



How do we learn?

KATIE GARDNER

Learning outcomes

- Introductions
- Explore key learning theories – how do adults learn
- Determine applicability of these learning theories to education now
- Identify our own learning styles and consider why it is important to PCET educators
- Explore concept of reflective practice
- Consider reflective writing for personal and professional development

Introductions

- Reflect on yourself as a person, what kind of fruit do you think you are and why?
- Name
- Fruit and why
- Statement about yourself – a core belief or value you believe about yourself.

Where do we learn?

- When you think about learning, what is the first thing that comes to mind?
- Formal learning vrs informal learning – what's the difference?
- Think of both formal and non-formal settings
- Join at: [Vevox.app](https://vevox.com)
- ID: 161-041-064



Task – 5 mins

- Individually think about times you have been learning
- At school
- At university
- In the community
- In your home
- Anywhere we mentioned just now...
- What made that learning good, bad or indifferent?

Learning theory

- Behaviourism
- Humanism
- Cognitivism
- Constructivism

Activity (20 mins)

- In groups you will be assigned one of the following to research and find out their approach to learning:
- Behaviourism
- Humanism
- Cognitivism
- Constructivism
- Each group will feedback before we cover it here

Behaviourism

- Key theorists include:
 - Skinner
 - Pavlov
 - Watson
- What did you find out?

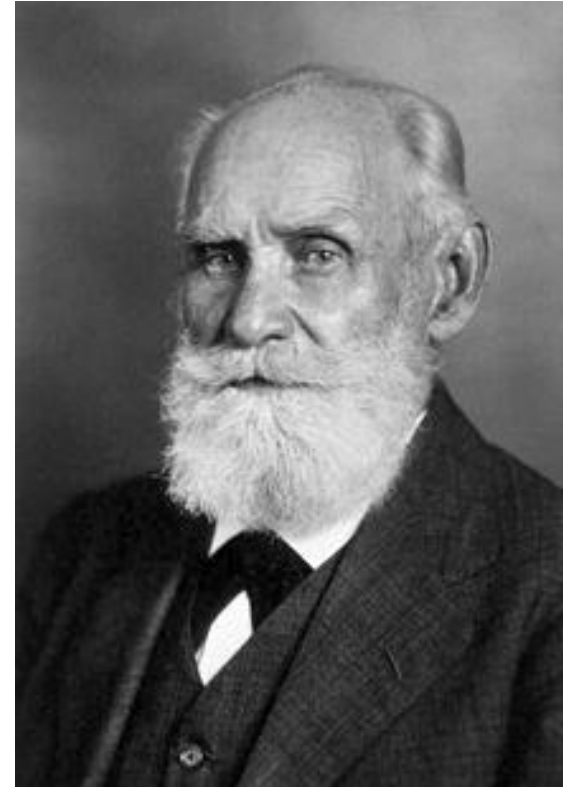
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- Focus on idea that all behaviours are learned through interaction with the environment, from the environment and that innate or inherited factors have very little influence
 - Disregards mental activities such as IQ
 - New and repeated behaviours eventually become automatic
 - Re-enforcement can influence this – if you do something good you get a treat which will make you do it again
 - Teachers can therefore, according to behaviourism, directly influence students' behaviours by rewarding or holding rewards

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- They view the learning process as a passive activity and believe that knowledge is given and absolute – an empty box to be filled
 - The amount of learning that takes place can be measured by observing behaviours, specifically correct answers.
 - Students are given knowledge and asked to reproduce what they have learnt to the teacher.
 - Learning process is passive
 - Completely ignores the possibility of thought processes occurring in the mind

Pavlov (1849 - 1936)

Conditioning

- We enter the world as a blank slate.
- Our unique ways of behaving are a result of our environment and experiences.
- Rejected Freud's concept of the unconscious as unscientific.
- Based his theories on observation alone.



To prove this theory–Pavlov's dogs

- Pavlov's assistant gave the dog food and the dog learnt to associate food with the assistant.
- The neutral stimulus (the assistant) had become associated with the unconditioned stimulus (food), so triggering a reflex (salivating).
- Pavlov moved this on and rang a bell every time he gave the dogs food.
- The dogs began to associate the bell with food.
- When Pavlov removed the food and just rang the bell, the dogs carried on salivating.
- So the *neutral stimulus* (the bell, the assistant) had become a *conditioned stimulus* producing a *conditioned response*

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- Some things a dog doesn't need to learn, called unconditioned reflexes.
 - For example, a dog doesn't need to learn to salivate in the presence of food it already does that



What Pavlov concluded



Behaviour is learnt or conditioned according to associations in our environment and upbringing.



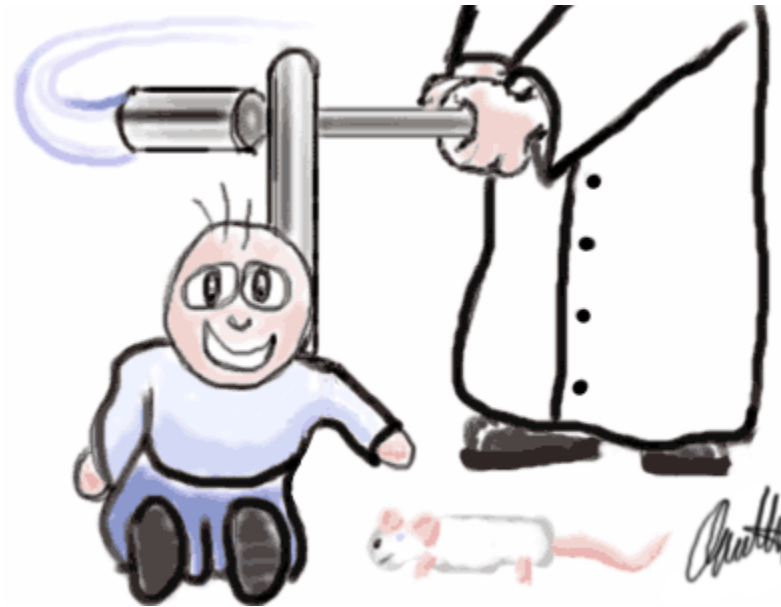
Human beings can widen their associations using their imaginations



Watson (1878-1958) continued...

- Humans learn by a process of conditioning.
- He believed you could take any child and turn them into whoever you wanted:
- *“I’ll guarantee to take anyone at random and turn them into the specialist which I select”.*
- He believed he could make anyone anything – a painter, a robber, a scientist... anything

-
- Watson attempted to show how humans could be conditioned.
 - He took an 8-month-old baby, little Albert, who previously had no fear of rats.
 - His neutral stimulus was a loud sound just behind Albert's head, which upset him.
 - Every time the rat appeared; Watson made the loud sound.



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- Watson presented Albert with the rat on his own, with no noise of a metal bar, and Albert started crying.
 - Albert had learnt to associate the rat with the upsetting noise, producing a *conditioned reflex* (crying).
 - He also found that Albert *generalised* his fear to all white furry objects.
 - He had learnt to associate loud scary noises with the rat

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- If a child is bitten by a dog, the normally neutral stimulus (dogs) has produced an association of pain and fear.
 - This can be generalised to every dog, so the sight of any dog produces anxiety and fear.
 - The neutral stimulus has become a conditioned stimulus to a conditioned reflex, fear.

B.F. Skinner (1904-90) Operant Conditioning

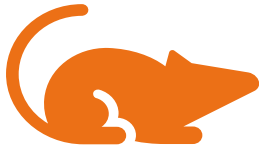
- We learn by positive and negative feedback.
- These feedbacks are called *reinforcements*.
- The more *positive* reinforcement we receive, the more we will voluntarily repeat that behaviour (praise, prizes, rewards, satisfaction).
- By *operant* Skinner means “behaviour occurring just before the stimulus”.
- So...*operant conditioning* means causing repeat behaviour patterns just before a stimulus occurs.



Skinner's Rats

- Skinner put rats in a cage
- When the rat accidentally pressed a bar on the wall, a food pellet (the *reinforcer*) was released
- In no time the rat was furiously tapping away at the bar
- If you stop giving pellets the rat quickly stops pushing the bar
- The rat resumes its behaviour much more quickly when the pellets are reintroduced. It has learned by experience.

Skinner's conclusions



A behaviour followed by reinforcement causes the behaviour to be repeated



If the reinforcement is withdrawn, the behaviour diminishes



So frequency and nature of reinforcements are vital to sustain a desired behaviour



[Operant conditioning in action](#)

Strengths and weaknesses

- Strength:
 - The learner is focused on a clear goal and responds automatically to the signs of that goal.
 - Ensures that a person behaves in the same way whenever the same circumstance is presented, for example, it is important that a computer user runs the same query at the end of each month to produce the monthly sales report.
- Weakness:
 - The learner may find themselves in a circumstance where they need to respond
 - What if mental cues they receive do not match what they have previously learnt.

Opinion...

- Do you think this is relevant to post 16 learning?
- How might it fit in with your teaching style, or
- is it a theory to be acknowledged and disregarded?

Humanism

- Theorists include
 - Roger
 - Maslow
- What did you find out?

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- Humanists take into consideration the learners' experiences, motivations, drives
 - Humanism is a paradigm or philosophy of beliefs concerned with the needs of people and their being
 - The Humanist Approach is a method of doing something that is concerned with the needs of people
 - It is a world living in complexity, uncertainty, instability, the uniqueness of individual response and the conflicts of values
 - Self / motivation / experience / goals of particular interest.

Humanist Learning Theory - Principles

- Self – direction and independence – *learner-centred*
- Wanting and knowing how to learn - *learning to learn*
- Self-reflection and evaluation – *opportunity to take stock*
- Importance of feelings - *affective (feelings) and cognitive (knowledge) equally important*
- Freedom from threat – *learning maximised when environment is safe.*



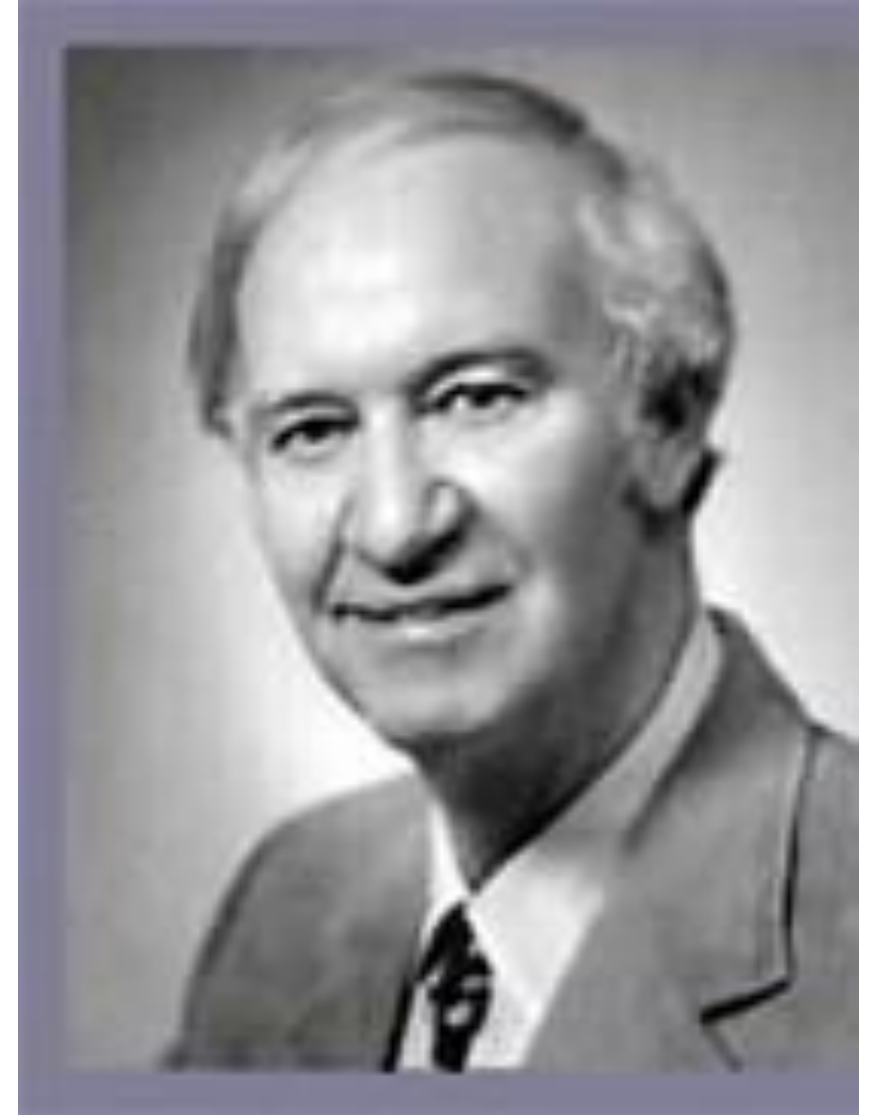
John - Dewey Principles and Key Concepts

- Philosophical pragmatism
- Concern with interaction - *Experiential learning*
- Reflection and experience - *Education must engage with and enlarge experience*
- Interest in community and democracy
- Informal /formal learning.

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- Significant learning takes place when the subject matter is *relevant to the personal interests of the student*
 - Learning which is threatening to the self (e.g. new attitudes or perspectives) are more easily assimilated when external threats are at a minimum
 - Self-initiated learning is the most lasting and pervasive.
 - “a quiet revolution is underway... A promise of moving us forward to a more human, more person centred world.’ (Rogers, 1969)

Malcolm Knowles - Andragogy

- Adult Educator – adopted the term *andragogy* in his application of humanist learning to adult learners
- Adult learners seen as self-directed and autonomous
- Teachers seen as facilitators.



Maslow : Hierarchy of needs

- Who can tell us about Maslow's' hierarchy of needs?



Pyramid of Needs (After Abraham Maslow)

Strengths and weaknesses

Strengths:

- Seen as empowering
- Considers individuals in learning and how experiences, emotional state can impact their learning
- Holistic view of education – see the ‘whole learner’

Weaknesses:

- Seen as not based in ‘formal’ research but as anecdotal
- Seen as subjective – everyone's experience is different and therefore can it be measured
- Concerned with the process of learning rather than what is learnt

Opinion...

- Do you think this is relevant to post 16 learning?
- How might it fit in with your teaching style, or
- is it a theory to be acknowledged and disregarded?

Cognitivism

- Theorists include
 - Piaget
 - Erikson
- What did you find out?

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- Emphasis on the active mental processing on the part of the learner.
 - Different types of tasks will incur different cognitive processes.
 - Learning a new language will require different processes than learning to spell
 - It is very important to appreciate those processes are different to eventually understand how the learner engages in the learning process so that the learning process may be enhanced.
 - The learner's role as an active and creative activity rather than a passive one
 - Cognitive theory usually relates to the role of information processing.

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- The aspects involved in processing such as memory, organisation and neurological connections are viewed as central in the cognitive theories.
 - Learners tend to formulate a hypothesis about the rule underlying a particular concept so that they can be expressed in the if-then form
 - for example, if an animal has four legs, a hump or two, is large, has fur that molts in the summer and it spits, then it is a camel
 - Cognitivists' concept is fundamentally different from the behaviourists' view of learning. However, similar to behaviourists, cognitivists also agree that knowledge is given and absolute, but the cognitivists focus and emphasise on the internal mental processes of the learner during the learning process.

Jean Piaget

- Studied human knowledge - the nature of thought and how it develops
- Based on studying the cognitive development of children
- Came up with stages of development:
 - **Sensorimotor** – development of senses and movement (1 - 2 yrs)
 - **Preoperational** – symbolic thought; need for constant stimulation; egocentric (2 – 7 yrs)
 - **Concrete operational** – able to perform more complex ‘real/concrete’ mental operations and tasks; decentred (7 – 12 yrs)
 - **Formal operational** – able to solve hypothetical problems (ability dependent on a wide range of experiences) (12 – 19 yrs)

Influence of Piaget

- Shift from a didactic form of teaching to child-centric teaching
- Recognition that teaching should reflect that:
 - Children need individual attention
 - Children's education should match their intellectual capacity
 - Children mature (intellectually, physically and emotionally) at different rates
 - The role of play and discovery is critical in children's learning.

Guy Claxton

- Learning can be hard, lonely, confusing, frustrating and upsetting
- But it can also be exciting and exhilarating
- Self-efficacy is key
 - What you believe about learning
 - What view you have of yourself as a learner
- Robust and fragile learners

Robust vrs fragile learners

ROBUST LEARNERS

- Intelligence not fixed can be improved
- Strong self-efficacy
- Value own goals
- Resilient
- Bounce back
- Recover from difficulties
- Fight, not flight

FRAGILE LEARNERS

- Fatalistic about their own intelligence
- Weak self-efficacy
- Question own goals
- Panic and collapse
- Low self-esteem and self-confidence
- Give up
- Flight, not fight

Influence of Claxton

Educators should:

- Show concern for the learner's self-worth
- Develop a learning culture
- Help learner's build resilience – not 'of course you can'
- Provide a high challenge / low stress situation
- Focus on the process as well as the content
- Provide transferable learning strategies

Influence of Claxton

- Students need:
- **Resourcefulness** – what do you do when you don't know what to do? – 'stuckness'
- **Reflectiveness** – what have you done before? – 'learning to learn' focus
- **Relatedness** – how can you work with others? who can you collaborate with?

So...

- Students choose not to learn when:
 - They don't feel safe enough – high stress – high stakes
 - They don't feel they have enough time – 'hurry along' culture
 - They don't have the learning skills
 - They don't have the encouragement
 - The sacrifices involved are too great – it doesn't matter enough

Living is learning

- Everyone is born with a starter-kit of reflexes that tell them, innately, what to do when cold or hungry, or when an object suddenly looms up in front of them. You shiver, you cry, you duck.
- We come into the world with a rudimentary map, and a crude set of responses.
- But more than any other animal, we human beings arrive unfinished, waiting to attune ourselves to the peculiarities of the terrain into which we have emerged.
- Human beings serve the longest apprenticeship of any creature, because we come with the capacity – and the necessity – to learn the most.
- Claxton (Wise Up 1999)

Strengths and weaknesses

- Strength:
- Learners are to be trained such that they accomplish a task the same way on a number of occasions – for example, all members of a customer service department must be able to respond the same way to similar queries.
- Weakness:
- Learners learn a way to accomplish a specific task but it may not necessarily be the best way or suited to that particular situation or learner, for example, in response to a programming question, students may produce different working versions of the system but some may be much less efficient than others.

Opinion...

- Do you think this is relevant to post 16 learning?
- How might it fit in with your teaching style, or
- is it a theory to be acknowledged and disregarded?

Constructivism

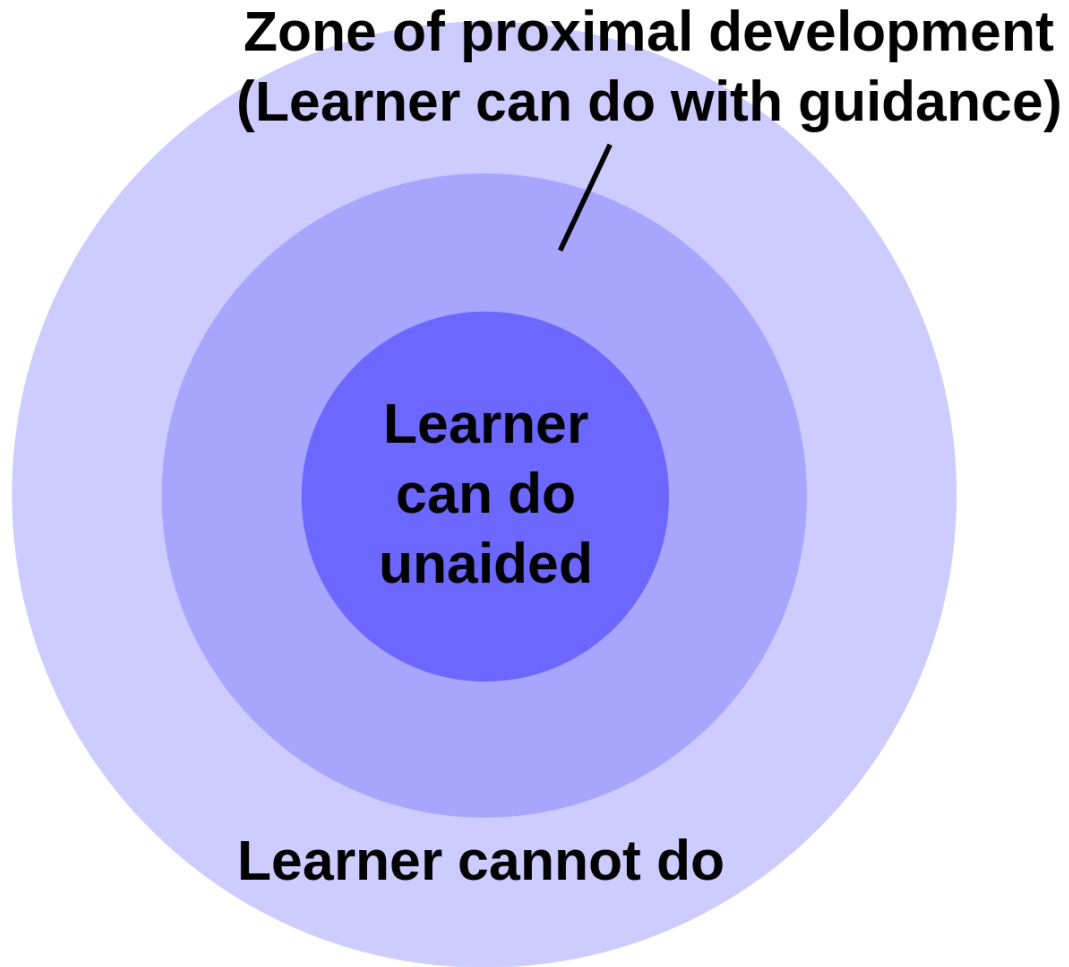
- Theorists include:
 - Vygotsky
 - Bruner
- What did you find out?

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- Constructivism is a learning theory that is actively constructed in the mind of the learners out of their experiences in the world.
 - Each learner generates his own rules and mental models through experiencing things and reflecting on those experiences
 - Learning, as described by constructivists, is simply the process of adjusting our mental models to accommodate new experiences
 - The principle is that the learners start with a complex problem and work out to discover the basic skills required to solve the problem.

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- This method of learning involves cooperative learning, experimentation, open-ended problems and real-life scenarios in which the learners discover learning on their own through active involvement with concepts and principles
 - The role of the instructors hence changes from teachers who give didactic lectures to cover a particular lesson, to facilitators who help the learners to get their own understanding of the content
 - Facilitators motivate their students to find solutions by exploring, collaborating, inventing, and experimenting

The zone of proximal development

- Distance between what a learner is capable of doing unsupported, and what they can do supported.
- Breaking up the learning into chunks and providing a tool, or structure, with each chunk
- As teachers we work with the zone of proximal development to narrow the gap between what learners can and cannot do
- Could use others – not just the teacher to do this?



Jerome Bruner

- Learning as an active process
- Relationship between the learner and teacher is central
- Language is key
- Discovery learning
- The role of the teacher as facilitator

Strengths and weaknesses

- Strength:
 - The learner is better able to adapt to real life situations since he/she will be able to tackle new problems by relating them to similar difficulties solved in the past
 - They are able to relate this particular case study to earlier ones that have been solved in the tutorial classes and come up with good solutions.
- Weakness:
 - This learning theory is not suited for circumstances where conformity in thinking and actions is required.
 - It doesn't allow for there is a right or wrong answer and there is a single way to get to that answer

Opinion...

- Do you think this is relevant to post 16 learning?
- How might it fit in with your teaching style, or
- is it a theory to be acknowledged and disregarded?

Reflections

- Having considered four different approaches to education, do you have a preferred theory?
- Does it matter what you are teaching?
- Does it depend on how you like to be taught?



Learning Styles

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Mumford and Honey (1986)

4 learning styles:

- Activist
- Reflector
- Theorist
- Pragmatist

Theorist

- Theorists like to understand the theory behind the actions. They need models, concepts and facts in order to learn. They like to analyse and synthesise, and feel uncomfortable with subjective judgements.
- Theorists learn best when:
 - an activity is backed up by ideas and concepts that form a model, system or theory
 - in a structured situation with a clear purpose
 - they have the chance to question and probe
 - required to understand a complex situation.

- Theorists learn least:

- in situations that emphasise emotions and feelings;
- when activities are unstructured or ambiguous;
- when asked to act without knowing the principles or concepts involved.

Pragmatist

- Pragmatists are keen on trying things out. They look for new ideas that can be applied to the problem in hand. They like to get on with things and tend to be impatient with open-ended discussions; they are practical, down-to earth people.
- Pragmatists learn best when:
 - there is an obvious link between the topic and a current need
 - they are shown techniques with clear practical advantages
 - they can try things out with feedback from an expert
 - they can copy an example, or emulate a role model.

•Pragmatists learn least when:

- there is no immediate practical benefit
- there are no clear guidelines on how to do it
- it appears to be ‘all theory’.

Reflector

- Reflectors learn by observing and thinking about what happened. They like to consider all the possible angles and implications before coming to a considered opinion. They spend time listening and observing, and tend to be cautious and thoughtful.
- Reflectors learn best when:
 - able to stand back and observe first
 - given time to think and investigate before commenting or acting
 - given an opportunity to review what has happened
 - doing tasks without tight deadlines.

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- Reflectors learn least when:
 - forced to take a lead in a group
 - doing things without preparation
 - rushed by deadlines.

Activist

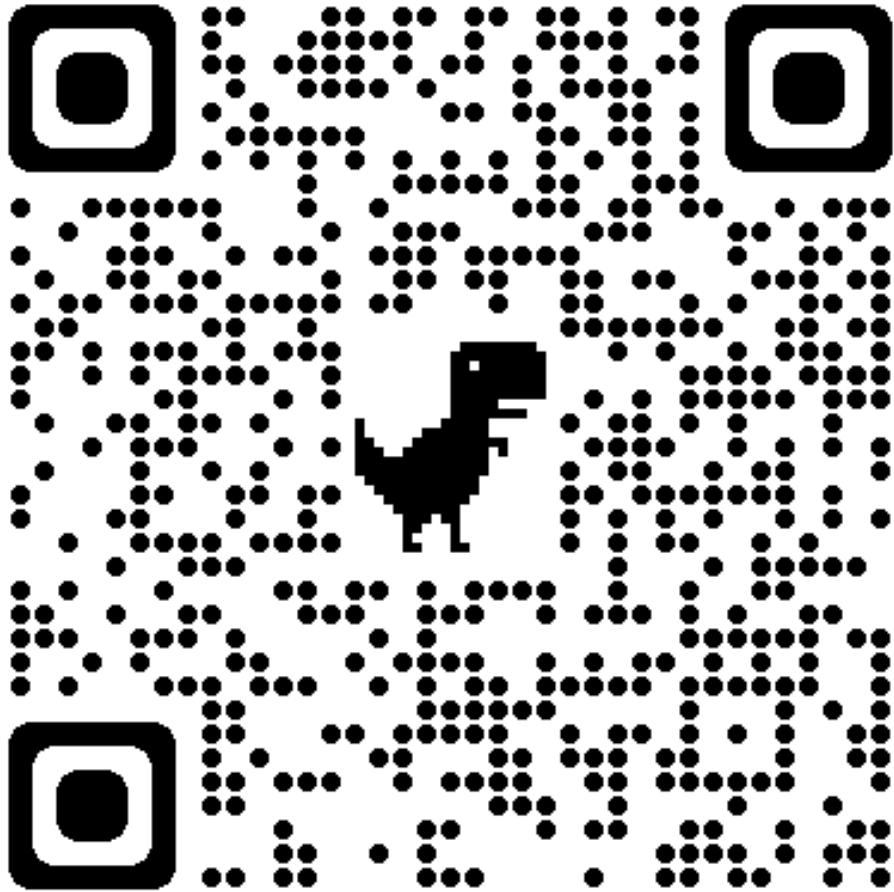
- Activists are people who learn by doing. They like to involve themselves in new experiences, and will 'try anything once'. They tend to act first and consider the consequences afterwards.
- Activists learn best when:
 - involved in new experiences, problems and opportunities
 - thrown in at the deep end
 - working with others in problem solving, games, role-playing exercises
 - able to lead a group.

- Activists learn least when:

- Listening to lectures or reading long explanations
- Reading, writing and thinking on their own; analysing and interpreting lots of data
- Following precise instructions.

Who do you think you are?

- Based on the descriptions please get yourselves into the learning style you think you are?
- Activist
- Reflector
- Theorist
- Pragmatist



Which learning style are you?

- which one are you? Pdf version:
<https://www.mycit.ie/contentfiles/Careers/4.%20HoneyandMumfordLearningStylesQuestionnaire.pdf>
- which one are you? online version:
<https://www.mint-hr.com/mumford.html>

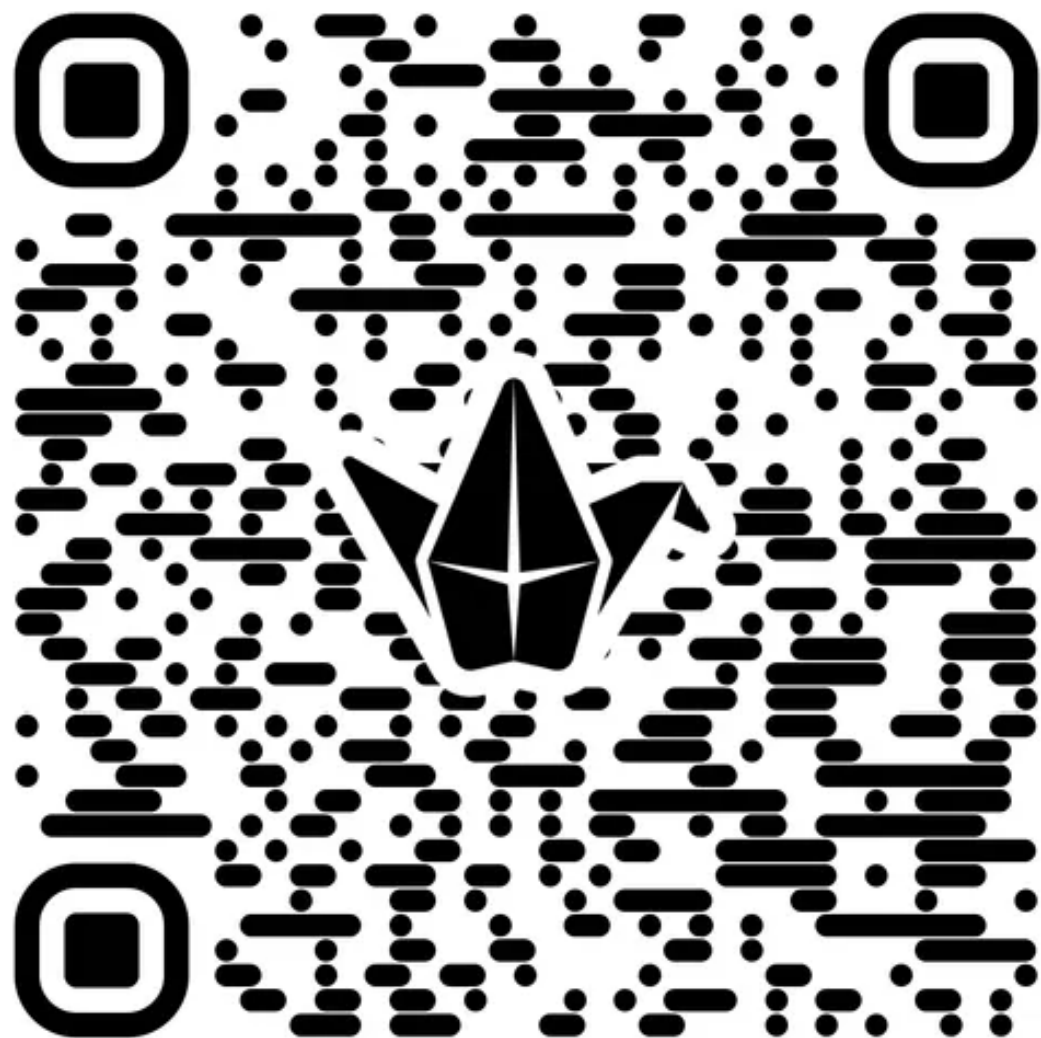
Were you right?

- Are you the learning style you thought you were?
- Why does this matter for
 - You
 - Your students



Reflective Practice

KATIE GARDNER



What is reflective practice?

- [Reflective Practice Padlet](#)
- Outline what you consider reflective practice to be
 - Words
 - Statements
 - Links to research
 - Models you might know
 - Links to websites...

Experience?

- What experience does anyone have of reflection or reflective practice?
- Did you use a specific reflective model?

What is Reflective Practice?

- An activity with purpose – i.e. to learn and apply something new
- An active process of exploration, questioning and self discovery
- Evidence of outcomes, enhanced learning and improved teaching
- A state of mind, a permanent pattern of behaviour
- Anchors theory in meaningful, concrete experience
- Gives recognition to learning gained in non-academic contexts
- Helps develop understanding of difficult work situations, improving professional practice

What Reflective Practice isn't

- A simple recall of past events
- A description of events and feelings
- A pointless exercise with no learning gained

Different models

- John Dewey
- Donald Schon
- Stephen Brookfield
- John Driscoll
- David Boud
- David Kolb
- Graham Gibbs

Schön (1930-1997) theory 1991

- Area of interest was adult and professional learning
- Adults need to learn from professional experience
- Reflection-in-action and reflection-on-action

Reflection in action (at the time the event is happening)

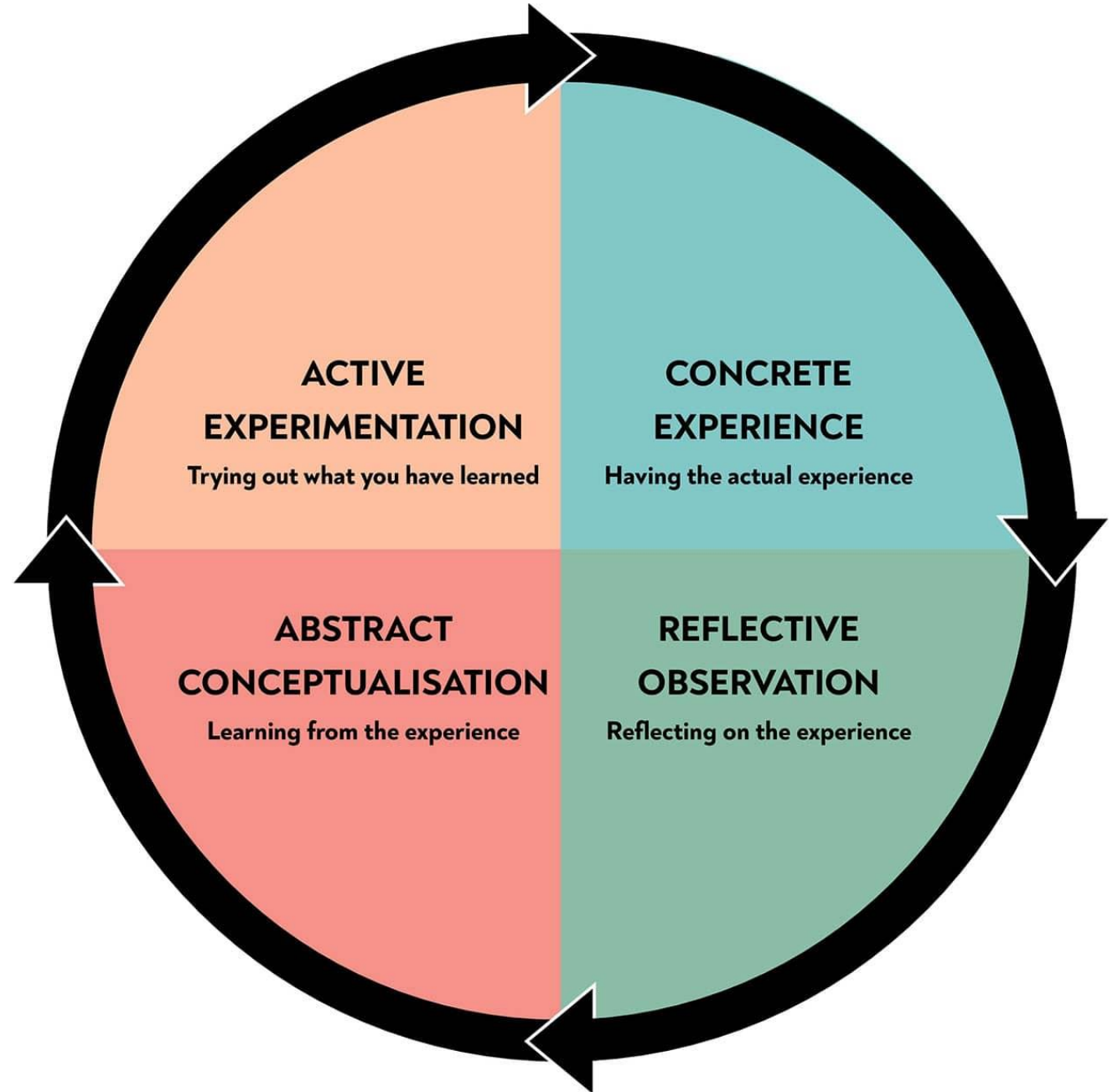
- The experience itself
- Thinking about it during the event
- Deciding how to act at the time
- Acting immediately

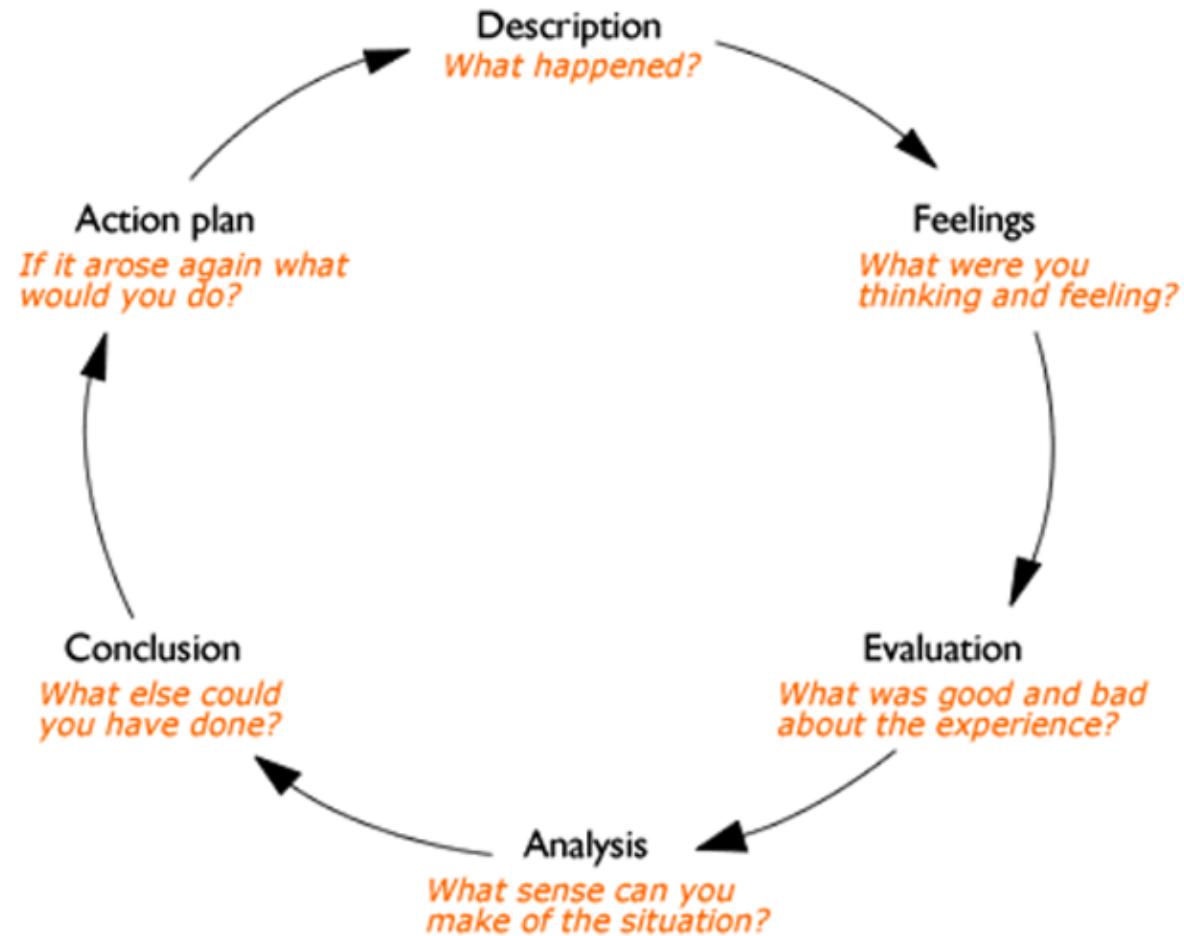
Reflection on action (after the event)

- Reflecting on something that has happened
- Thinking about what you might do differently if it happened again
- New information gained and/or theoretical perspectives from study that inform the reflector's experience are used to process feelings and actions

Kolb (1984)

- 4 stage process that transforms an event into effective learning
- Could be seen as a learning theory too



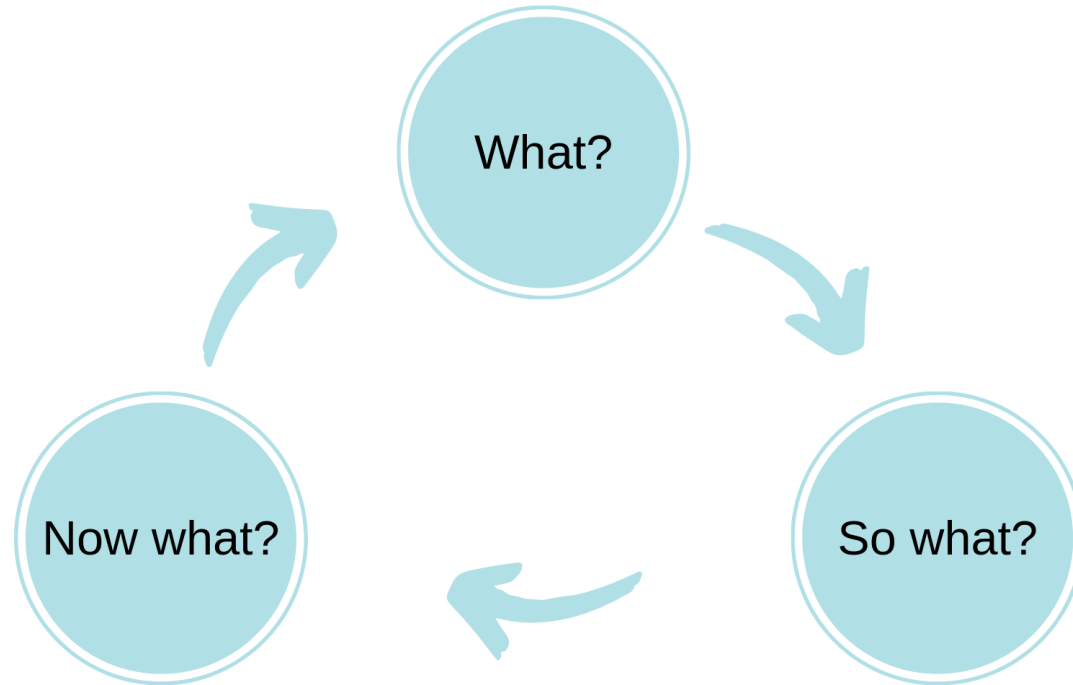


Gibbs (1998)

Applying reflection to professional practice

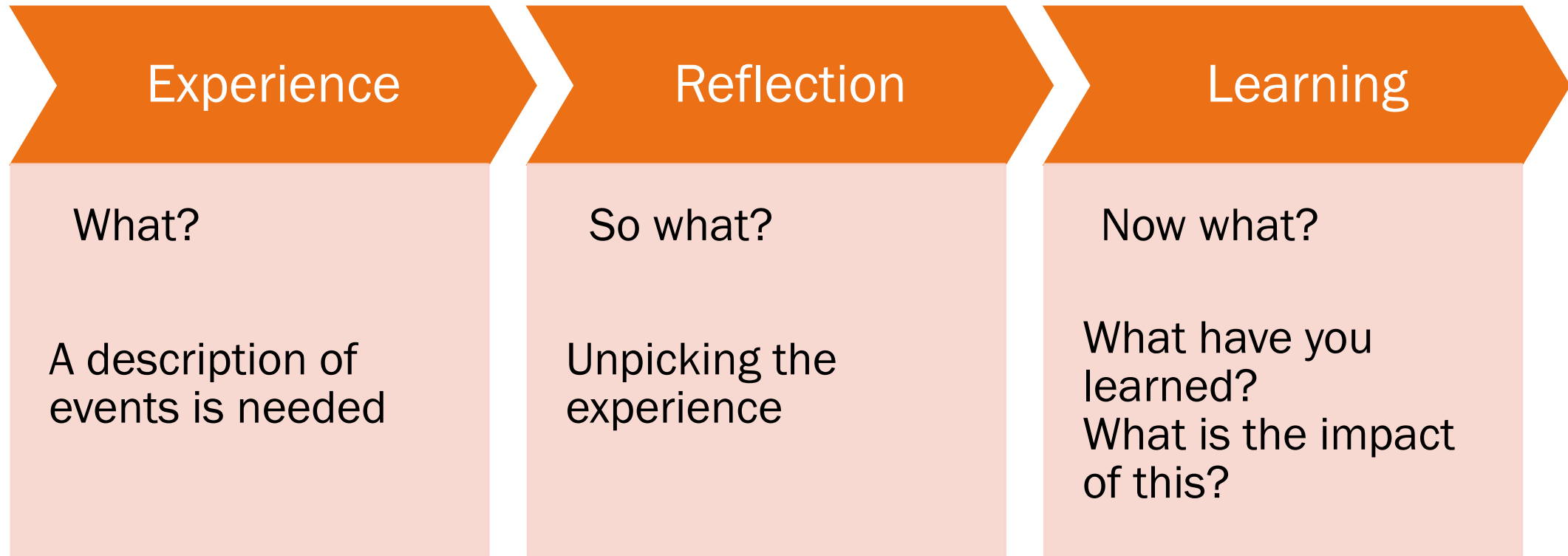
Stage 1	Experience: What happened? What is it that you are going to reflect upon. Give a description of the event.
Stage 2	Feelings: What were you thinking and feeling? Consider what your feelings were at the time and your reactions? Happy? Nervous? Confident?
Stage 3	Evaluation: What was good and bad about the situation? This is about value judgements, your experience, your subjective evaluation of the experience.
Stage 4	Analysis: Making sense of the situation – Use wider experience and sources here to supplement this.
Stage 5	Conclusion: What else could be done? – Generally think about your responses as you have outlined in evaluation and analysis. Specifically how might this may link to the way in which you work.
Stage 6	Action plan: What would you do next time? – if the situation occurred again, what would you change? How would you respond differently? Can you take any intermediate steps?

Driscoll 1990's



- Based on Terry Borton
- Asks three simple questions to begin analysing an experience

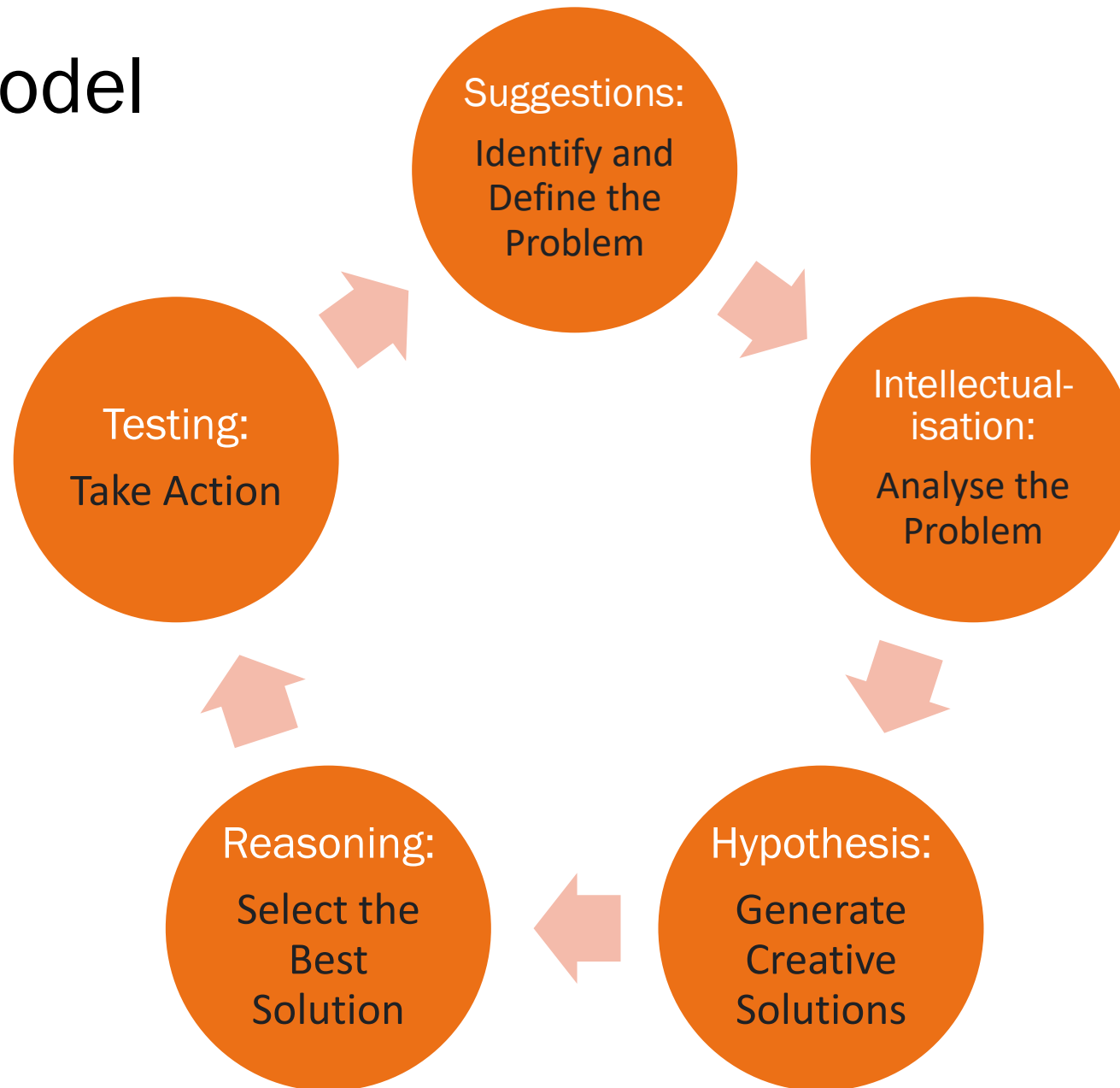
David Boud 1985



John Dewey (1859 – 1952)

- How We Think (1933)
- We engage in a process of reflective thinking that would allow a solution to be found, tried out, and resolved

Five stage model



Stephen Brookfield

- Becoming a Critically Reflective Teacher (1995).
- Specific to teaching
- 4 critical lenses

Self

Our own
autobiography
as teachers and
learners

Students

Through the
eyes of our
students

Peers

Our colleagues'
experiences

Scholarship

Theoretical
Literature

Reflection activity

- Read the 3 reflective accounts on Moodle (hard copies available if you are not on Moodle yet)
- They are an account from a presentation at a team meeting in the workplace by 22-year old after graduating.
- The accounts of the same event are written at three different levels of reflection.
- Read the accounts consider how they are written- feedback to group

Reflection activity: Example a – what are your thoughts?

- This account is descriptive and contains little reflection
- The account describes what happened. Sometimes mentioning past experiences, sometimes anticipation the future – but all in the content and of an account of the event.
- There are some references to Marianne's emotional reactions, but she has not explored how the reactions relate to her behaviour.

Example a cont...

- Ideas are taken on without questioning them or considering them in depth
- The account is written only from Marianne's point of view
- External information is mentioned but its impact on behaviour is not subject to consideration
- Generally, one point is made at a time and ideas are not linked

Reflection activity: Example b – what are your thoughts?

- An account showing some reflection
- There is description of the event, but when there are external ideas or information, the material is subjected to consideration and deliberation
- The account shows some analysis
- There is recognition of the worth of exploiting motives for behaviour
- There is willingness to be critical of action

Example b cont...

- Relevant and helpful detail is explored where it has value
- There is recognition of the overall effect of the event on self – in other words, there is some ‘standing back’ from the event
- The account is written at one point in time. It does not, therefore, demonstrate the recognition that views can change with time and more reflection. In other words, the account does not indicate a recognition that frames of reference affect the manner in which we reflect at a given time

Reflection activity: Example c – what are your thoughts?

- This account shows quite deep reflection, and it does incorporate a recognition that the frame of reference with which an event is viewed can change
- Self-questioning is evident (an 'internal dialogue' is set up at times) deliberating between different views of her own behaviour (own and others)
- Marianne takes into account the views and motives of others and considers these against her own
- She recognises how prior experience, thoughts (own and other's) interact with the production of her own behaviour

Example c cont...

- There is clear evidence of standing back from an event
- She helps herself to learn from the experience by splitting off the reflective processes from the points she wants to learn (by asterisk system)
- There is recognition that the personal frame of reference can change according to the emotional state in which it is written, the acquisition of new information, the review of ideas and the effect of time passing.

Reflective writing is...

- Your response to experiences, opinions, events or new information
- Your response to thoughts and feelings
- A way of thinking to explore your learning
- A way of making meaning out of what you study
- A way to achieve clarity and better understanding of what you are learning
- An opportunity to gain self-knowledge
- A chance to develop and reinforce writing skills

Syed, Scoular and Reaney, 2012

Reflective writing is not...

- Just conveying information, instruction or argument
- Pure description, though there may be descriptive elements
- A straightforward decision or judgement (e.g. about whether something is right or wrong, good or bad)
- Simple problem-solving
- A summary of course/conference notes
- A standard essay

Pros and cons of reflective models

PROS

- Offer a structure to be followed
- Provide a useful starting point for those unsure where to begin
- Allow you to assess all levels of a situation
- You will know when the process is complete

CONS

- Imply that steps must be followed in a defined way
- In the real world you may not start 'at the beginning'
- Models may not apply in every situation
- Reflective practice is a continuous process

Practice reflecting individual task

- Using one of the reflective cycles think of an event or situation that has happened recently
- Go through the reflective cycle step by step
- Have you learnt anything more about the event?
- Do you have an action plan as a result of it?
- What was it like using a reflective cycle?

Learning outcomes

- Introductions
- Explore key learning theories – how do adults learn
- Determine applicability of these learning theories to education now
- Identify our own learning styles and consider why it is important to PCET educators
- Explore concept of reflective practice
- Consider reflective writing for personal and professional development

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