



WEIRD SCIENCE

How the Adult
Brain Learns



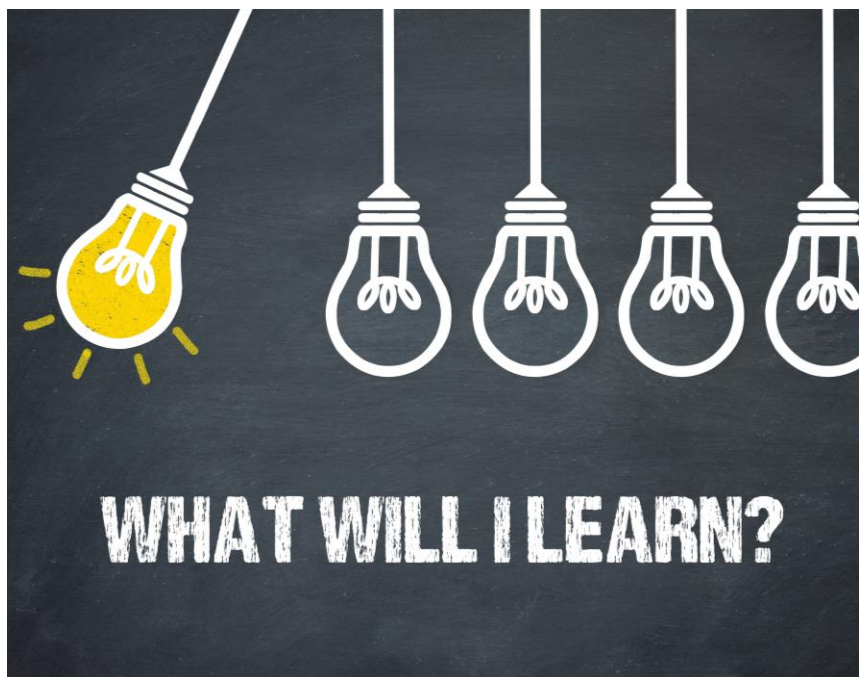
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Objectives

Upon completion of this session, you will be able to:

- Identify the difference between teaching children and teaching adults
- Examine how different learning theories influence classroom activity
- Distinguish among several different learning theories.



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It all started with....

Malcolm Knowles

- The Adult Education Movement in the United States (1962)
- The Modern Practice of Adult Education (1970)
- The Adult Learner (1973)
- Self-directed Learning: A Guide for Learners and Teachers (1975)
- A History of the Adult Education movement in the United States (1977)
- Andragogy in Action: Applying Modern Principles of Adult Learning (1984)
- Using Learning Contracts (1986)
- The Making of an Adult Educator (1989)
- Designs for Adult Learning: Practical resources, exercises and course outlines from the father of adult learning (1995)

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What's the Difference?

 <p>Image by rawpixel.com on Freepik</p> <p><u>Pedagogy</u></p>	 <p><u>Andragogy</u></p>
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6 Assumptions of Andragogy

- Adults need to understand the relevance – WIIFM
- Adults have a wealth of experience to help make meaning of new information
- Self-Concept – Adults need to be involved in the learning experience
- Readiness – Adults learn best when tied to something that has real-world application and can be used right away
- Problem Orientation – Adults learn because they need to solve a problem
- Intrinsically Motivated – No longer seeking rewards or avoiding punishment



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Other Learning Theories

- Feminist Pedagogy Theory (Paulo Freire – 1968 – translated to English in 1970)
- Experiential Learning (David Kolb – 1970's)
- Transformational Learning (Jack Mezirow – 1978)
- Self-Directed Learning (Garrison – 1997)
- Social Learning Theory (Albert Bandura – 1970's)
- Constructivism (Lev Vygotsky - 1978)
- Connectivism (George Siemens, 2005)

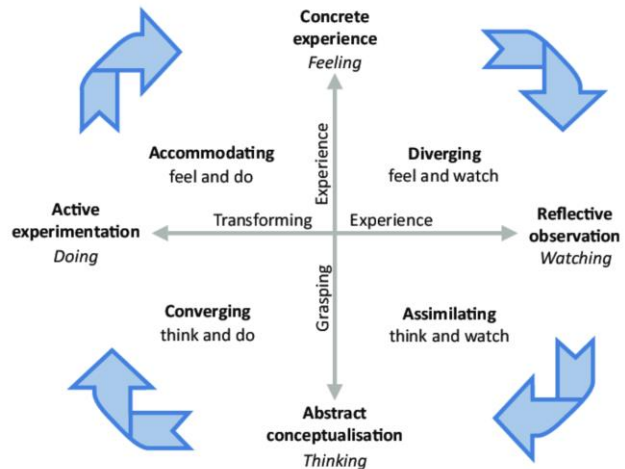
Psychological Theories

- Behaviorism (B.F. Skinner – 1938)
- Cognitivism (Jean Piaget – 1960's)
- Humanism (Abraham Maslow, Carl Rogers and F.T. Bugental – starting in early 1900's)

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Learning Styles

- **Diverging**
 - Prefer watching to doing
 - Strong imagination
 - Prefer to work in groups
- **Assimilating**
 - Interested in concepts and abstracts
 - Prefer good clear information
- **Converging**
 - Apply learning to practical issues
 - Prefer Technical Tasks
 - Experiment with new ideas
- **Accommodating**
 - Attracted to new challenges
 - Intuitive problem solvers



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7 Adult Learning Styles

- Visual – infographics, graphics and videos
- Auditory – lecture, podcasts, discussion
- Verbal (AKA Linguistic) – mnemonics, role-playing, small-group discussion and writing exercises
- Kinesthetic – hands on training, simulations
- Logical (AKA Mathematical) – gamification and simulations, flowcharts and procedures
- Social (AKA Interpersonal) – small-group discussion
- Solitary (AKA Intrapersonal) – time for reflection

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Transformational Learning

- Change
- How learner interprets environment, experiences and behavior of others
- How learners connect with the world



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Self-Directed Learning

- Learner identifies their own needs and goals
- Finds their own resources
- Happens along their own timeline
- Is personal to the learner

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Social Learning Theory

- Learning through observation of other students
- Demonstration followed by “Now You Try”
- Sharing experiences through discussion
- Job shadowing



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Constructivism

- Learners construct meaning through active engagement with the world
- Close-to-real-life experiences (in a controlled environment)
- Builds on previous experience to construct new understanding
- Reflection on experiences
- Provide guided support
- Use of mentors



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Connectivism

- How adults use technology to learn and stay current
- Collecting resources
 - Websites
 - Attending webinars
 - Following industry leaders on social media
 - Online forums

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Behaviorism

Learning is a change in behavior resulting from response to positive and negative stimuli in the environment

Memorization

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Cognitivism

Focuses on mental processes in learning

- Connect new information to what learners already know
- Provide opportunities for problem solving
- Provide structure and organization to knowledge
- Reflection
- Discussion
- Encourage thinking about strategies for learning and processes for continued learning



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Humanism

Based on the understanding that people are inherently good

The ultimate goal is personal growth and self-actualization

- Emphasizes personal freedom, choice, self-determination
- Focus on learner's emotional needs
 - a student will be less able to focus on the learning if they are emotionally compromised
 - Instructors need to create a classroom that is comfortable and psychologically safe
 - Teachers should provide motivation through exciting activities to help students feel engaged, provide choices in task or subject selection and help students develop skills and strategies that aid the learning process
- Assumes learners are intrinsically motivated
- Focus on holistic development of mind, body and spirit



Maslow's hierarchy of needs

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