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Spring 2024

School of Education

Lecture 3

C-EDUC2: Technology for Teaching and Learning 1

Dexter M. Balajadia, LPT, Ph.D.

Professor / Lecturer

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Lecture 3

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Essential Theories and Principles of Educational Technology

Image 1: **How smart classrooms are revolutionizing education in Makati City (Source: Doctolero, 2024: Online)**

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Proficient Technology for Education

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How do we ensure that educational media served its purpose?

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Looking back at LECTURE 2

Image 2: **The Importance of Technology in Philippine Education (Source: ChildHope Philippines, 2021: Online)**

Optimizing teaching and learning requires under-standing ICT policies and concerns. Access, privacy, security, and digital literacy must be balanced to maximize technology's transformational power. Collaboration and informed tactics may help educators develop inclusive, innovative, and safe learning environments that prepare students for digital success.

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Lecture Objectives

1. To discuss theories of experiential learning that are applied in technology-driven teaching-learning models; and,
2. To Explain technology-based principles to enhance the teaching and learning process.

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Topic 1

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Theories of Experiential Learning

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1. Theories of Experiential Learning

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Who do you think learned better?

Amy discovered from the video she watched how a caterpillar transformed into a beautiful butterfly.

Ana regularly visited the garden for two weeks and discovered how caterpillars hatched from eggs, ate leaves, weaved their cocoons, and came out as butterflies.

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1. Theories of Experiential Learning

Lecture and discussion

Maps, graphs, and charts

Pictures and videos

Exhibits

LEARNING

… is best with REAL EXPERIENCES.

Field trips

Demonstrations

Simulations

Modelling

Practical work

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1. Theories of Experiential Learning

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ABSTRACT

Follow through with discussion and verbal explanation.

How do we technologize LEARNING?

CREATE

CONCRETE

Begin teaching with PRACTICAL tools and HANDS-ON activities.

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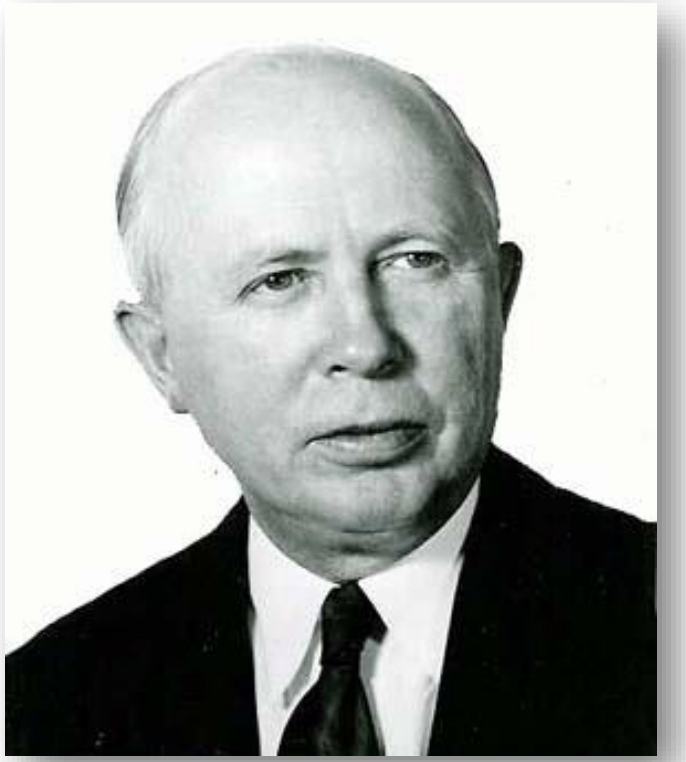

Image 3: **The Cone of Experience by Edgar Dale (Source: Kilem, 2016: Online)**

Edgar Dale (1900-1985)

- Professor of Education at Ohio State University (USA)
- Most notable contributions were on audio-visual instruction
- The CONE OF EXPERIENCE Theory

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1. Theories of Experiential Learning

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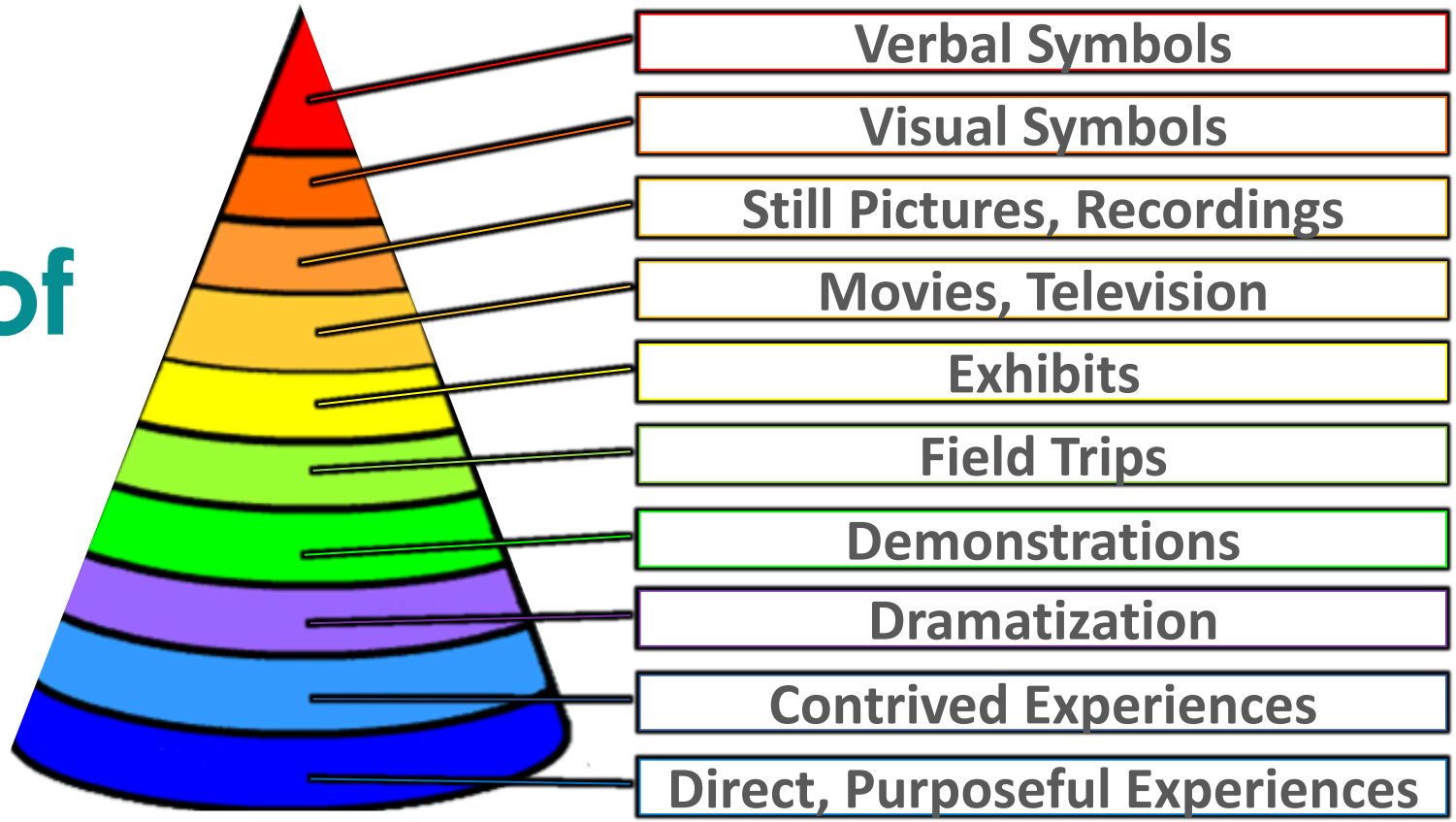
Dale's Cone of Experience



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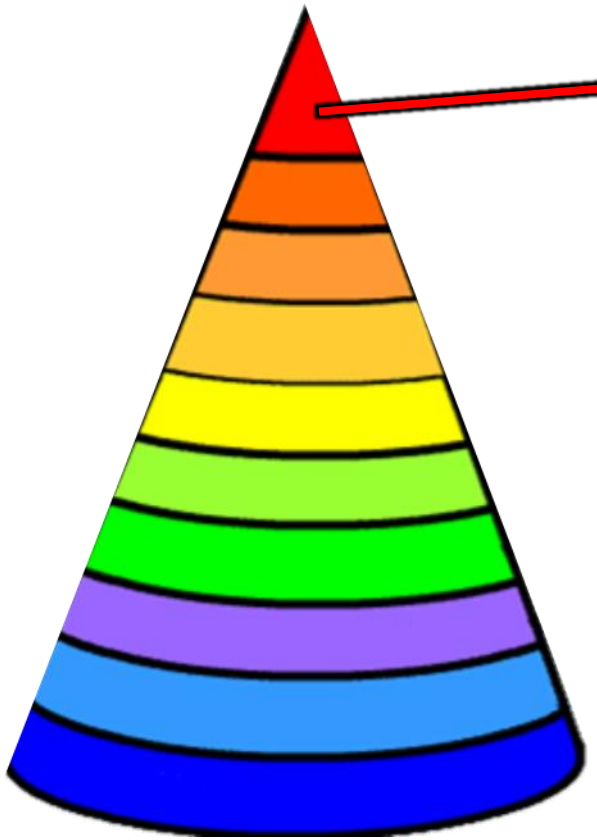
1. Theories of Experiential Learning

Dale's Cone of Experience



Verbal Symbols

Learning is acquired through reading symbols, such as letters, numerals, and other basic characters or codes.

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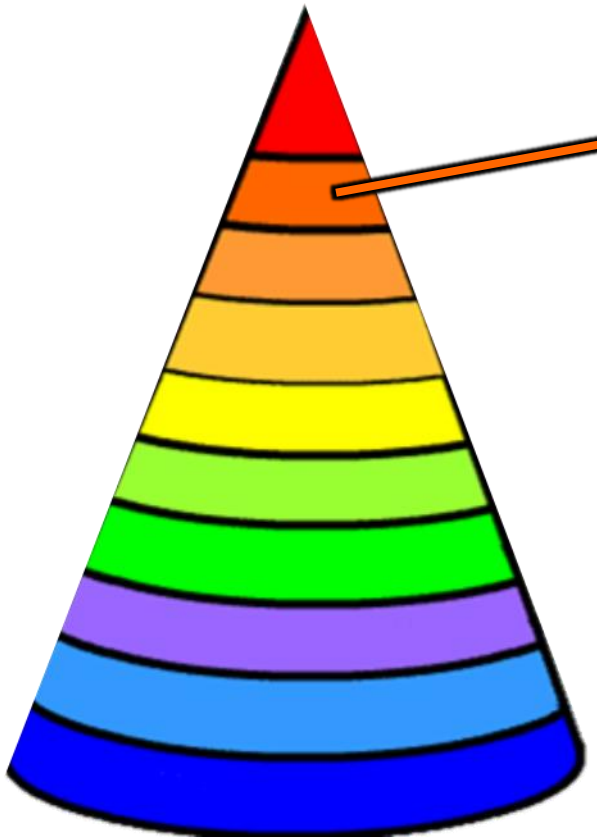
Dale's Cone of Experience



Visual Symbols

Abstract representation of learning concepts like charts, graphs, maps, tables, matrices, and diagrams

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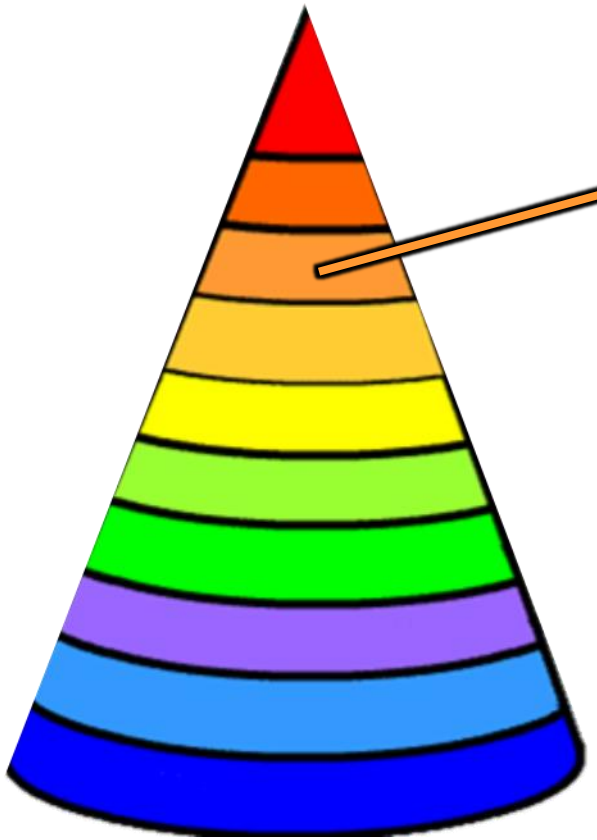

Still Pictures & Audio Recordings

Visual and auditory learning materials advance learning rather than mere symbols.

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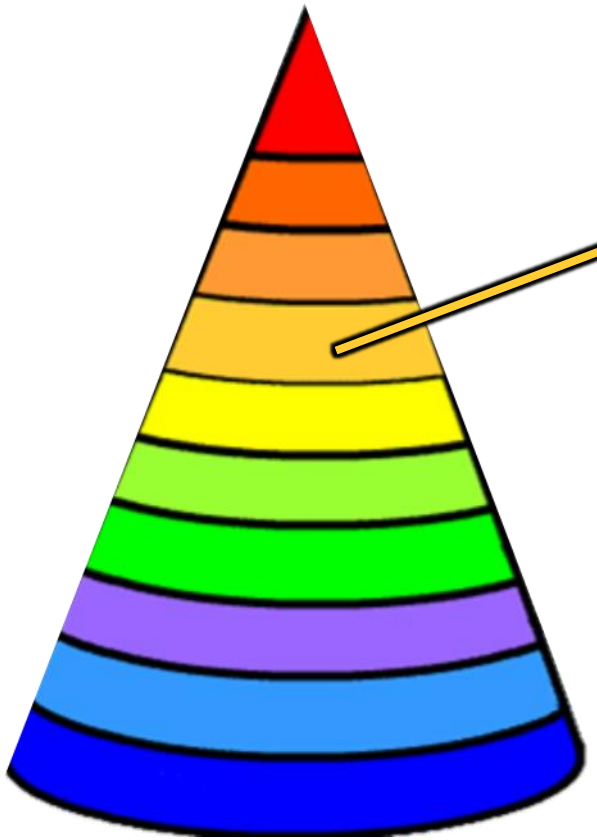

Movies & Television

Movements and cinematic experiences are added to enhance the visual and auditory learning experience.

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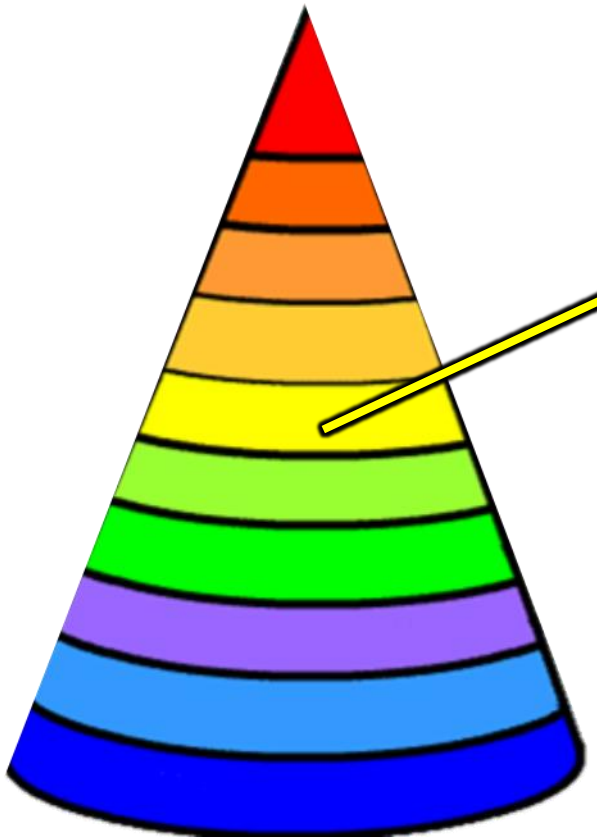

Exhibits

Artifacts, models, replicas, dioramas, and all other evidence of information for viewing purposes or sometimes tactile

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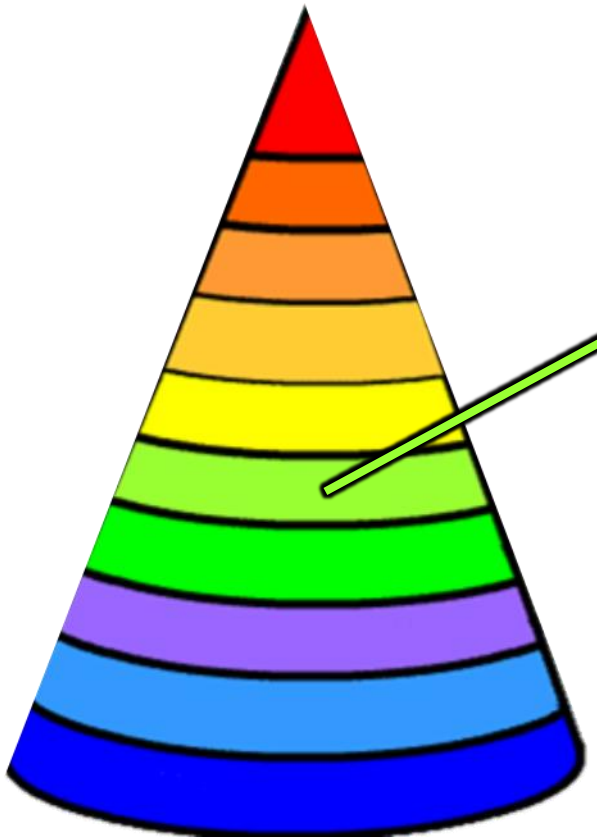

Field Trips

Exposure to real settings not available in the classroom that is usually ocular in nature

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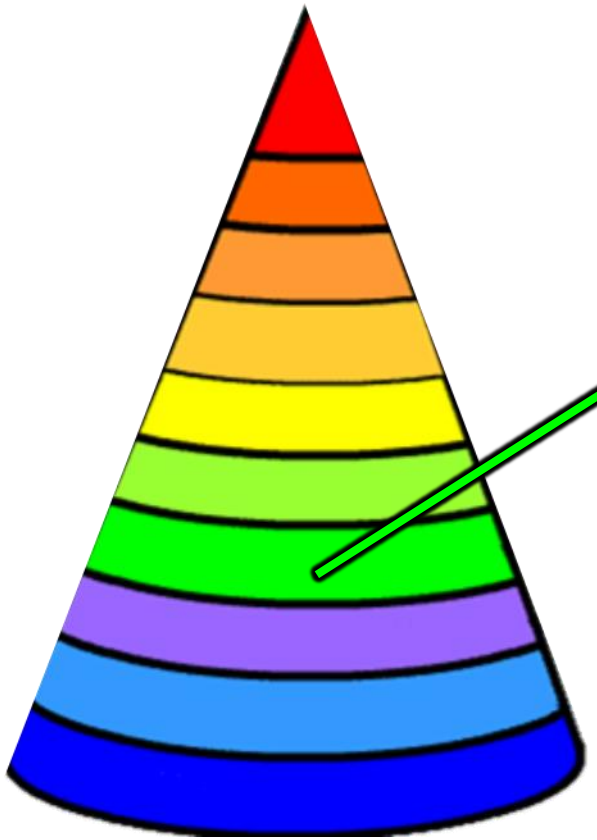
Dale's Cone of Experience



Demonstrations

Presentations that visually illustrate and explain facts, concepts, or processes

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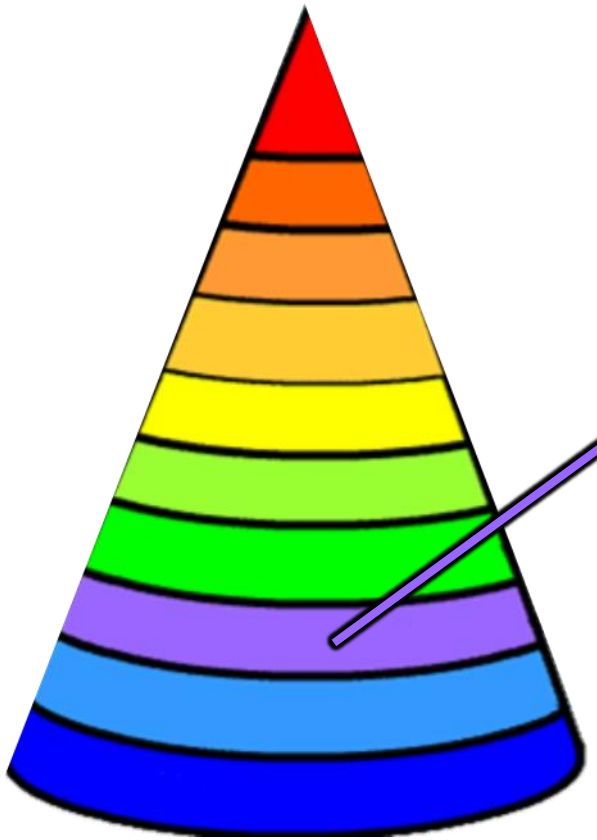
Dale's Cone of Experience



Dramatization

Role-playing, simulation, and enacting certain procedures

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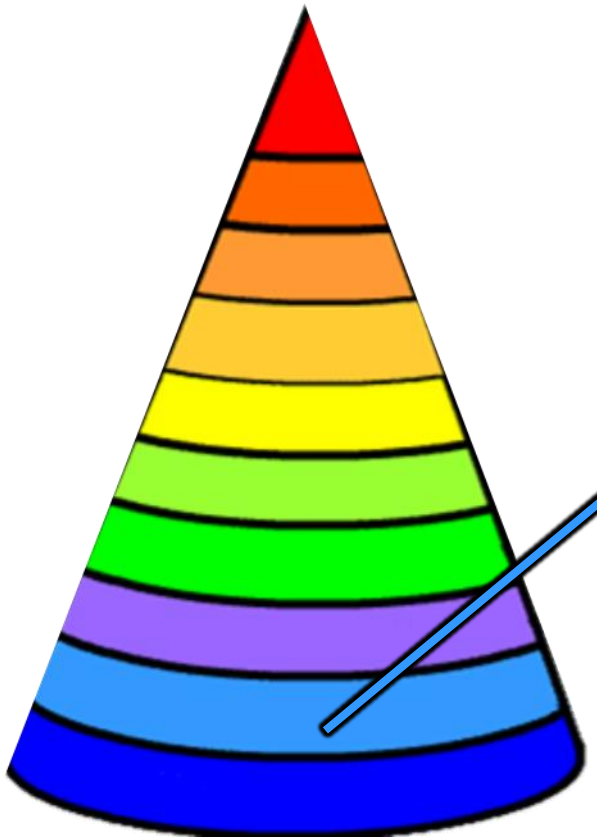

Contrived Experiences

Representational models and prototypes to offer an experience that closely resembles reality

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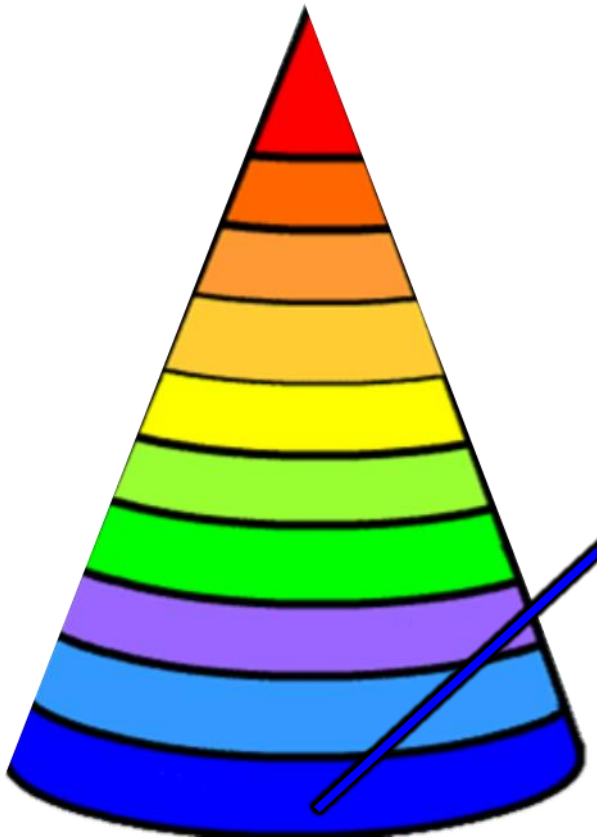
1. Theories of Experiential Learning

Dale's Cone of Experience



Direct Purposeful Experiences

Realia; authentic learning experiences that are hands-on-minds-on tasks

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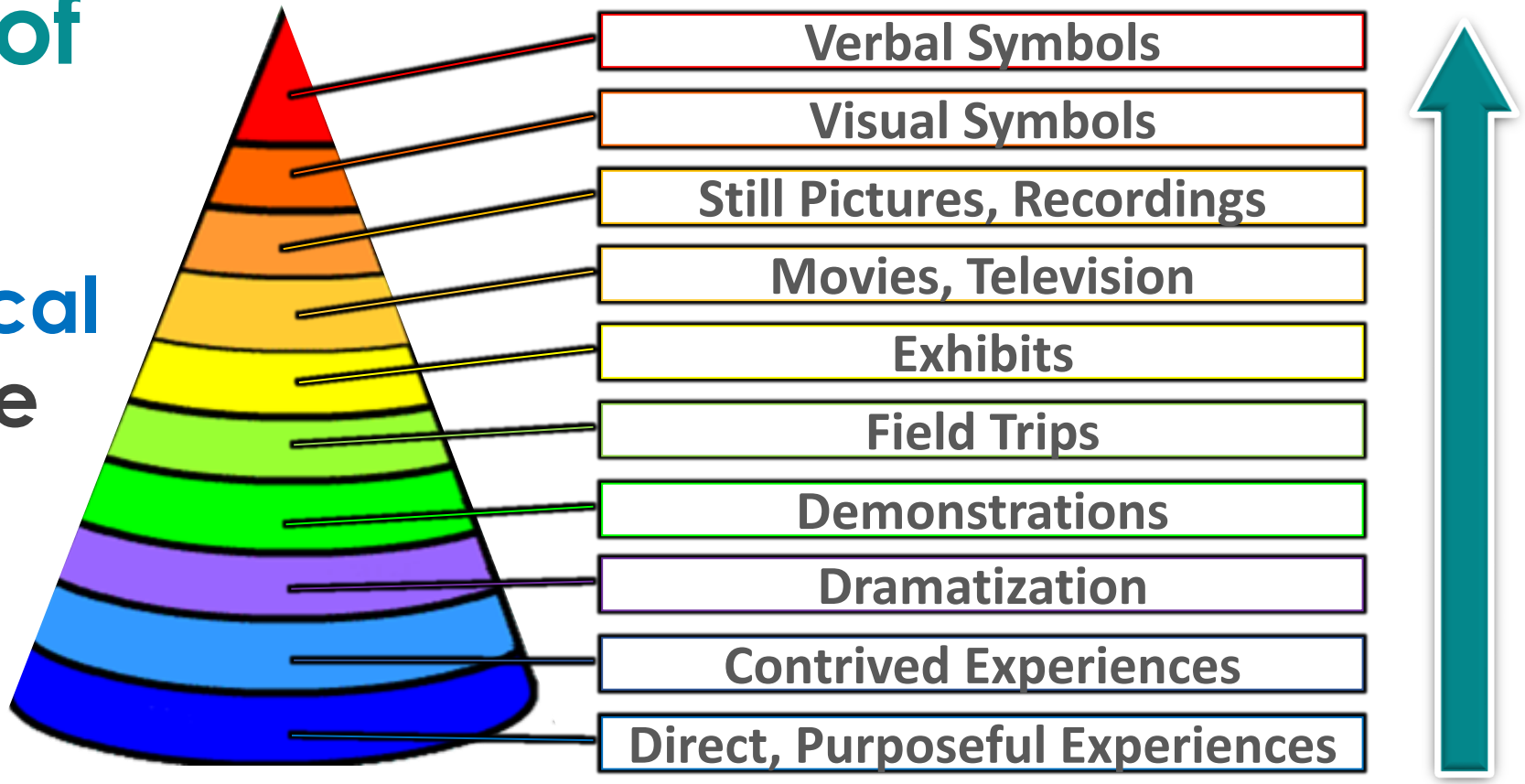
Dale's Cone of Experience

The more practical is the experience the better is the quality of learning.



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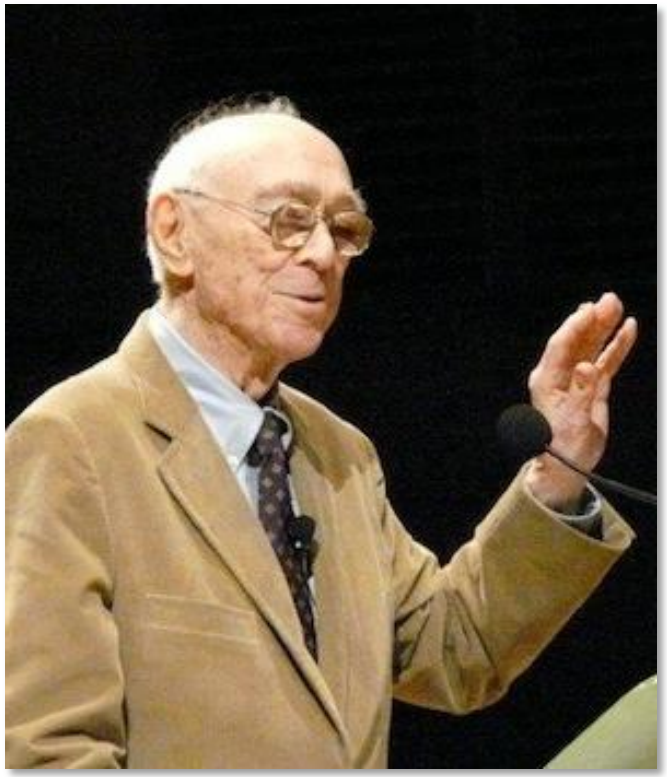

Image 4: **Instructional Design Models and Theories: The Discovery Learning Model (Source: Pappas, 2014: Online)**

Jerome Bruner (1915-2016)

- Professor of Education and Psychology at Harvard University and Duke University (USA)
- Most notable contributions were on constructivism and discovery learning
- The Three-Tiered Learning Theory

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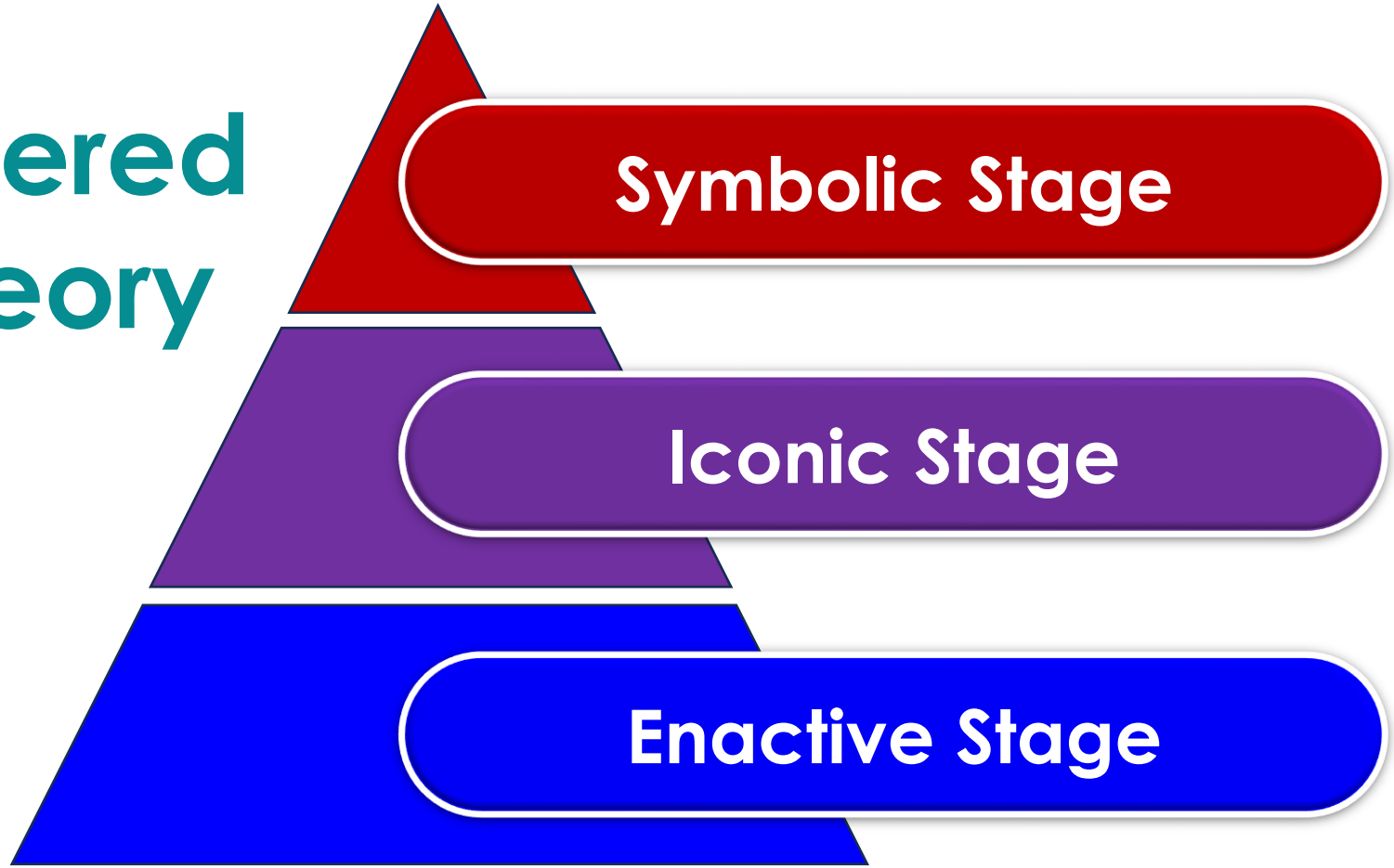
Bruner's 3-Tiered Learning Theory



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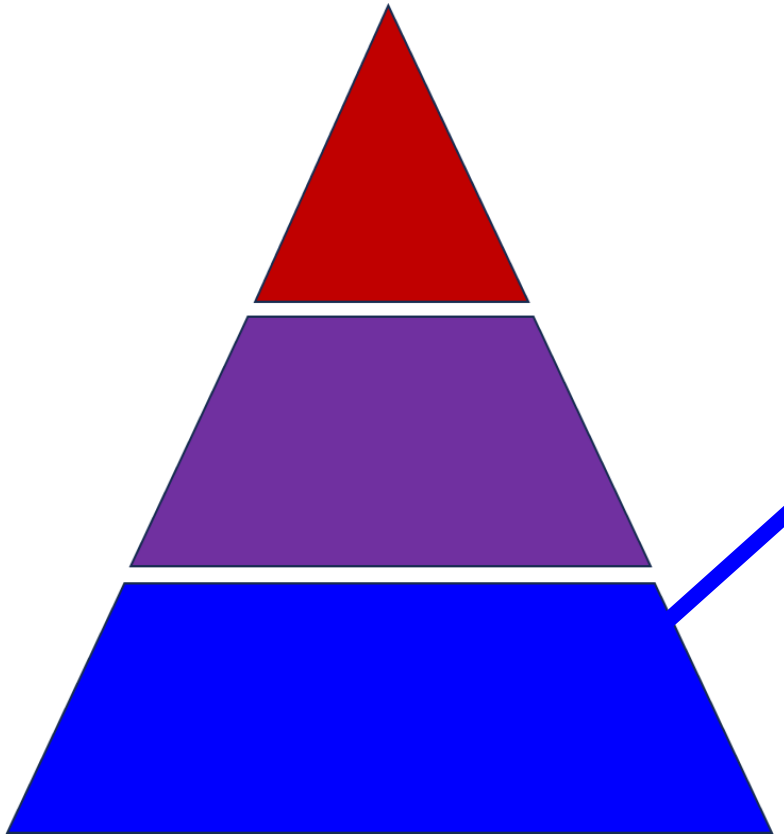
Bruner's 3-Tiered Learning Theory



Enactive Stage

From age 0 or 1 onward
Cognition relies on **concrete experiences** and motor responses.

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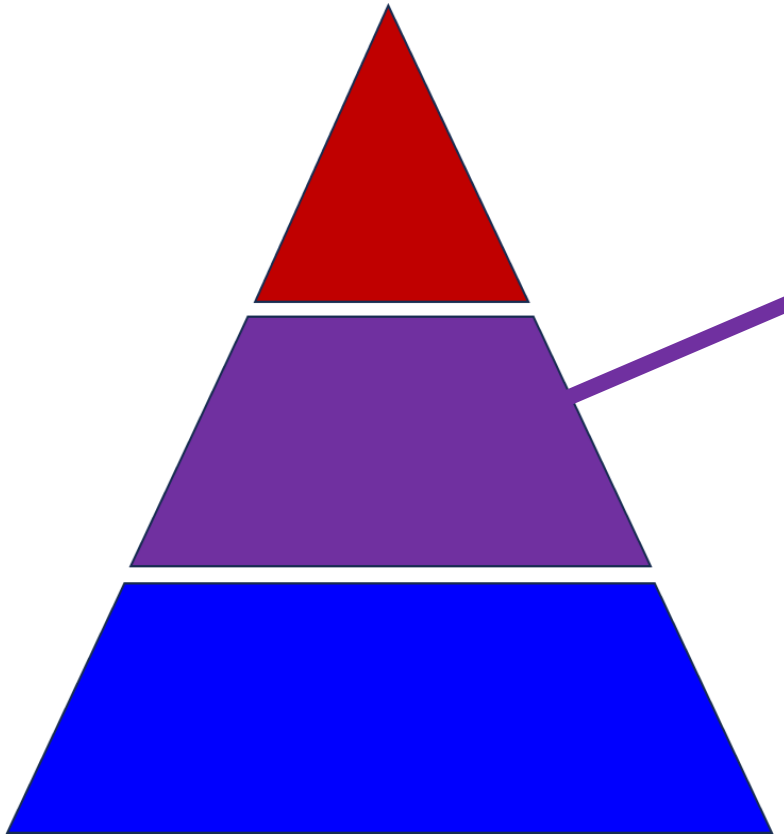

Iconic Stage

From ages 1 – 6 onward

Cognition becomes more active with **logical experiences.**

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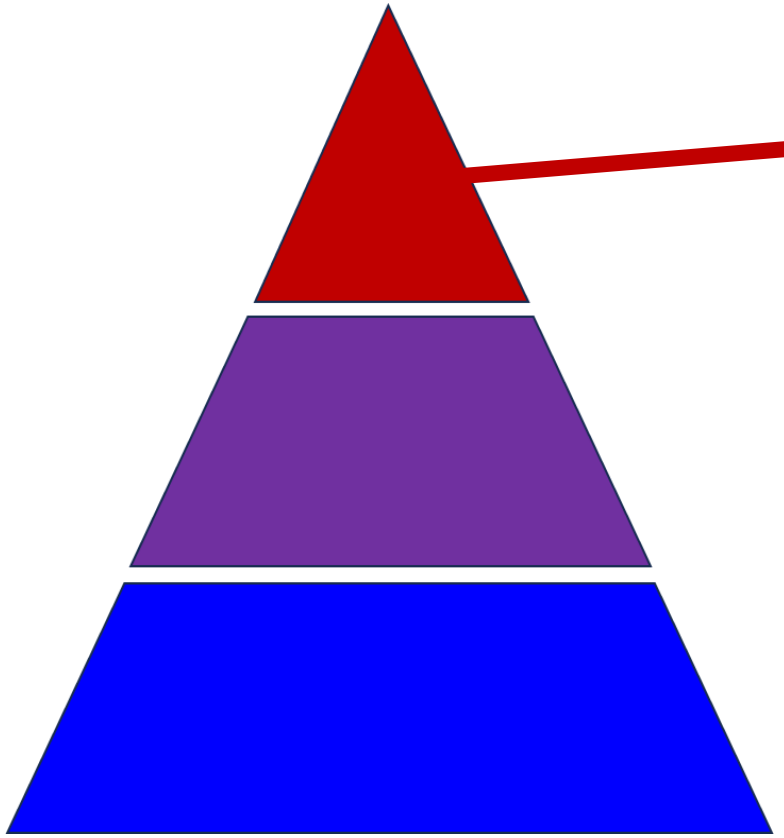
Bruner's 3-Tiered Learning Theory



Symbolic Stage

From age 7 onward

Cognition is more developed that can operate **abstract experiences.**

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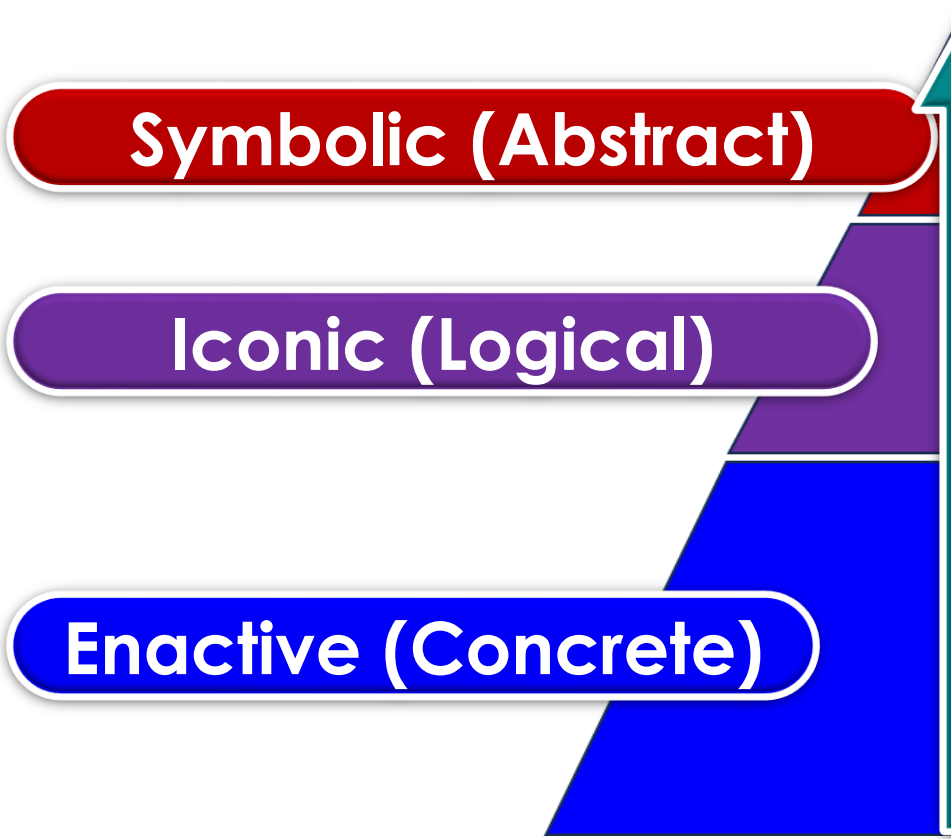
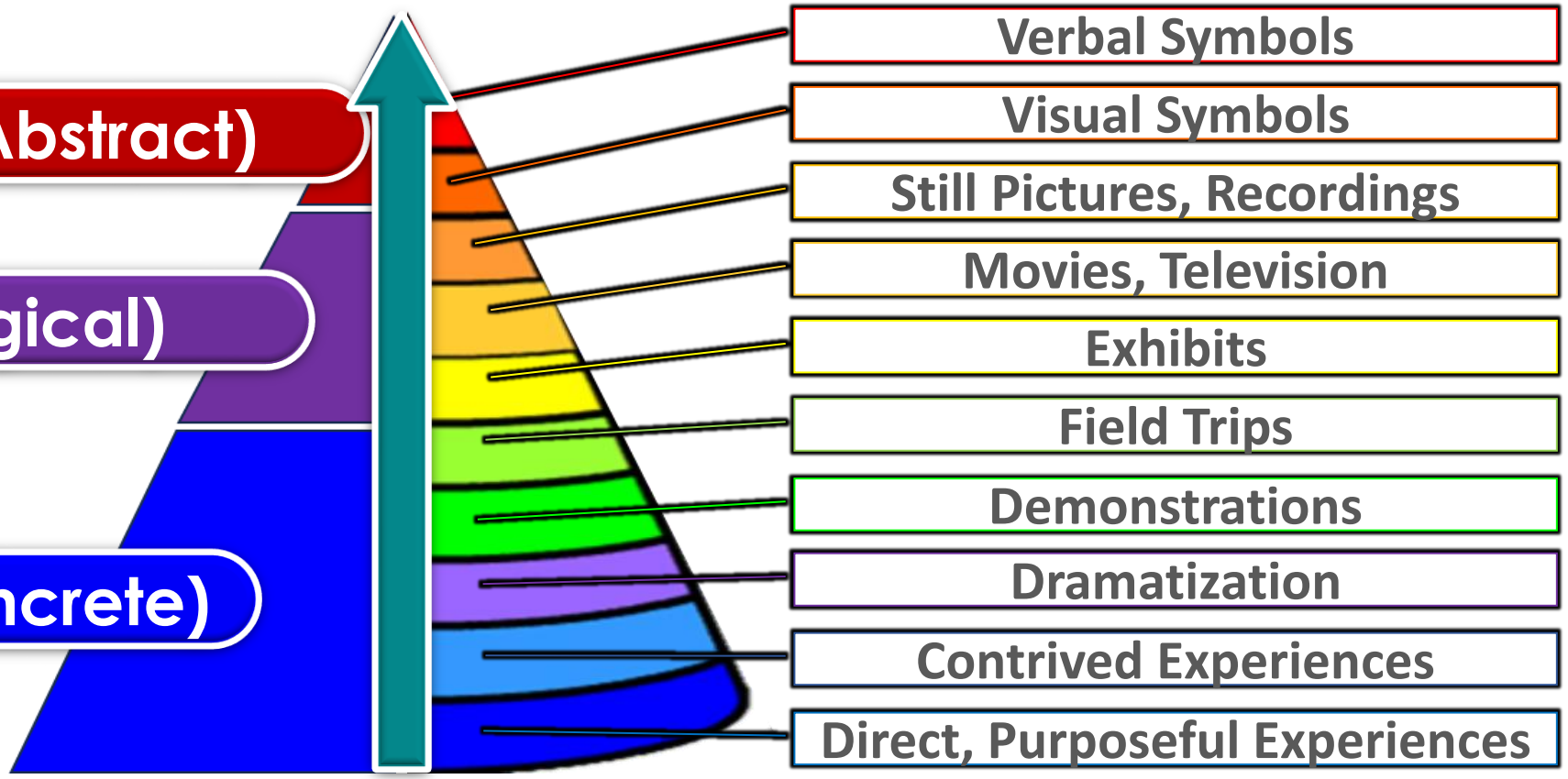
1. Theories of Experiential Learning

Bruner's 3-Tiered Learning



Dale's Cone of Experience



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1. Theories of Experiential Learning

Implications of Dale's and Bruner's Theories to Educational Technology

1. Multimodal Learning Resources
2. Interactive and Experiential Learning
3. Personalized Learning Paths
4. Collaborative Learning Environments
5. Accessible and Inclusive Learning

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1. Theories of Experiential Learning

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Implications of Dale's and Bruner's Theories to Educational Technology

1 Multimodal Learning Resources

Reinforcing the concept of varied educational experiences that accommodate different sensory modes and degrees of abstraction

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Implications of Dale's and Bruner's Theories to Educational Technology

2 Interactive and Experiential Learning

Focusing on the efficacy of first-hand experiences and active interaction with the topic, which helps to strengthen the ability to remember the information

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1. Theories of Experiential Learning

Implications of Dale's and Bruner's Theories to Educational Technology

3 Personalized Learning Paths

Using adaptive learning systems that customize training based on each learner's requirements and preferences

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1. Theories of Experiential Learning

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Implications of Dale's and Bruner's Theories to Educational Technology

4 Collaborative Learning Environments

Focusing on the role of social contact and reinforcing learning via shared experiences and mutual support

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Implications of Dale's and Bruner's Theories to Educational Technology

5 Accessible and Inclusive Learning

Having fair access to learning opportunities, consistent with promoting diversity in education

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A Model of Planning Educational Technology

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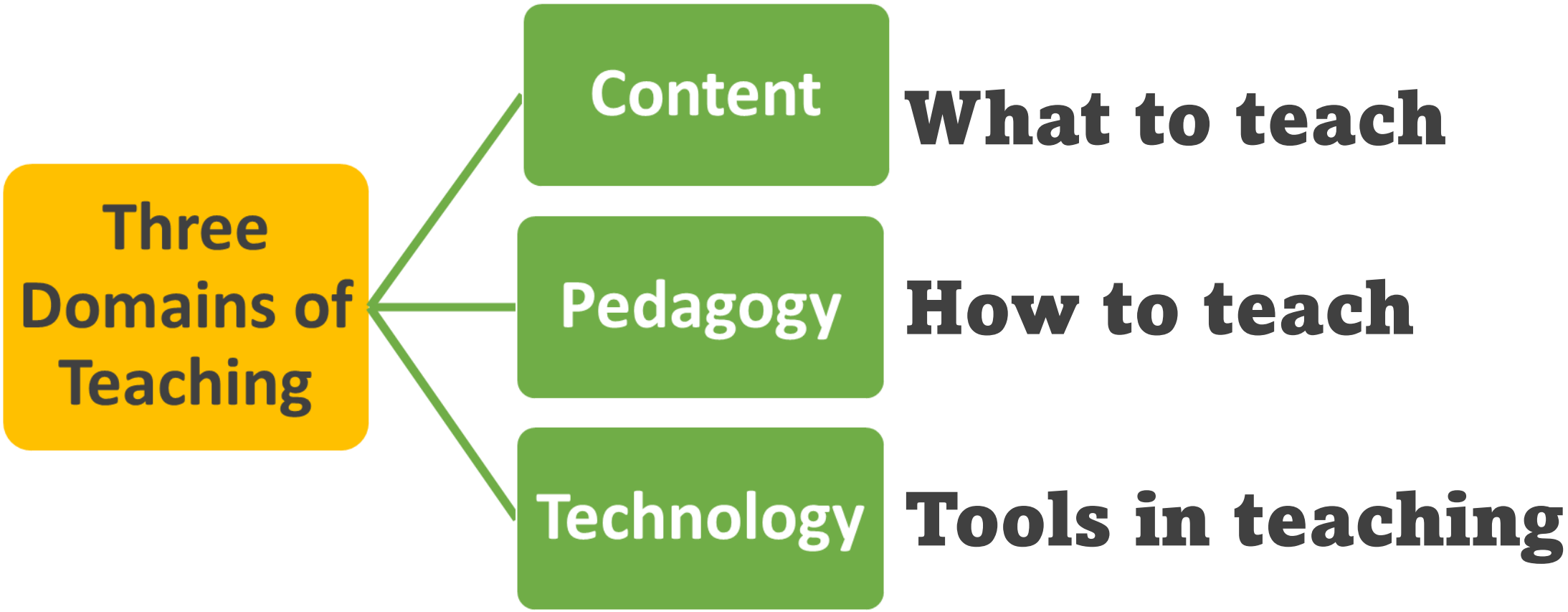
2. A Model of Planning Educational Technology



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Technology

Pedagogy

Content Knowledge

T P a C K

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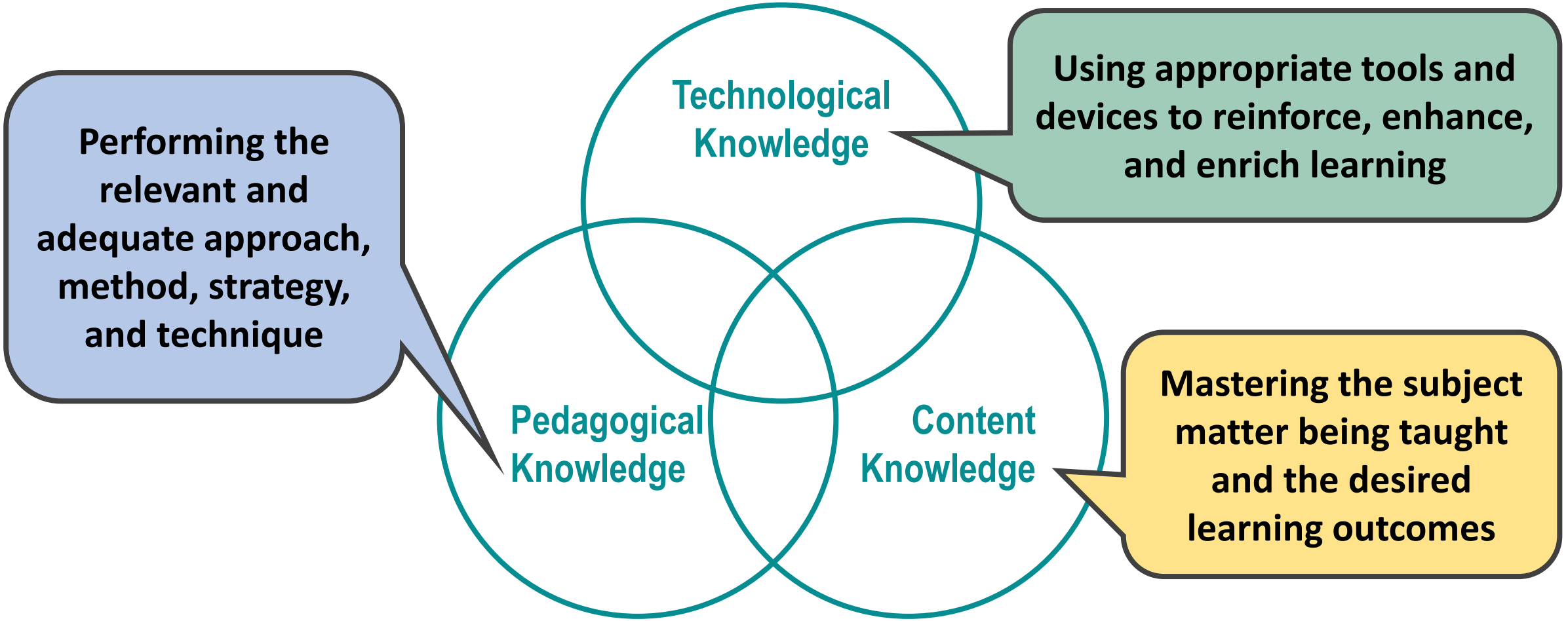
2. The TPACK Model



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The TPACK Teaching and Learning Model

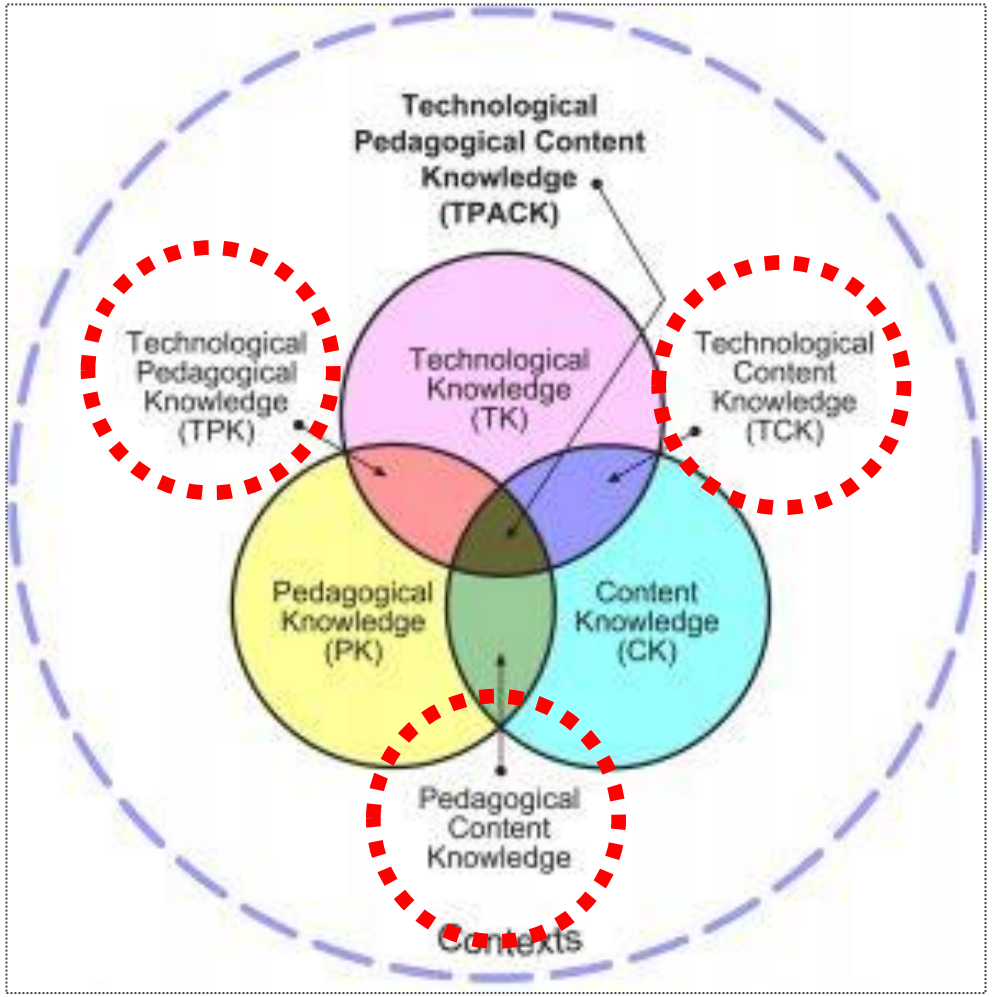

Image 5: **TPACK Framework by tpack.org (Source: Koehler, 2012: Online)**

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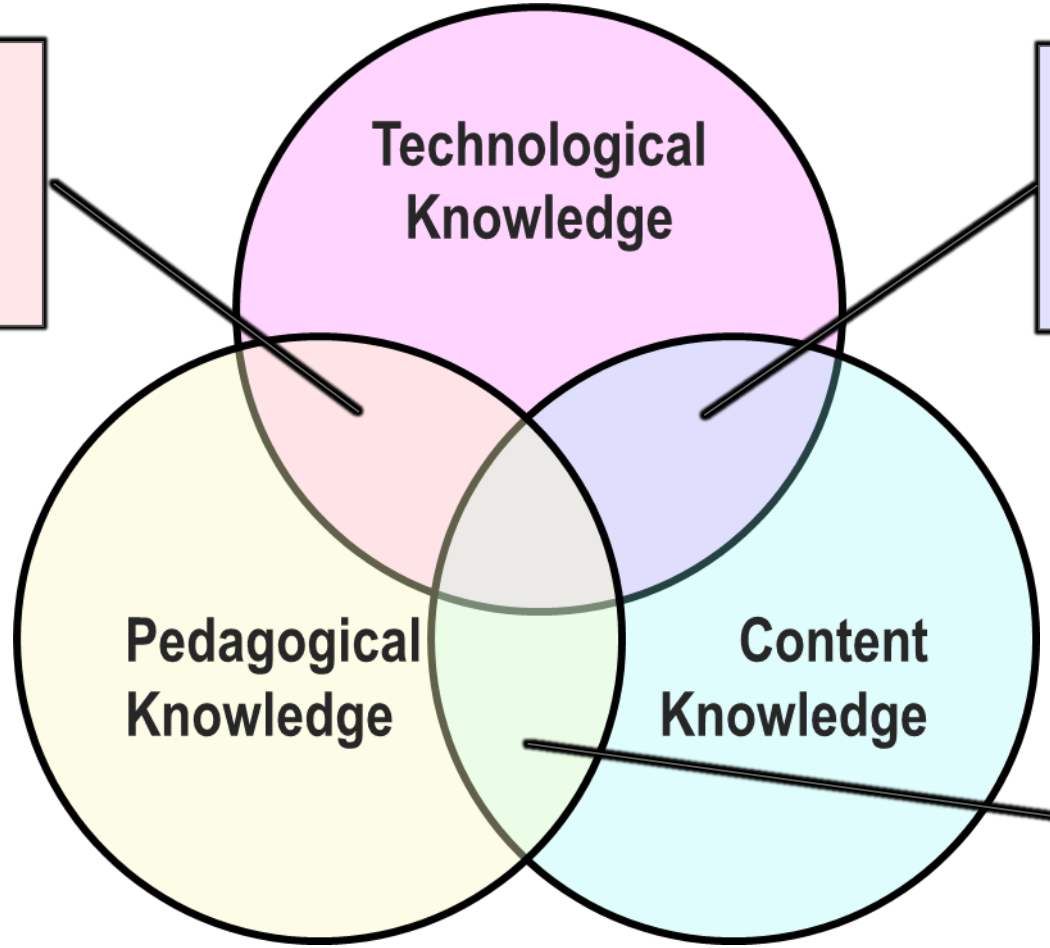
2. A Model of Planning Educational Technology

The Intersecting Components of the TPACK Model



Technological Pedagogical Knowledge (TPK)

Technological Content Knowledge (TCK)

Pedagogical Content Knowledge (PCK)

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2. A Model of Planning Educational Technology

Technological Content Knowledge (TCK)

Understanding the interplay between different technologies and their alignment with academic goals

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2. A Model of Planning Educational Technology

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Technological Pedagogical Knowledge (TPK)

Comprehending how different technology resources may be efficiently incorporated into teaching approaches

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Pedagogical Content Knowledge (PCK)

Recognizing how different educational strategies are related to particular learning objectives

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Lessons from the TPACK Model

- ✓ Purposive teaching by integrating the domains of teaching
- ✓ Contextualizing and localizing the learning experiences
- ✓ Promoting collaboration and co-creation
- ✓ Aligning with 21st-century skills toward success in the digital age
- ✓ Empowering teachers to make informed decisions
- ✓ Fostering a culture of continuous professional growth

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Lecture 3: CONCLUSIONS

The use of relevant tools enhances experiential learning by diversifying experiences and scaffolding knowledge acquisition across levels of abstraction.

Integrating technology, pedagogy, and content knowledge adds meaning to the teaching and learning experiences.

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