

Theories, principles and models of learning

This handout will cover:

- How does learning occur?
- Learning preferences
- Fleming's VARK
- Honey & Mumford's learning styles
- Pedagogy and andragogy: Knowles
- Retention of learning: Pike
- Domains of learning: Bloom
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- Sensory theory: Laird
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The text here is a brief introduction to a few learning theories and you are advised to research them further.

How does learning occur?

People learn in different ways. Think back to when you received your first mobile phone, an electronic device, a new television or something else. Did you read the instructions first, did you ask someone to show or tell you how to use it, or did you jump right in and start using it not knowing what you were doing? This is an indicator of how you learn best.

All people learn differently, perhaps influenced by experiences in their childhood, school, personal or professional relationships.

When you learn something new, you will probably adapt, change or modify your behaviour as a result, the same will apply to your learners.

There are lots of theories regarding how people learn. These theories will have been based on ideas, thoughts and experiences. Some are quite old, but are tried and trusted; others are fairly recent. You might even come up with your own theories or challenge existing ones.

The theories mentioned here have been reworded to make them easier to understand, and are very brief. Theories are often amended, updated, rebuked and criticised over time.

Learning preferences

There is an old Chinese proverb:

I hear - I forget, I see - I remember, I do - I understand.

When you hear lots of information you may find it difficult to remember it all. If you can see something taking place that represents what you hear, you should remember more. However, if you actually carry out the task, you will understand the full process and remember how to do it again.

The same applies to learners, once they put theory into practice they will begin to understand what they have learnt. Most learners have a particular learning preference (or style), a way that helps them to learn. There are questionnaires which learners can carry out to find this out, or they might instinctively know what works for them. What you may tend to do is teach your sessions in the style in which you learn best – although it will suit you, it may not suit your learners.

Some people are in favour of using learning preferences (or styles), whereas others aren't. The current thinking is there is no valid research to justify their use. However, you will need to make your own decision on whether using the results of learning styles' tests will work for your learners. You will also need to check whether the organisation you work for advocates their use or not.

Fleming's VARK

In 2005, Fleming stated people can be grouped into four styles of learning: visual, aural, read/write and kinaesthetic (VARK).

Visual – seeing and looking

Aural – listening and talking

Read/write – reading and writing

Kinaesthetic – doing

For example:

Topic	Visual	Aural	Read/write	Kinaesthetic
Answering the telephone	Watching a demonstration, viewing an electronic presentation and/or online video Looking at a handout	Listening to instructions and recordings, asking questions	Making notes, reading instructions and handouts	Carrying out the task for real or partaking in a role play activity
Decorating a cake	Watching a demonstration, viewing an electronic presentation and/or online video	Listening to instructions, asking questions	Making notes, reading instructions and handouts	Carrying out the task for real
Practising interview skills	Viewing a film or online video Watching others act out an interview	Listening to instructions, asking questions, discussing scenarios with others	Reading handouts, making notes	Partaking in a role play
Remembering historical dates	Viewing a film or online video Looking at a handout or presentation	Listening to instructions, discussing dates with others	Reading text books and handouts, researching and writing dates and facts	Researching the internet, partaking in a role play or quiz
Using a digital device, program or app	Watching a demonstration, viewing an electronic presentation or video	Listening to instructions, asking questions	Making notes, reading instructions and handouts	Carrying out a task using a computer or other device

Honey & Mumford's learning styles

In 1992, Honey and Mumford suggested learners are a mixture of the following four styles: • activist • pragmatist • theorist • reflector.

Not all learners fall into one style; they may be multi-modal, i.e. a mixture of two or more styles enabling learning to take place more quickly.

Activist learners like to deal with new problems and experiences and like lots of activities to keep them busy. They love challenges and are enthusiastic.

Pragmatist learners like to apply what they have learned to practical situations. They like logical reasons for doing something.

Theorist learners need time to take in information, they prefer to read lots of material and think about something before applying it. They like things that have been tried and tested.

Reflector learners think deeply about what they are learning and the activities they could do to apply this learning. They will then try something and think about it again.

Pedagogy and Andragogy

These are teaching and learning terms. Formal teaching is known as pedagogy: where the teacher directs all the learning, for example a lecture. Informal teaching is known as andragogy: where the learner is the focus, for example via group work and discussions. Pedagogy does not always allow for individual knowledge to be taken into account and often focuses on teaching the same topic at the same time to all learners.

Knowles (1975) brought the concept of pedagogy and andragogy to the fore in education. He defined andragogy as the art and science of helping adults learn. An andragogical approach places more emphasis on what the learner is doing and the teacher facilitates their learning.

You can include your learners' experiences and knowledge by involving them whenever possible, and building upon what they already know and what interests them. Learners can also learn from their peers' knowledge and experiences, as well as the teacher.

which can affect a
psycho-motor,

cognitive, and affective (respectively). When teaching your subject, you will need to consider which domain you want to reach.

Think of:

- psycho-motor as the hands (skills)
- cognitive as the head (knowledge and understanding), and
- affective as the heart (attitudes)



Psycho-motor
The hands
Skills



Cognitive
The head
Knowledge and
understanding



Affective
The heart
Attitudes

Bloom's five stages of learning are:

1. attention
2. perception
3. understanding
4. short/long term memory
5. change in behaviour

Once the learning has been successful, a change in behaviour occurs.

Bloom also identified six different levels of learning with associated objectives that could be used when teaching and assessing learning, for example:

1. knowledge – list, recall, state
2. comprehension – describe, explain, identify
3. application – apply, construct, solve
4. analysis – calculate; compare, contrast
5. synthesis – argue, define, summarise
6. evaluation – criticise, evaluate, reflect

You will notice these objectives get more difficult the higher the level you go.

Conditions of learning: Gagne

Gagne (1985) suggests that there are several different types or levels of learning, each different type requires different types of teaching.

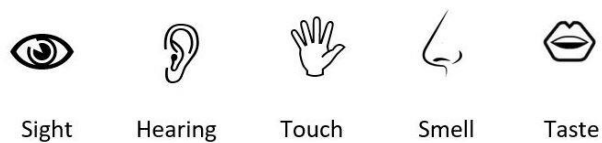
He identified five major conditions of learning:

1. verbal information
2. intellectual skills
3. cognitive strategies
4. motor skills
5. attitudes

Different internal and external conditions are required for each category of learning. For example, for motor skills to be learnt, there must be the opportunity for your learner to practice new skills rather than just learn about them. For attitudes, your learner must be able to explore these, for example, discussing environmental issues.

Sensory theory: Laird

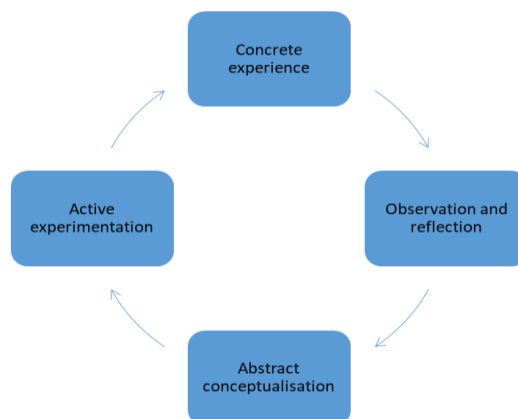
Laird (1985) stated learning occurs when the five senses of sight, hearing, touch, smell and taste are stimulated. Laird's theory suggests that if multi-senses are stimulated, greater learning takes place.



You could therefore adapt your teaching approaches and resources to enable your learners to use as many of their senses as possible.

Experiential theory: Kolb

Kolb (1984) proposed a four-stage experiential learning cycle by which people understand their experiences, and as a result, modify their behaviour. It is based on the idea that the more often a learner reflects on a task, the more often they have the opportunity to modify and refine their efforts. The process of learning can begin at any stage and is continuous, i.e. there is no limit to the number of cycles which can be made in a learning situation.



Concrete experience is about experiencing or immersing yourself in the task and is the first stage in which a person simply carries out the task assigned. This is the doing stage.

Observation and reflection involve stepping back from the task and reviewing what has been done and experienced. Your values, attitudes and beliefs can influence your thinking at this stage. This is the thinking about what you have done stage.

Abstract conceptualisation involves interpreting the events that have been carried out and making sense of them. This is the planning how you will do it differently stage.

Active experimentation enables you to take the new learning and predict what is likely to happen next or what actions should be taken to refine the way the task is done again. This is the redoing stage based upon experience and reflection.

Retention of learning: Pike

Pike (1989) showed that over a period of three days, learners remember:

- 10% of what they read
- 20% of what they hear
- 30% of what they see
- 50% of what they see and hear
- 70% of what they say
- 90% of what they say and do

Pike's theory has been adapted by others over time. Consider how this information can help influence how you teach. For example, if you are talking to your learners, they might only remember 10% of what you have said after three days.

Humanistic: Rogers

Rogers (1983) and others developed the theory of facilitative learning. This is based upon a belief that people have a natural human eagerness to learn and that learning involves changing your own concept of yourself. This theory suggests that learning will take place if the person delivering it acts as a facilitator.

To facilitate learning, you could establish an atmosphere in which your learners feel comfortable and are able to discuss and explore new ideas. Your learners should be able to learn from their mistakes (if it's safe to do so). Your learners should be able to find things out for themselves by experience. Your learners should not feel threatened by external factors.

Behaviourism: Skinner

Skinner (1974) believed that behaviour is a function of its consequences. Your learner will repeat the desired behaviour if positive reinforcement follows. Your learner should not repeat the behaviour if negative feedback is given. Giving immediate feedback whether positive or negative, should enable your learner to behave in a certain way.

Positive reinforcement or rewards can include verbal feedback such as 'That's great, you've produced that document without any errors' or 'You're certainly getting on well with that task' through to more tangible rewards such as a certificate at the end of the programme, or a promotion at work.

Cognitivism: Piaget

Cognitivism focuses on what happens in the mind, such as thinking and problem solving. It emphasises human cognition. New knowledge is built upon prior knowledge, and learners need active participation in order to learn. Changes in behaviour are observed, but only as an indication of what is taking place in the learner's mind.

Constructivism: Vygotsky

Constructivism states that learning is an active, contextualised process of constructing knowledge rather than acquiring it. The learner brings past experiences and cultural factors to a current situation. Each learner has a different interpretation and construction of the knowledge process.

Pragmatism: Dewey

This places the learner as the focus rather than the teacher. Using different delivery approaches, combined with practical activities, will help meet the needs of, and reach the different learning preferences of your learners. Learners should learn more from guided experience than from authoritarian instruction.

John Dewey (1859–1952) believed that formal schooling was falling short of its potential. He emphasised facilitating learning through promoting various activities rather than by using a traditional teacher-focused method. Dewey argued that learning is life, not just preparation for life.

Reading list

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Bates B (2019) *Learning Theories Simplified* London SAGE

Bloom BS (1956) *Taxonomy of Educational Objectives: The Classification of Educational Goals* New York McKay

Fleming N (2019) *VAR K Strategies* Self-published

Gagne R & Medsker K (1996) *The Conditions of Learning* Boston USA Wadsworth Publishing

Gould (2012) *Learning Theory and Classroom Practice* Exeter Learning Matters

Gravells A (2017) *Principles and Practices of Teaching and Training* London Learning Matters SAGE

Knowles (1975, 2015) *The Adult Learner* Abingdon Routledge

Kolb DA (2014) *Experiential Learning: Experience as the Source of Learning and Development* London Pearson Press

Mansell (2019) *50 Teaching and Learning Approaches* London Learning Matters SAGE

Pike R W (2003) *Creative Training Techniques Handbook* Massachusetts HRD Press Inc

Skinner BF (1988) *About Behaviorism* New York Random House

Website list

Dan Williams's learning theories' blog - <https://tinyurl.com/n2v89kz>

Honey & Mumford Learner Types free online quiz: <http://resources.eln.io/honey-mumford-learner-types-1986-questionnaire-online/>

Learning preference test – www.vark-learn.com

Learning styles overview: <https://www.learning-styles-online.com/overview/>

Learning theories - www.learning-theories.com

Reading lists - <https://www.anngravells.com/reading-lists/index>

Teaching and learning theories – http://cehdclass.gmu.edu/ndabbagh/Resources/IDKB/models_theories.htm

Thinkers and theorists - <http://www.infed.org/thinkers/>