

Adult Learning

How to maximize your learning?

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Key Concept

- Teaching ≠ Learning

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Learning Objectives

- เมื่อสิ้นสุดการเรียนในคาบนี้แล้ว แพทย์ประจำบ้านสามารถ
 - บอกถึงลักษณะสำคัญของการเรียนรู้ในผู้ใหญ่
 - บอกประโยชน์ของการเรียนแบบ **active learning** ได้
 - อธิบายแนวทางส่งเสริมการเรียนรู้ของนักศึกษาตามทฤษฎีการเรียนรู้
 - Cognitive information processing
 - Meaningful learning
 - Situated cognition
 - Deliberate practice
 - Experiential learning theory

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Outline

- Adult learning
- Benefits of active learning
- Cognitive information processing
- Meaningful learning
- Situated cognition
- Deliberate practice
- Experiential learning theory

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Adult Learning

Adult Learning

- Adults learn base on their own needs.
- Adults have life experience that serves as a resource for learning.
- Adults are goal-oriented.
- Adults enjoy active participation in learning process.
- Focus more on concepts and principles
- Problem-driven more than subject focused
- Feedback is central to satisfied learning.

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Benefit of Active Learning

Active Learning

- **Enhance learning**
- **More fun**
- **Maintain concentration**

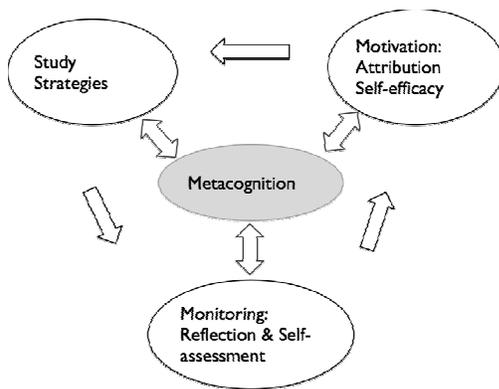
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Fundamentals of active learning

1. **Learning is an active process.**
2. **Different people learn in different ways.**
3. **We often don't know what we think until we try to say it or write it.**
4. **Just because you've attended a class doesn't mean you've learned it.**

Do we really have to learn how to learn?

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Tips to get through the program

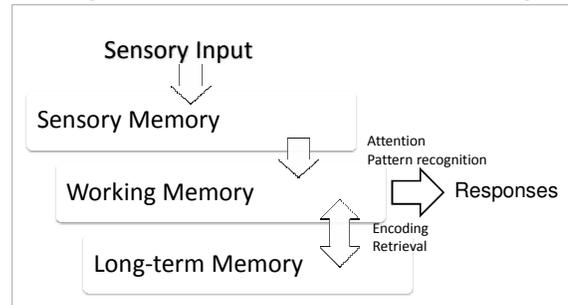
- **Develop good study habits and time management skills**

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Cognitive Information Processing

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Stages of Information Processing



Atkinson RC, Shiffrin RM. Human memory: A proposed system and its control processes. In: Spence K, Spence J, editors. The psychology of learning and motivation. New York: Academic Press, 1968.

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Attention

- The process by which people select some of the environmental input for further cognitive processing
- Factors affecting attention
 - Meaning
 - Competing tasks
 - Task complexity or difficulty
 - Individual differences: age, IQ, disabilities
 - Presentation: Size, Novelty, Color, etc.

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Pattern Recognition

- Comparing the incoming information with the prototype (past experience, prior learning) => perception of meaning/significance

Can you read this sentence? Of course, you can.

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Acquisition of a Memory Skill

- An undergraduate (S.F.) with average memory abilities and average intelligence engage in the memory span task for 1 hr/day x 3 – 5 days/wk, for one and a half year

Ericsson KA, Chase WG, Falon S. Acquisition of a memory skill. Science 208, 1980: 1181 – 2.

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Long-term Memory

- Rehearsal: Repeating the information to yourself over and over again
- Encoding: Relating incoming information to concepts or ideas already in memory in such a way that the information is more memorable
 - Categorization (grouping)
 - Hierarchies or diagrams
 - Mnemonics, stories
 - Songs
 - Images (Illustrations)

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Meaningful Learning

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Meaningful Learning

- “The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly.” (Ausubel et al., 1978)

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Two Types of Learning

- Rote learning
 - Memorization of facts
- Meaningful learning
 - The process of relating potentially meaningful information to what a learner already knows in a substantive way

Relevance Sequence

Ausubel, D. The psychology of meaningful verbal learning. New York: Grune & Stratton, 1963.

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Meaningful Learning

1. Make a connection of new concepts/ topics to students' experience or available knowledge.
2. Arrange proper sequence
 - From simple to complex
 - From known to unknown
 - From example to principle
 - From concrete to abstract

Cox KR, Ewan CE. The medical teacher, New York: Churchill Livingstone, 1982.

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Conditions for Meaningful Learning

1. A learner must intend to make a connection between the new knowledge and his/her existing knowledge.
2. The material to be learned must be potentially meaningful (i.e., organized and relevant).
3. A learner knows how his/her existing knowledge relates to the new knowledge.

Driscoll MP. Psychology of learning for instruction, 3rd ed. Boston: Pearson Allyn & Bacon, 2005.

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Situated Cognition

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Situated Cognition

- Cognition is a social and situated activity. Knowledge remains inert and unused if taught in contexts that separate knowing from doing.
- Learning occurs by increasing participation in communities of practice.

Legitimate Peripheral Participation

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Implications

- An ordinary factual telling lecture only leads to inert knowledge, **not** an actual learning.
- An actual learning occurs when students have active **participation** in **the situation** that requires the use of that knowledge.

Early Clinical Exposure

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Cognitive Apprenticeship

- Anchored Instruction
 Creating the conditions for situated learning in a classroom using various instructional materials and multimedia

Cognition and technology group at Vanderbilt. Anchored instruction and its relationship to situated cognition. Educational Researcher 1990; 19: 2-10.

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Deliberate Practice

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Deliberate Practice

- A practice that is designed to improve performance
- Teacher's continuous feedback
- Highly demanding practice

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Designed Practice

1. Break it into chunks
2. Slow it down
3. Repeat practice
4. Evaluate the performance



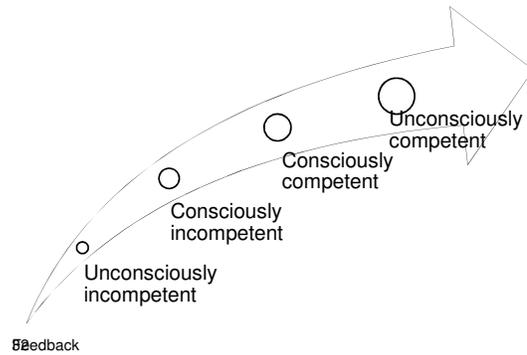
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1. Break It into Chunks

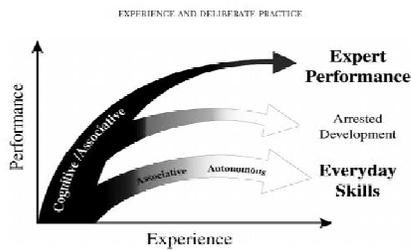
- Meadowmount school of music, New York
- A student learn a year’s worth of material in seven weeks... a 500% learning speed.
- Students scissor their music sheet into horizontal strips, memorize individual pieces, then link them together in progressively larger groupings

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2. Slow It Down

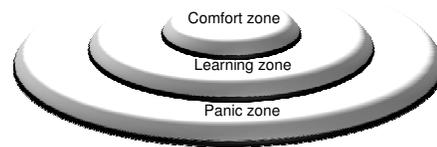


Consciousness



Ericsson KA. The influence of experience and deliberate practice on the development of superior expert performance. In Ericsson KA, et al. (eds). Cambridge handbook of expertise and expert performance. Cambridge university press, 2008

3. Repeat Practice



N Tichy, University of Michigan School of Business

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4. Evaluate the Performance

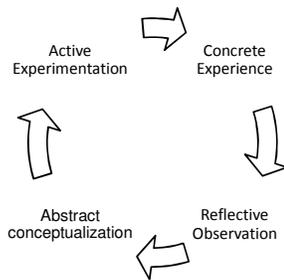
- Assessment of one’s own performance
- See the difference between the goals and the actual performance
- Think how to improve the level of performance to reach the goal

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Experiential Learning

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Experiential Learning Theory



Kolb DA. Experiential learning. Englewood cliffs, NJ: Prentice-Hall, 1984.
 Schön, D. The Reflective Practitioner, New York: Basic Books, 1983;7

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Experiential Learning Theory

- Plan for experiences in appropriate settings.
- Facilitate reflective observation.
- Encourage conceptual thinking and inquiry.
- Provide feedback on the insights.

Tips for experiential learning

- **Learn through the cycle, i.e. accommodate all four quadrants of the cycle**
- **If the supervisor doesn't teach through the cycle, try to fill in the gaps on your own**
- **Reflection**

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Levels of reflection

← 1. Descriptive reflection (superficial)
← 2. Practical action (medium)
← 3. Critical reflection (deep)

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Summary

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