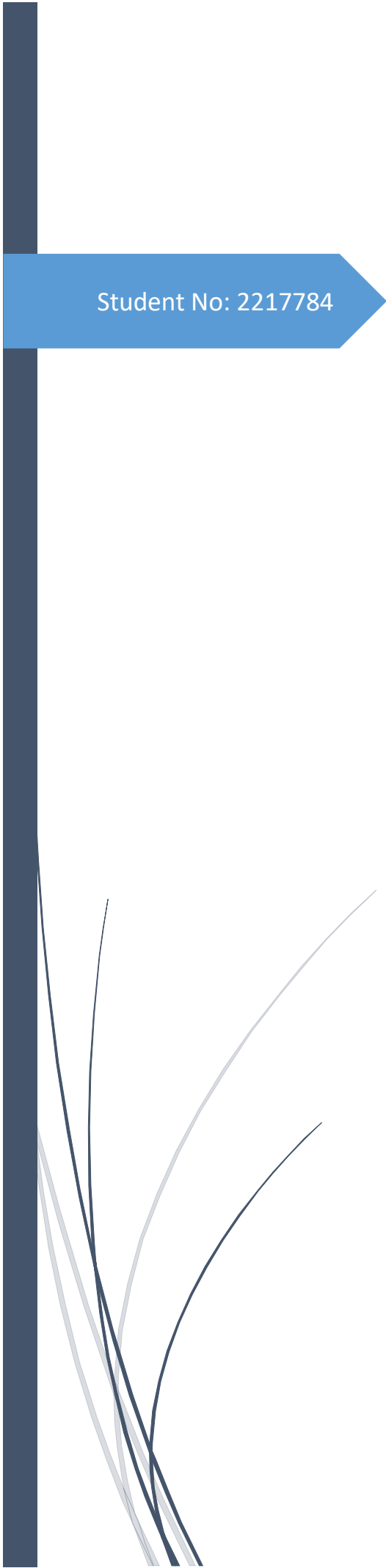


A thick dark blue vertical bar runs down the left side of the page. A blue arrow-shaped banner points to the right from this bar, containing the student number. In the bottom left corner, several thin, curved lines in dark blue and light grey sweep upwards and to the right.

Student No: 2217784

ECIE4012 THE PRINCIPALS OF LEARNING AND TEACHING

Portfolio

Shelley Holmes

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Solving the puzzle

Theories of learning have been studied for over 2500 years dating back to ancient Greece when Plato and Aristotle argued the nature v nurture debate (Bates, 2016).

Is there a puzzling learner who you just can't seem to reach? Do you wonder why some things work for one learner but not another?

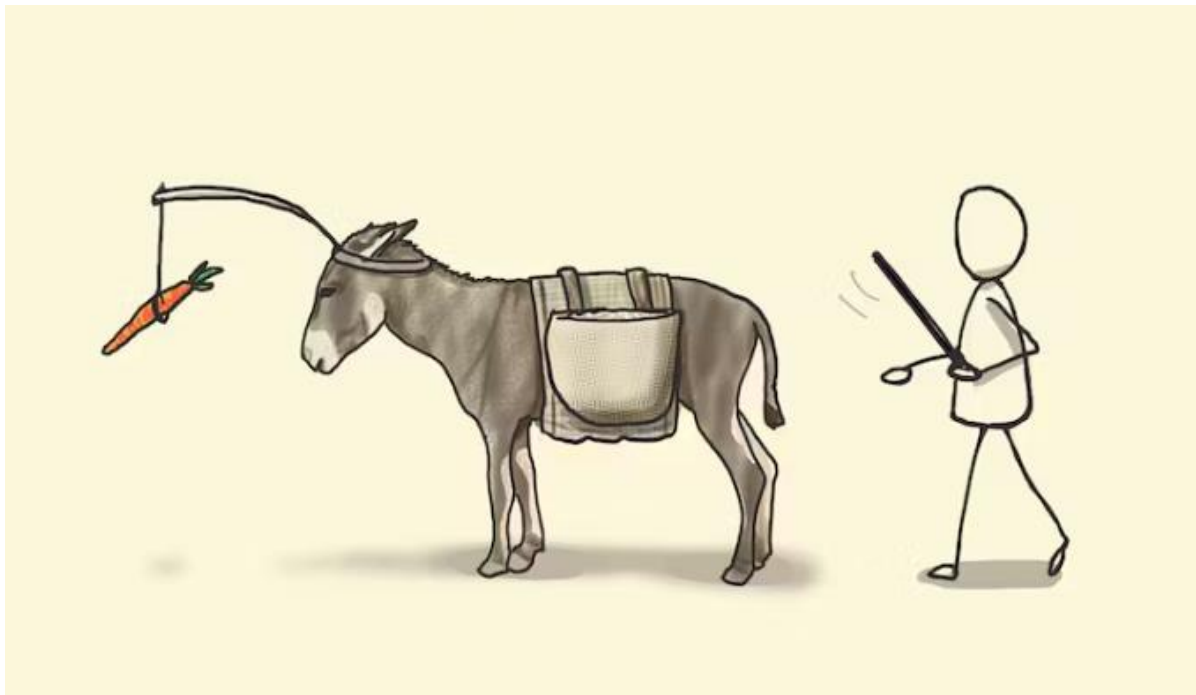
Then read on to explore some common learning theories to see if they can help solve your learner's puzzle.



The Carrot and the Stick

I'm sure you've heard the metaphor or seen the image of the donkey being led by a carrot.

Whilst trying for the third time to persuade a wriggling child to sit quietly for the promise of a sticker this image flashed into my head and it came to me that was exactly what was happening around me every day.



(Sketchplanations, no date).

Using the carrot and the stick approach seems to have become part of everyday life. From parents and employers to animal trainers the carrot and the stick is used regularly to shape behaviour all across the globe.

You can find out more about the carrot and the stick here:

https://www.youtube.com/watch?v=VyZDTsrU-_w (AI's Action English, 2020).



But how did this come to be and how is it relevant in the classroom?

Let's take a look at our first learning theory - Behaviourism - in particular B.F. Skinner's operant conditioning.

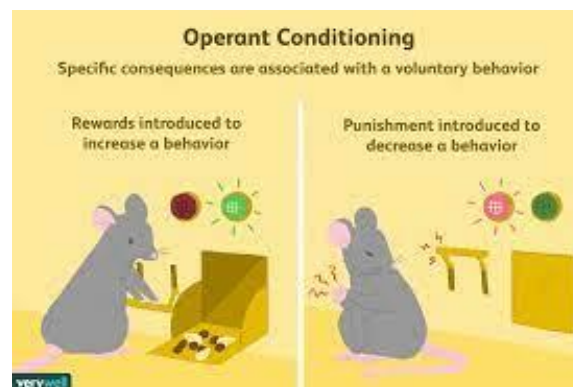
B.F Skinner



(Famous scientists, 2002)

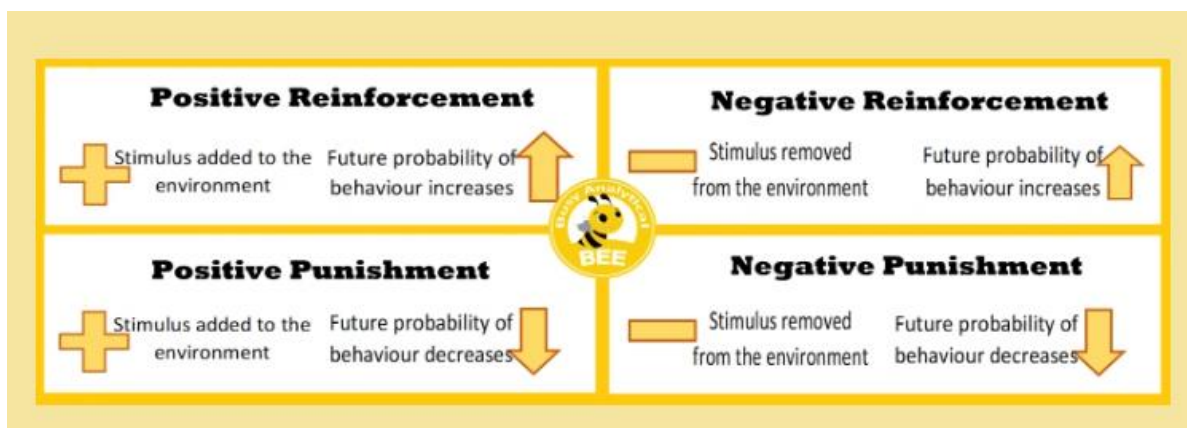
B.F. Skinner (1904 – 1990) was an American psychologist who believed that behaviours evolve through positive or negative reinforcement and are shaped through conditioning (Cherry, 2023b). Skinner built on the theories of Watson (1878-1958), Pavlov (1849-1936) and Thorndike (1874 – 1949) who all considered that behaviour is learnt

through experiences and environmental stimuli to create his theory of operant conditioning (Bates, 2016). Skinner carried out experiments on pigeons and rodents in his "Skinner Box" to test his theory that behaviour can be shaped and influenced by the consequences of actions (Skinner, 1963).



(Verywell / Seong, J, 2023).

From his research Skinner determined that individuals are active learners who when faced with a stimuli will react and learn from the response received which will either positively or negatively reinforce their behaviour (Skinner, 1963).



(Busy Analytical Bee, 2018).

Examples of operant conditioning and behaviourism (The Carrot and the Stick) can be seen in family homes, classrooms and even workplaces as a way to encourage or discourage certain types of behaviour:

Positive reinforcement - The Carrot - praise, smiles, stickers and rewards to strengthen and reinforce desired behaviour.



(Gondrong, n.d.)



Negative reinforcement - The Stick - punishment, removing privileges, time out to discourage unwanted behaviours.

(Smith, 2014)

It would be difficult to pick up a book regarding teaching and learning and not see references to Skinner or behaviourism in some form (Gray and Macblain, 2012), (McNamara and Moreton, 2012), (Morgan and Ellis, 2011). There are a number of studies promoting behaviourism methods in the classroom (Ng'andu Et al., 2013), (Parsonson, 2012) and research by the Education Endowment Foundation (2021) found that as well as reducing negative behaviours, behaviour interventions have been shown to raise attainment levels and increase pupil progress by up to 4 months.

There doesn't seem to be any doubt that managing behaviour can create structure and a predictable environment which can be ripe for learning and Skinner's behaviourism methods are promoted by the Welsh Government (2012) in the Behaviour management in the classroom: guidance for primary schools document.

Breaking down tasks into smaller manageable steps providing instant feedback and positive reinforcement can help consolidate learning and strengthen behaviour. However, can we over-reward?

To use Skinner's methods with success it is important to be aware of Skinner's reinforcement schedule:

Schedules of Reinforcement

Reinforcement Scheduled	Nature of Reinforcement	Effect on Behavior
Continuous	Reward given after each desired behavior	Fast learning of new behavior but rapid extinction
Fixed-interval	Reward given at fixed time intervals	Average and irregular performance with rapid extinction
Variable-interval	Reward given at variable times	Moderately high and stable performance with slow extinction
Fixed-ratio	Reward given at fixed amounts of output	High and stable performance attained quickly but also with rapid extinction
Variable-ratio	Reward given at variable amounts of output	Very high performance with slow extinction

(Slideserve, 2012)

Understanding the reinforcement schedule and what effect it can have on behaviour can assist with maintaining the right balance of rewards and punishment - avoiding the extinction of the behaviours we do want to see.

So if you have noticed some learners no longer responding to the carrot or even the stick this might be why. To read more about reinforcement schedules click here: <https://www.verywellmind.com/what-is-a-schedule-of-reinforcement-2794864> (Cherry, 2023a).

Whilst there are obvious positives to Skinner's behaviourism it doesn't come without its critiques, Constructivist and Social Constructivist theorists such as Piaget (1896-1980), Bruner (1915- and Vygotsky (1896-1934) felt behaviourism doesn't take into account cognition, free will or intrinsic motivation (Wearmouth, 2021).



Does the Carrot and the Stick work?

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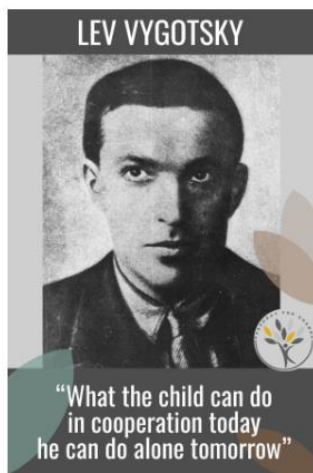
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In my previous blog [The Carrot and the Stick](#) we discussed Behaviourism as a learning theory, in particular, B.F Skinner's (1904-1990) operant conditioning.

But what if you feel behaviourism isn't the right piece of the puzzle for your learners? Why not read on to see if Vygotsky's Social Constructivism theory could be ...

The Missing Piece



Les Vygotsky (1896-1934) was a Russian psychologist who believed that culture, social interaction, communication and the environment play a significant role in a child's learning and development (Gray and Macblain, 2012). The social constructivist felt that knowledge is internally constructed and each experience and interaction with others creates a piece of the puzzle that when pieced together forms the completed jigsaw (Bates, 2016).

(Pedagogy 4 change, 2022).

There are similarities with fellow constructivist Piaget (1896-1980) which can be seen below:

Comparison of Vygotsky and Piaget's Theories

	Vygotsky's Sociocultural View	Piaget's Cognitive Developmental View
Learning is...	social and children work with others to build knowledge.	Solitary, and children learn through their own explorations.
Development is driven by...	input from others and MKO's	movement to the next stage of development
Context	Development is different depending on social and cultural context.	Development is universal and stages are the same regardless of cultural context.
Stages?	No. Development is continuous.	Yes. Development is discontinuous.
Relationship of Learning and Development	Learning precedes development.	Development precedes learning.
Role of Language	Language drives thought.	Thought drives language.
Speech	Social speech becomes inner speech which leads to the development of inner speech.	Egocentric speech dies out and becomes social speech.

(Pressbooks, no date)

Unlike Piaget, who thought that individuals constructed knowledge individually, Vygotsky believed that it is the interaction with others whom he referred to as "more knowledgeable other (MKO)" that provides the framework for learning and that understanding is shaped through these interactions (Cherry, 2022).

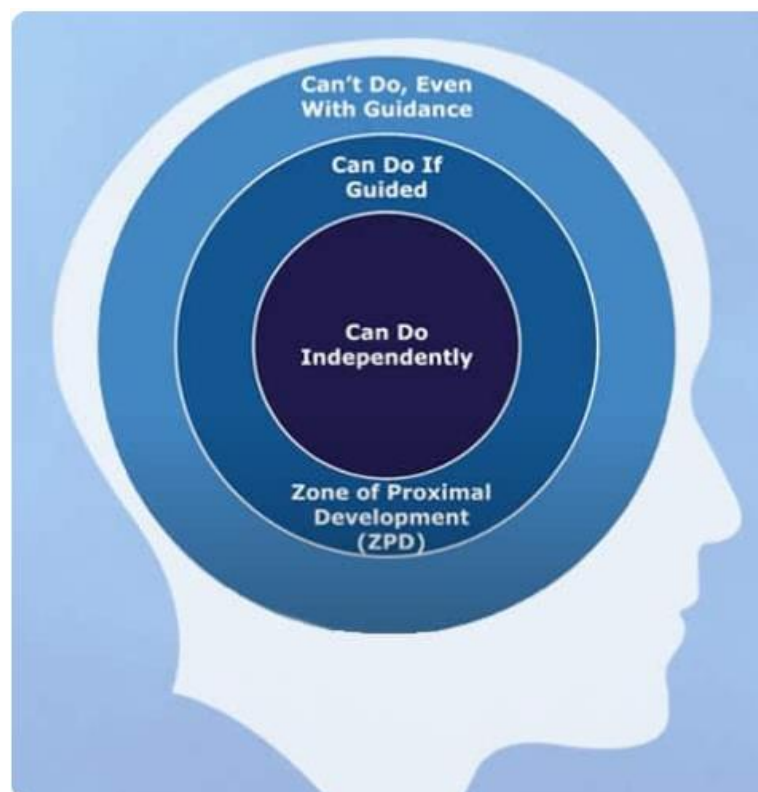
What is a more knowledgeable other (MKO)?

In short this could mean anyone with more knowledge than you...

It is important to note that the "more knowledgeable other" doesn't need to be an adult it can be anyone, friends, family, teachers or indeed peers. Studies by the Education Endowment Foundation (2021) show that effective peer tutoring can increase the progress of pupils by approximately 5 months per academic year.



Vygotsky believed that individuals have a Zone of proximal development (ZPD) as shown below:



(Goh, 2022)

This zone of proximal development is in between what an individual can do independently and what they are yet unable to achieve (Walton and Goddard, 2012). Vygotsky believed that interactions with a more knowledgeable other could facilitate and provide the necessary support and scaffolding to allow individuals to achieve more than they would have been able to achieve alone therefore learning is extended and reinforced by others (Wearmouth, 2021).



Vygotsky (1978, p.86) described the zone of proximal development as:

The distance between the actual development levels as determined by independent problem-solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers.



Think of it like helping a child with a jigsaw puzzle. When first seeing a jigsaw a child won't know what the pieces are for or how they are placed together to form the bigger picture. If they are shown strategies and have guidance from a more knowledgeable other, they can problem-solve more successfully and complete the puzzle.

As the facilitator, we are like one of these jigsaw pieces providing the scaffolding, guidance and support helping them until they finish the jigsaw and see the bigger picture. But remember it is important to be aware that each learner is an individual and each will need varying degrees of support to enable them to reach their potential.



Vygotsky's concept that each child could have a unique zone of proximal development regardless of age prompted new developments for diagnosing and supporting children with additional learning needs (Gindis, 1999), (Pound, 2014). The Welsh Government also promotes the benefits of social interaction in their Learning and Teaching Pedagogy guidance (Welsh Government, 2008) and the Route for Learning guidance (Welsh Government, 2020).

Like most theorists, Vygotsky has his critics - as he died before many of his theories were fully tested or analysed many believe that there was not enough evidence to support his theories (Pound, 2014). Other critics felt that some of his ideas were too simplistic (Ameri, 2020), (Liu and Matthews, 2005), (Van der Veer and Van Ijzendoorn, 1985) and asked what role does the child play in their own development. How does their personality affect their learning? What role does nature play?



Could Vygotsky be the Missing Piece?



(Visual Cue, n.d.)

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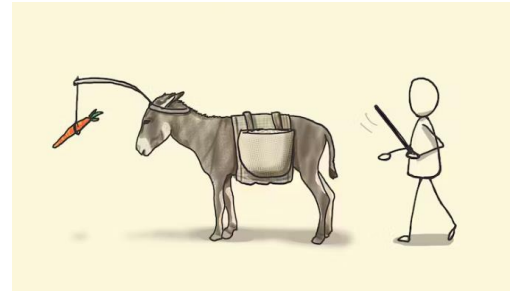
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Piecing it together

In the previous 2 blogs, [The Carrot and the Stick](#) and [The Missing Piece](#) we explored two different learning theories. Skinner's behaviourism and Vygotsky's socio-cultural theory who both have different views on how people learn.

Skinner's behaviourism theory is based on the premise that people are born a blank slate and external factors can shape behaviour. Skinner proposed that a stimulus and response or reward and punishment can change people's behaviour through shaping and what he referred to as operant conditioning (Weiss and Rosales-Ruiz, 2014).



(Sketchplanations, n.d.).

Key points relating to Skinner's theory:

- Behaviour is influenced by its consequences - Operant conditioning (Skinner, 1963).
- Environmental factors shape behaviour (Overskeid, 2018).
- Using rewards and punishments can modify behaviour (Skinner, 1963).
- Positive reinforcement - strengthen behaviours (Gray and Macblain, 2012).
- Negative reinforcement - weaken behaviours (McConnell, 1990).
- The frequency of reinforcement can greatly influence the effectiveness rewards and punishments have on behaviour (Staddon and Cerutti, 2002).
- Extinction can occur if reinforcements cease (Skinner, 1933).
- Language develops as a result of reinforcement and operant conditioning (Skinner, 1957).





Vygotsky on the other hand believed that culture plays a huge role in the development of cognition and new skills are learnt through social interaction with others.

Key points on Vygotsky theory:

- Children learn through play (Mcleod, 2023).
- Language - both internal and external speech have a significant impact on cognitive development (Liu and Matthews, 2005).
- There is a zone of proximal development which shows the range of processes a learner can perform with the support of someone with more knowledge (MKO) but is yet unable to complete without support (Main, 2022).



- A more knowledgeable other (MKO) such as an adult or peer can support a child's development through guidance and support (Cherry, 2022).
- The support provided by a MKO is known as scaffolding (Main, 2022).
- Optimum learning and cognitive development exist when individuals engage in activities within their zone of proximal development (Walton and Goddard, 2012).

As you can see the theories are very different especially if you consider how they are utilised in an education setting however, both Skinner and Vygotsky did both recognise the need for others to facilitate and guide learning albeit in different ways.

Both theories have their positives and negatives:



Operant conditioning methods have been shown to have benefits when managing behaviour in children with Autism (Gray and Macblain, 2012) and have been widely recognised by Welsh Government for positive effects in the classroom (Welsh Government, 2012).



Vygotsky's social constructivism theories, the importance of play (Bodrova, 2008), zone of proximal development (Freund, 1990), the concept of scaffolding (Shabani, Khatib and Ebadi, 2010) and a more knowledgeable other (Mcleod, 2023) have been proven to have positive effects in education and are recognised and promoted within several Welsh Government guidance documents (Welsh Government, 2008), (Welsh Government, 2010), (Welsh Government, 2012), (Welsh Government, 2020b).

A great deal of Skinner's research was carried out on animals and doesn't take into account internal thought processes and cognition so some felt that his theories were too simplistic (Bandura, 1974), (Köhler, 2018).



Ameri (2020) felt that Vygotsky's zone of proximal development doesn't show a child's individual needs or current capability and that it doesn't explain internal motivation, biological factors or why certain children rise above social norms.



In a behaviourism classroom are students actively engaged in their own learning or simply being controlled by the teacher and behaving and thinking how they are conditioned to behave? Is the constant promise of rewards or the threat of punishment causing children to lose their intrinsic motivation? Are we breeding a society that are only willing to do things for rewards? Another thing to consider is when we reward children with additional learning needs more than other children in a bid to bring out desired behaviour and to try to create a more inclusive environment are we actually creating more of a problem?

Vygotsky-type classrooms may not be the most inclusive of environments for those with sensory needs. Often lots of discussion brings lots of noise! Is a busy bustling noisy environment suitable for our more neurodivergent learners? Could a Vygotsky classroom be an inclusive classroom?



Do these theories promote an inclusive child-centered education system where a child's wishes and feelings are taken into account as stated in the Welsh Government (2021) Additional Learning Needs Code? Do they link in with four purposes in the new Curriculum for Wales (Welsh Government, 2020a) and consider children's rights and opinions (Children's Commissioner for Wales, 2017)?



Depending on your viewpoint could behaviourism be considered as adults exerting control, manipulating the environment and those in it to create the right conditions for learning, imparting knowledge on children to fill their blank slate?

Is Vygotsky's social learning theory in comparison, about collaboration, working with others, encouraging the sharing of information and creating a supportive structure in which to learn with a facilitator acting as a guide (Blakemore and Frith, 2005).



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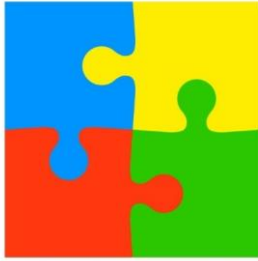
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The Final Piece

Having explored Skinner and Vygotsky's learning theories in my previous blogs you may now be asking what these theories look in reality how do they translate to the real world! Read on to take a look...

So what does behaviourism look like:

Much like in many classrooms, workplaces and family homes across the globe the Carrot and Stick approach is there for all to see in a family learning environment.

Behaviourism could be thought of as a foundation for education, even life, conditioning people to learn and behave a certain way to create a functioning society (Ng'andu et al., 2013).

We all need some rules and some direction don't we?

A fundamental foundation of a family learning classroom is ensuring that from the outset both adults and children understand what they can expect and what is expected of them thus creating the right conditions for learning (Skinner, 1963).



Breaking down tasks into small manageable chunks and providing step-by-step guides and instruction ensuring all parties have an understanding of the task at hand ensures a positive experience for all involved.



(Gondrong, n.d.)

It is essential to give instant praise and reinforcement especially when families are learning something new together. Giving plenty of positive reinforcement to both adult and child is a necessity, this could be in the form of a simple well done, a certificate or for families to show and share their achievements and receive some praise (Morgan and Ellis, 2011). Often the adults don't very often receive any praise themselves.

What does socio-cultural theory look like?



A family learning classroom is very much an example of Vygotsky's Social Constructivism. Learning together through group work (Welsh Government, 2010), social interaction, the sharing of ideas and the undertaking of tasks together using a more knowledgeable other whether this be the adult, child, peer or another family to scaffold learning (Freund, 1990), (McLeod, 2023).



Promoting play and the benefits of play to encourage families to use the skills and ideas they have gained in the family learning classroom again at home encouraging emotional, social and cognitive development (Ginsburg, 2007).

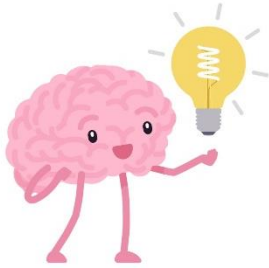
In some family sessions, we use the "Jigsaw" type method to encourage social interaction and learning. Bringing together different values, cultures and families to learn from each other and provide an opportunity for modelling, support and the sharing of knowledge (Jigsaw Classroom, 2019).



Voice 21 methods are another way we have used Vygotsky type theories in the family learning classroom. Using oracy as a way for families to work together and to develop their cognitive skills and impart their knowledge and understand onto others. Find out about Voice 21 (2022) here

<https://voice21.org/>.

(Voice 21, 2022)



Something to think about...

Although we have looked at these strategies singularly by individual theorists they can be used holistically merging Vygotsky and Skinner to create an even better experience in the classroom. For example the use of social reinforcement - a parent giving praise to the child, the child praising the adult, family praising another family. Or using the positive parts of each theory to create a more welcoming classroom experience for all.

My thoughts



Although behaviourism (The Carrot and the Stick) undoubtedly has its place I can't help but think these methods alone don't always engage or inspire pupils! Although we need to consider how Vygotsky's methods will work with a more inclusive approach in my opinion these methods lean more towards a personalised child-centered approach with an opportunity for hands-on learning, problem solving and social interaction which fits more with the Welsh Government's priorities, the Curriculum for Wales (Welsh Government, 2020), UNICEF's (2014) Inclusive Education guidance and the Welsh Government (2021) The Additional Learning Needs Code.



Regardless of your thoughts on whether Skinner's behaviourism theory or Vygotsky's social constructivism theories are right for your learners sometimes it is easy to lose sight of the diverse ways in which others see the world and how they learn. The more we understand about learning and teaching theories the more likely we are to be able to find the strategies and resources to help support each individual learner creating a more supportive inclusive child-centered approach to teaching and learning and a more effective learning environment for all.

So what are you waiting for?

Why not try some learning theories out today and see if you can solve your learners puzzle.



The Final Piece - Reference list

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