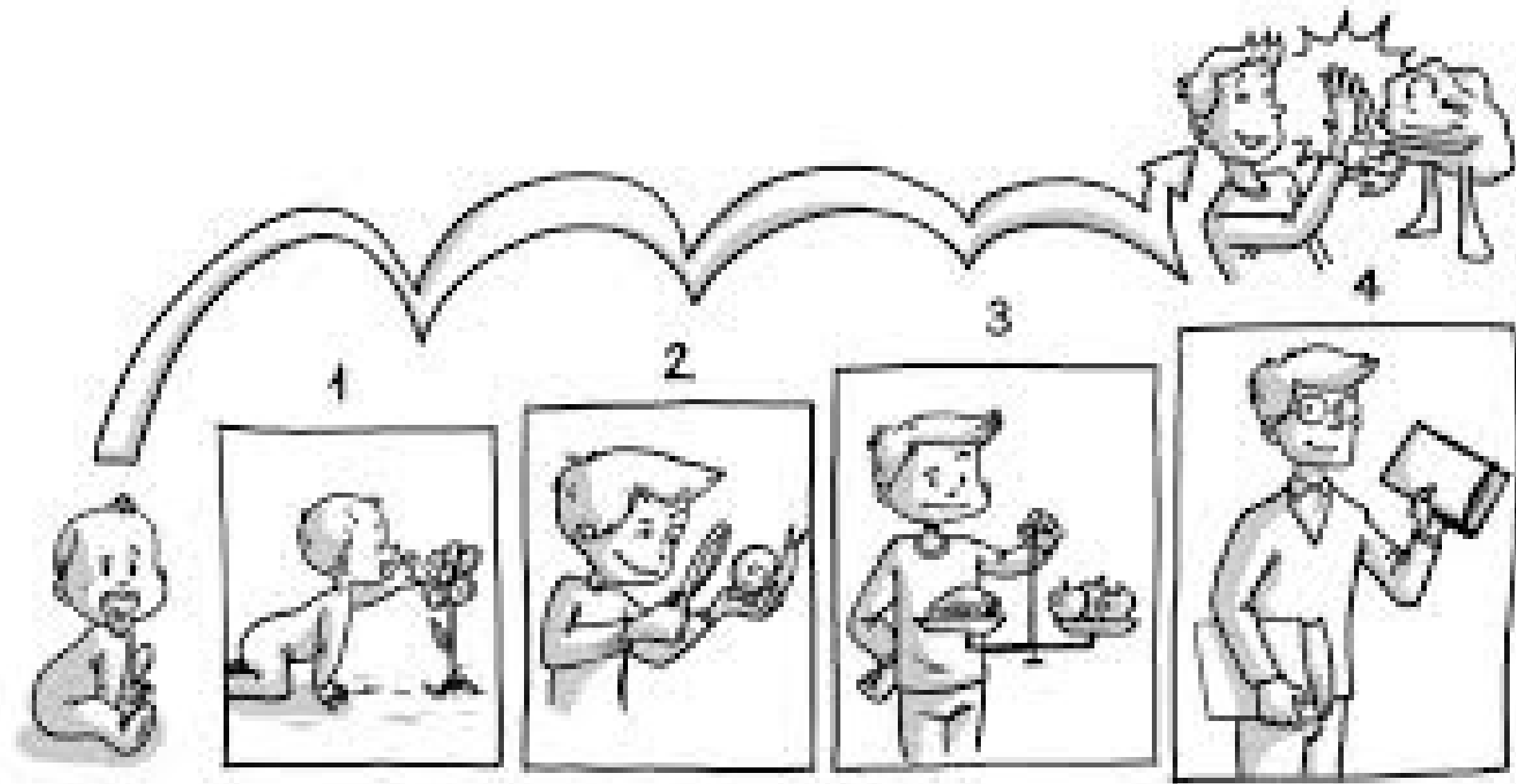
2. READING

- **A developmental model of reading**
- **Approaches to Reading**
- **Cognitive Approaches**
- **Social Constructivist Approaches**



A DEVELOPMENTAL MODEL OF READING

- **Stage 0 (Birth to First Grade):** Prereading
- **Stage 1(First and Second Grade):** Initial reading
- **Stage 2(Second and Third Grade):** Conformation
- **Stage 3(Fourth to Eighth Grade):** Learning the new
- **Stage 4(High School):** Multiple Viewpoints



APPROACHES TO READING

Phonics approach: An approach that emphasizes that reading instruction should teach phonics and its basic rules for translating written symbols into sounds and that early reading instruction should use simplified materials.

Whole-language approach: An approach that stresses that reading instruction should parallel children's natural language learning and that reading materials should be whole and meaningful.

COGNITIVE APPROACHES

- **Decoding and Comprehension:** Good readers recognize words quickly and understand their meanings.
- **Prior Knowledge:** What students already know about a topic helps them understand and remember what they read.
- **Automaticity and Fluency:** Fluent readers process words quickly, leaving more mental energy for understanding sentences and paragraphs.
- **Expert-Reading Strategies:** Expert readers use these strategies naturally, and teachers should guide students to develop these skills to become better readers.

SOCIAL CONSTRUCTIVIST APPROACHES

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1

Social Context in Reading: Reading isn't just about individual understanding; it's also shaped by social interactions.

2

Reciprocal Teaching: This is a strategy where teachers first model reading strategies (like summarizing, questioning, clarifying, and predicting) and then students practice these strategies.

3

Family and Community Connections: Families and communities also play a big role in children's reading development. Students from low-income families often have less exposure to language and books at home, which can put them at a disadvantage.

Three Little pigs



3. WRITING

1. **Development Changes**
 2. **Cognitive Approaches**
 3. **Social Constructivist Approaches**
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1.DEVELOPMENT CHANGES

It's talking about how child's development in writing, spelling, and reading.

2. COGNITIVE APPROACHES

Cognitive approaches focus on understanding and strategies in writing, similar to reading.

1.Planning : Outlining and Organizing ideas

2.Problem Solving: grammar, idea, structure

3.Revising:

4.Metacognition and strategies: Prewriting, Planning, revising, editing, Summarization, Sentence combining

3. SOCIAL CONSTRUCTIVIST APPROACHES

Social constructivist approaches emphasizes that writing is best understood as being culturally embedded and socially constructed.

3.1/ The Social Context of Writing:

Understanding author-reader relationship and learn to recognize it.

3.2/ Meaningful Writing and Student-Teacher Writing Conferences:

Students' writing should include opportunities to create "real" texts.

3.3/ Peer Collaboration and Editing:

Group work and Editing peers' work.

3.4/ School-Community Connections:

Connecting classroom experiences with outside world enriches writing and inviting local authors to share their experiences.

4. Mathematics

What are some development changes in the way children think about mathematics and their abilities at different grades levels?

Development change

- **Early numeracy skills**
- **Problem solving skills**
- **Cognitive development**
- **Motivation and Attitude**

Mathematics

- **Early numeracy skills**

Children begin to develop basic numeracy skills, such as counting, recognizing numbers, and understanding simple arithmetic operations.

Mathematics

- **Problem-solving skills**

Developmental changes also include the ability to apply mathematical knowledge to solve real-world problems, which requires critical thinking and reasoning.

Mathematics

- **Cognitive development**

Theories such as Piaget's stages of cognitive development explain how children's thinking evolves, impacting their ability to grasp more complex mathematical ideas.

Mathematics

- **Motivation and Attitude**

Students' attitudes towards mathematics and their motivation to learn can change over time, influenced by factors such as teaching methods, parental support, and personal experiences.

5. Science

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- **What are key ideas in educating students about science?**
- **What are some constructivist strategies for teaching science?**

- **Science Education**

Scientists typically engage in certain kinds of thinking behavior.

- **Constructivist Teaching Strategies**

What is Constructivist Teaching Strategies ?

Constructivist teaching strategies in science focus on engaging students in active learning, where they build their own understanding through exploration, inquiry, and reflection.

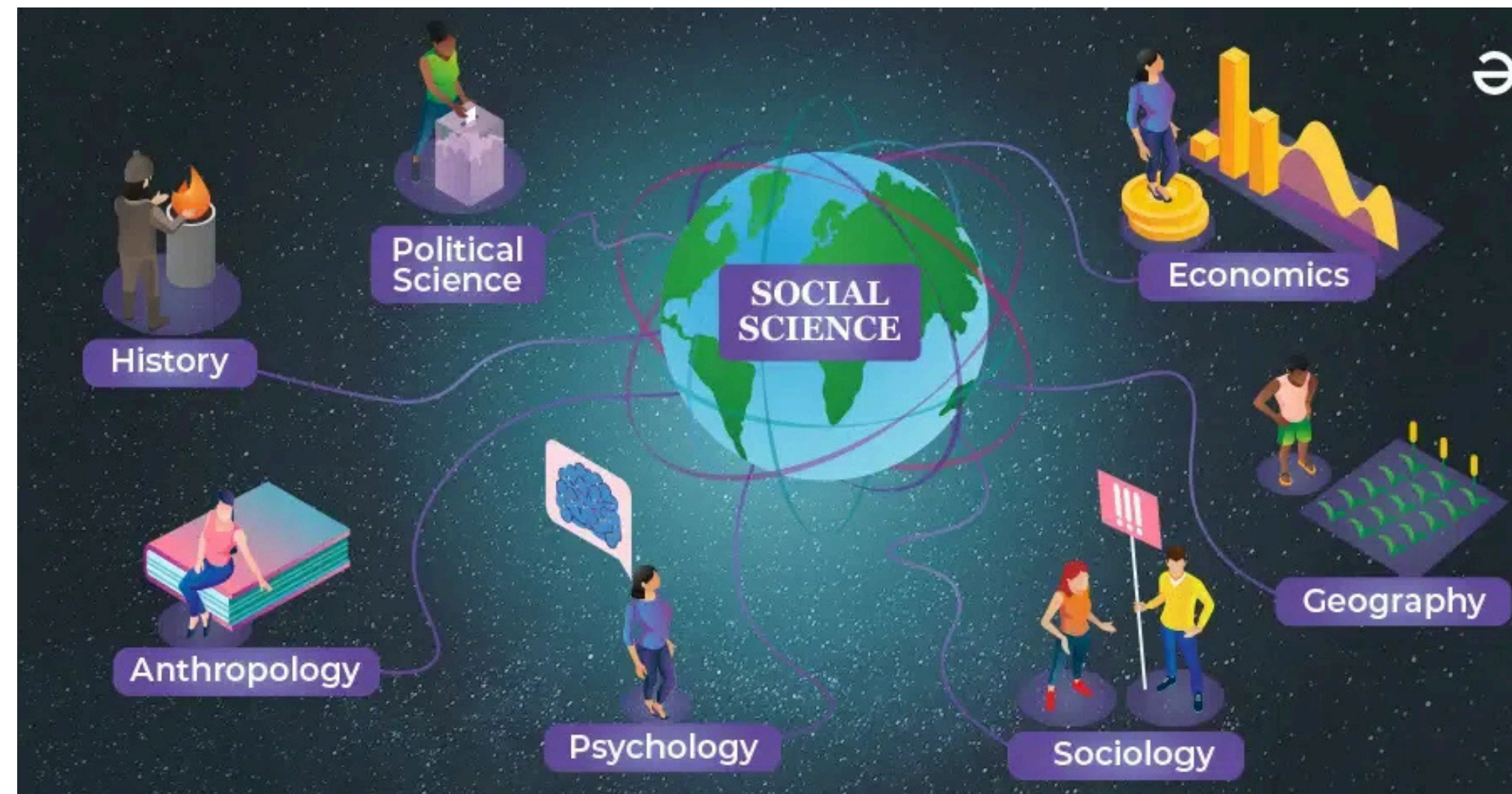
Here are some key strategies:

- **Inquiry-Based learning**
- **Collaborative learning**
- **Real-World Connection**
- **Reflective thinking**

6.Social Studies

Social study is a part of a school or college curriculum concerned with the study of social relationships and the functioning of society and a broad field of study that focuses on human relationship and interactions. It encompasses a variety of subjects, including:

What is social study ?



6.Social Studies

Why is social study important ?

- Understanding our world
- Developing critical thinking skills
- Becoming informed citizens
- Appreciating diversity

To Wrap Up

- **We know about Expert Knowledge and Pedagogical knowledge!**
- **How writing & reading help! students to learn effectively**
- **How math and science promote students learn critically!**
- **How social study is important in our daily life!**



Thank
you

