



SELINUS UNIVERSITY
OF SCIENCES AND LITERATURE

Do primary educational environments and experiences shape our motivation to further educate ourselves as adults

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A DISSERTATION

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DECLARATION

I declare that this research report is my own unaided work.

It is being submitted in partial fulfilment of the requirements to award the Doctor of Philosophy Degree in Education and Pedagogy at Selinus University. I have no knowledge of a similar paper submitted before, in any other academic institution.

A handwritten signature in black ink, appearing to read 'K. H. H. H.', with a horizontal line drawn through the middle of the letters.

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SECTION A

1. Introduction

The primary school years are the first steps to learning in an educational setting which brings with it new rules and routines, but also trains the brain to begin strategic and critical thinking within the practice of uninterrupted learning. In essence, it is where the fundamentals for life begin.

Primary school is where we obtain our first 'real world' experiences, whether they are good or bad, and this too can shape our outlook for most, and sometimes all other experiences that happen in the future.

Whether we continue into further education once mandatory education has concluded or not, our first steps in education are taken and remembered in the primary school years. Therefore, this time period is crucial to attempt to answer whether primary educational environments and experiences shape our motivation to further educate ourselves as adults. In other words, does a child's experience at school affect their learning for life?

Furthermore, if that is the case, and the learning process is unsuccessful (for whatever reason), is it the student who is responsible, the teacher, is it a combination of both or is it neither? These are the roots of the questions I hope to answer with this study.

Though our memories are not complete snapshots of any event, certain areas that have captured our attention will stay with us for long periods of time. However, if we have a bad experience, that typically stays with us for a longer time.

The key age range will differ slightly depending on the country, but the typical primary school age range is 5 to 11 years. I have chosen this age range to focus on because most individuals will move on to a secondary school setting once they are around the age of 11 years, even if the individual begins learning adventure later, due to the country's rules, social, economic reasons or any learning difficulties of the student.

2. The format for the content and results of this study

The areas of focus can exhaustively branch off into other nuances, therefore in order to fully attempt to answer the main question. It is important to assess how we as humans learn, how teachers are expected to teach, and to discover if the experiences we receive in school are key contributors to motivate further learning opportunities as a student grows older.

I will look at several main areas to support this, such as:

- **Human development and how humans learn** – this section will look into how we (as in humans) develop, and the different ways in which we develop as this can influence, and sometimes interfere, with our ability to learn.
- **How humans are educated (or taught)** - there will be crossover with the previous portion, but this section will detail pedagogy, generational teaching, educational psychology, teaching styles, mandatory education, and obligations/responsibilities for both the teacher and the student (but with particular emphasis on the teacher).

I will also look at the differences between learning and education and the behaviour of the student, particularly when learning is accepted or rejected. If there are experiences of impact then possible reasons will also be identified if it is in scope of the main question.

- **Case study** - I devised an analysis to identify patterns and links between education and life/career choices. Through a series of questions involving the participants experiences in mandatory education, and what they feel their influences were. If the questionnaire is successful, it may also discover any other influences and/or experiences that the participants were unaware of.

An additional case study which has been carried out by a governing authority, will also be included in measurement of wellbeing and experiences throughout the mandatory schooling period.

- **Other attributes** such as wellbeing, the impact of happiness or stress, environmental setting, sociology, special educational needs, teacher struggles and other issues that can affect the learning process will also be included in an additional section as well as the other sections mentioned above.

Educational psychology will present itself regularly during this thesis, as the topic involves the brain, memory, cognitive development, mindset, awareness, perception, behaviour and so on. Therefore, while the main topic will orbit education, due to the nature of the question being asked, I will also concentrate on the modern approach of educational psychology in specific areas.

While there has been mention of 'school' as in the public setting, this reference will also include homeschooling, and the requirements needed to satisfy goals, resources and assessments.

In addition to the topics above, I will also include examples which furthermore effect the learning process such as influences inside and outside of school, the effects of too much work on young individuals, the effects of working parents, behaviour and the responses to happiness and stress, the importance of play; adaptability, technology and more.

3. About the author

My name is Kelly Foxhall-Ridgeway, and I have worked in the legal sector for over 20 years. I have practised law, worked in legal technologies and alongside both I have mentored and trained legal and support staff.

Training and learning in the workplace are different from mandatory education in a school environment. I regularly see how adults learn, and I can normally tell within a short period of time whether they have had good previous learning experiences or not.

Where the reluctance to learn comes from is never discovered for privacy reasons, but it has often made me question where the behaviour for learning stems, and whether the enthusiasm or reluctance to learn comes from childhood and education settings and experiences.

SECTION B

1. Chapter 1 - Human development and how humans learn

In this section I am going to concentrate on how humans learn, and then move on to look at the learning models and methods and what can affect the learning process which can then coil over to the experiences one obtains in school.

In order to analyse the main question of this thesis, I will briefly cover how humans develop, which involves the advancement of the brain and also other areas which contribute to the learning process.

The intention is to establish the traits or characteristics relevant in the first stages of life. In many countries this period will then overlap into the beginning of mandatory education.

Human development gives some fragrance to early years evolvment, and also how it affects the educational setting. It is in general fascinating, and it is important when looking into the topic of education, especially when a person's opinion and/or reaction towards learning can be influenced by other sources.

I will limit this study to certain age ranges. It is often said that a human will learn more in the first five years of life than in the same space of time for the rest of their existence and this is true to a certain extent as most children will learn to communicate, eat (then eat solids), walk, toilet train, learn how to dress themselves, read, write and basic arithmetic. However, the main focus for this paper will be on the age range of 5 to 11 years as stated in the introduction.

1.1. Development and why it is important

It is not necessary to know about human development in its entirety for this paper, but having a basic understanding will help formulate a conclusion as to how we (as humans) learn. It can also help determine what can hinder the learning process and whether it is from the learning provider, or our own doing.

The term 'development' refers to long-term personal changes that have multiple sources and multiple effects. Some human development is especially broad and can take years to unfold. A person's ever-evolving ability to 'read' another person's moods, for example, may take a lifetime to master. Other developments, such as reading a book is typically faster and has become part of our core growth.

The difference between learning and development is a matter of degree. When a child learns to name the planets of the solar system, for example, the child may not need a lot of time, nor does the learning involve a multitude of experiences. So, it is probably better to think of this particular example as a learning experience rather than development ([Salkind, 2004; Lewis, 1997](#)).

The faster and simpler the change is, the more likely the change is 'learning' instead of development. Many aspects of children's learning and development follow well documented sequences, with later abilities, skills and knowledge building on those already acquired.

Development and learning proceed at varying rates from child to child, as well as at uneven rates across different areas of a child's individual functioning. It results from a dynamic and continuous interaction of biological maturation and experience.

Early experiences have profound effects, both cumulative and delayed, on a child's development and learning; and optimal periods exist for certain types of development and learning to occur ([NAEYC Principles of Child Development](#)).

Development proceeds towards greater complexity, self-regulation, and symbolic or representational capacities.

Children develop best when they have secure, consistent relationships with responsive adults and opportunities for positive relationships with peers.

Children are normally always mentally active in seeking to understand the world around them, and humans in general learn in a variety of ways; a wide range of teaching strategies and interactions are effective in supporting all of these kinds of learning.

Play is an important vehicle for developing self-regulation as well as for promoting language, cognition, and social competence and I will cover this more in later sections.

Development and learning advance when children are challenged to achieve at a level just beyond their current mastery, and also when they have many opportunities to practise newly acquired skills.

1.2. Why Early Childhood Matters

The NCDHHS (an official website of the State of North Carolina), posted an [article](#) regarding why early childhood matters.

It states:

'Early childhood experiences from birth to age 8 affect the development of the brain's architecture, which provides the foundation for all future learning, behaviour and health. A strong foundation helps children develop the skills they need to become well-functioning adults.'

A child's growth and development can be divided into four periods:

1. Infancy;
2. Preschool years;
3. Middle childhood years; and
4. Adolescence.

The pattern of child development is complex because it is the product of several processes such as biological, cognitive and emotional. This means it is not as simple as visually processing something to learn it, or a tutor telling someone something, when other independent contributors are involved.

Biological processes underlie the development of our brain and can gain in some areas of physical appearance.

1.2.1. Cognitive processes

Cognitive processes involve changes in the way we think. For children this is also the case but also it involves the changes in their intelligence and language. The cognitive development of a child is learnt in relation with the growth of the

brain. Good brain development results in good cognitive development of the child.

1.2.2. Emotional and environmental settings

Emotional processes and environmental settings have also proven to be crucial to a child's development, however this can be said for any stage throughout a person's life. For a child, an emotional process involves changes in the child's relationship with others, as well as in their emotion, personality and interpersonal relationships. It also includes how to understand and exercise control of the different emotions.

An example of the physical environment can include the air the child breathes and the nutritional value of food the child eats, exposure to conditions that can lead to disease, accident, or injury, including child abuse and neglect to name a few.

How this is applied in the learning environment, can include the degree and type of stimulation available in the child's immediate environment. Sensory input promotes and shapes cognitive development which affects the learning process.

1.2.3. Erik Erikson

[Erik Erikson](#) was a German-American developmental psychologist and psychoanalyst known for his theory on psychological development of human beings. He developed a theory of social (or psychosocial) development, a high level of which is set out in the following stages:

Stage 1 – Infancy period: Trust vs. Mistrust

Example: Secure environment provided by the caregiver, with regular access to affection and food.

Stage 2 – Early Childhood period: Autonomy vs. Shame, doubt

Example: Caregiver promotes self-sufficiency while maintaining a secure environment

Stage 3 – Play Age period: Initiative vs. Guilt

Example: Caregiver encourages, supports, and guides the child's own initiatives and interests

Stage 4 – School Age period: Industry vs. Inferiority

Example: Reasonable expectations set in school and at home, with praise for their accomplishments.

Stage 5 – Adolescence period: Identity vs. Identity confusion

Example: Previous experiences are considered, societal expectations, and their aspirations in establishing values and 'finding themselves.'

Stage 6 – Young Adulthood period: Intimacy vs. Isolation

Example: Individual forms close friendships or long-term partnership

Stage 7 – Adulthood period: Generativity vs. Stagnation/Self-absorption

Example: Engagement with the next generation through parenting, coaching, or teaching

Stage 8 – Old Age period: Integrity vs. Despair

Example: Contemplation and acknowledgment of personal life accomplishments

There are additional stages, but it is not necessary to list them for the purposes of this thesis.

As the focus is on primary school age, stage 4 will be the most prevalent to define as it details the expectations, and new pressures a child of this age is required to adapt to in the course of their development.

Once in primary school, the child is faced for the first time with becoming competent and worthy in the eyes of their caregivers, classmates and teachers. Whether inadvertently or not, they have more people to prove themselves to it seems, which in turn can create new worry.

To achieve their esteem, the student must develop skills that require effort that is sustained and somewhat focused. To be respected by teachers, for example, the child must learn to read and to behave like a 'model student'. To be respected by peers, they must learn to cooperate and be socially acceptable, among other things.

While there are rewards, there are also risks. If the child does succeed, they are able to experience the satisfaction of accomplishment or a job 'well done' (something that Erikson called 'industry').

However, if the child does not succeed, the child risks feeling inferior (amongst other things) compared to their fellow students.

This feeling can stay with the child for the foreseeable, tainting future prospects if not guided properly. Teachers therefore have a direct, explicit role in helping students to resolve this crisis in favour of industry (or success). They can set realistic academic goals for students, ones that tend to lead to success, and then provide materials and assistance for students to reach their goals.

Teachers can also express their confidence in the student, which will help motivate them if they feel they cannot meet their goals and become discouraged. Paradoxically, these strategies will work best if the teacher is also tolerant of less than perfect performance by the student. Too much emphasis on perfection can undermine some students' confidence, and foster inferiority by making academic goals seem beyond reach.

Parents or caregivers are also crucial to development and in the educational setting. If their child is struggling then working with the teacher will provide more support, and ideally a more successful outcome. This does however depend on the communication and willingness to work together on the part of the teachers and parents/caregivers.

With regards to learning, if this is rejected, then the cognitivist theory is that it is simply a series of reactions to stimuli. I will look into this further in other sections.

Cognitivism came to prominence in the 1950s as a response to behaviourism. Cognitivist theories refer to the mind like a computer, and focus on how information is received, organised for storage and retrieved. Therefore, learning is also seen in this manner.

Memory is an important part of learning, assimilation and retention and I will look at this, as well as Cognitive Information Processing Theory ('CIP') in respect of learning (and teaching), in other sections.

1.2.4. Jean Piaget

Jean Piaget was a Swiss psychologist who researched children's cognitive development based on the development of his three children. His theory and findings explained how children construct a mental model of the world.

Jean Piaget was a pioneer in child development and studied an account of how children and youth gradually become able to think logically and scientifically.

According to Piaget, every child goes through the same developmental process, irrelevant of their level of intelligence. He disagreed that intelligence was a fixed trait and regarded cognitive development as a process which occurs due to biological maturation and interaction with the environment.

Piaget's theory also included stage, which are set out below:

Sensorimotor;

Preoperational;

Concrete operational; and

Formal operational.

Piaget's theories supported teachers providing appropriate learning experiences and materials, to stimulate students and advance their own thinking. Children think differently compared to adults, and this means that their learning needs are also different.

The two stages for focus in this thesis, are the preoperational stage, and the concrete operational stage, collectively ranging from the ages of 2-11 years.

(i) The preoperational stage: age 2 to 7

In the preoperational stage, children use their ability to represent objects in a wide variety of activities, such as play, but they have to develop it in an

organised manner, or a fully logical approach. An example of this could be during play a child uses a banana to represent a phone, or pours an invisible cup of tea.

At some level, the child will know the banana is not really a telephone; it is merely representing a telephone, and the interesting element to this is that the child is thinking on two levels at the same time; one imaginative and the other realistic.

This dual processing of experience makes dramatic play an early example of metacognition (an awareness of one's thought processes and an understanding of the patterns behind them).

The concrete operational stage: age 7 to 11

Most children, irrelevant of the country they reside in will begin primary school during the preoperational stage and this continues on through the concrete operational stage.

As children progress in primary school, they become able to represent ideas and events more flexibly and logically. Their 'rules' of thinking still seem very basic by adult standards and usually operate unconsciously, but these rules allow children to solve problems more systematically than before which they also use and transfer to academic tasks.

Piaget called this period the concrete operational stage because children mentally 'operate' on concrete objects and events. However, they typically are not yet able to think systematically about representations of objects or events, which usually develop during adolescence.

Development is important in an education setting, as much as identifying the structure and organisation of the learning. However, for the teacher (or trainer), it is beneficial to know as they can then identify any gaps in the learning process, which may be due to an issue with development. This may also impact the student in later years and create an unwanted experience.

A source which can influence future experiences is perhaps a poor upbringing. If this happens in the first years of life it can be reflected in a child's development, namely, dissatisfaction with life, which can impact social and personal relationships, increase learning difficulties (which are not necessarily neurological), and turning to a life of crime, violence or addiction.

Further potential contributory factors will be looked into later in this paper.

1.3. How humans learn: Learning styles, models and techniques

'The more that you read, the more things you will know. The more that you learn, the more places you'll go.' **Dr Seuss**

As previously described, learning is generally defined as relatively permanent changes in behaviour, skills, knowledge, or attitudes resulting from identifiable psychological or social experiences. Changes do not count as learning if they are temporary.

1.3.1. Aptitude

Aptitude is the natural ability to do something and/or learn a topic, there it is no instinctive learning per se. For example, I obtained 7 diplomas in 2022 in psychology and special educational needs taking 4-6 weeks to complete each one. However, it took several months for me to understand a new language on a rudimentary level. Without practice I forget the new language quickly, but I can still remember the modules and information from the diplomas I took.

Is this a case of aptitude, or one topic interesting me more than another, or needing a different learning method to retain the new information. These areas will be reviewed further in this thesis.

According to the [Johnson O'Connor Research Foundation](#), aptitudes are natural talents or abilities, which predict the potential to do, or learn to do, certain kinds of tasks quickly and easily. They can also be thought of as inclinations or tendencies and are generally unaffected by knowledge, culture, education, or even interests. They have more to do with how you were born than what you might have been influenced by. It is important for us to know that we cannot be good at everything, and that is what makes us different.

1.3.2. Learning process

A high-level overview of the learning process is all that is needed for this paper. It is important to know the learning process because this could be a contributory factor to experiences and long-term effects in primary education that could lead into adolescence and even adulthood.

There is no doubt that experiences in primary school play a part in a child's development and their future, however, education is a requirement.

As we get older the lines blur between learning and education. Controlling skilled actions is when we first try to learn a new skill but we are also cautious of our actions. This is controlled by the motor cortex at the top of the brain, and as we practise those actions, they become automated and control of them passes to the cerebellum at the back of the brain. When this happens, we can carry out the new skills smoothly without pondering too much.

Learning occurs using all five of the human senses ([Dugan Laird 1985](#)), and is often referred to as representational systems in neuro linguistic programming ('NLP'). These senses (along with the sensory channels used represent our experiences) are:

- Touch / Kinaesthetic (emotions, touch and bodily sensations);
- Taste / Gustatory;
- Hearing / Auditory;
- Sight / Visual; and
- Smell / Olfactory.

In addition, we can make sense of our experience with auditory digital which is self-talk.

Research shows that if learning experiences are created that engage multiple senses in relevant ways, the process of learning can happen easily.

We all process information in different ways, some of us prefer to learn with the aid of visual notes on a flip chart, or perhaps PowerPoint presentation whereas other people may be more hands-on and in order to learn they may need to be actively involved in a kinaesthetic way. In order to engage all students, it is important to include as many learning styles as possible.

Our memories, imagination and current experiences are made up of elements of the above representational systems. Most of us use one system more than the others which are often referred to as predicates.

1.3.3. Types of Learning Styles?

Even though every individual is unique and processes information in their own way, research has discovered that there are seven types of learning styles or categories that the majority of humans fall into.

The concept of personalised learning styles dates back to the 1970's and has been an influencing factor in education since. One of the common and widely adopted frameworks is Neil Fleming's VARK model (Visual, Auditory, Reading and writing, and Kinaesthetic).

[Howard Gardner's multiple intelligence theory](#) known as the seven learning styles is an expanded form of Fleming's model, and is listed as follows:

Visual (Spatial)

As the name suggests, visual students are those that learn best when they have an image, video clip or cue to help them process the information they may also need to map out or write out their thoughts in order to fully process what they are thinking.

Visual students typically have a good spatial sense and sense of direction. They can easily visualise objects, plans, and outcomes like colouring, drawing, and doodling. They also have good colour balance.

Aural (Auditory-Musical)

Aural learning is used to classify those who respond primarily to sound and find that certain music evokes strong emotions. They often listen to music in the background while learning and have a good sense of pitch or rhythm and tend to use clever rhymes to remember something. They respond best to the likes of binaural beats (which is an illusion created by the brain when you listen to two tones with slightly different frequencies at the same time).

Most musicians are aural students and this learning style is not typically addressed in schools because it can be hard to teach outside of a music class.

Verbal (Linguistic)

Verbal students learn best both under verbal instruction and writing. They can gravitate towards public speaking roles, writing, journalism, and debating. They typically enjoy reading and writing, they like tongue twisters and rhymes and have a large vocabulary.

Reading definitions of a word aloud or writing them down a few times, are ways for verbal students to process information.

Physical (Kinaesthetic)

Physical students are animated and always need to be moving. They learn best by going through the motions of what they are learning.

Physical students appreciate the physical world around them, such as textures, and they typically enjoy sports and exercise which can help them problem solve, along with outdoor activities and working with their hands. These types of students tend to use and pick up on body language and enjoy making models or doing jigsaw puzzles.

Logical (Mathematical)

Most logical thinkers end up being engineers, mathematicians, or pursuing the sciences because they are individuals who want to understand the reason behind something. They do this by compartmentalising information to better understand it and perform complex calculations, or create procedures for future use, after coming up with a solution to a problem.

They tend to enjoy games like chess and brainteasers.

Social (Interpersonal)

Social students are natural group workers and are individuals that seem to be involved in every extracurricular activity. For adults, they are individuals that like to be engaged with others, work on teams, and ask their peers for feedback in order to learn.

Social students prefer to socialise after work or class, they enjoy playing group sports, bouncing ideas off of others, they listen well and are often trusted by others for their advice.

Solitary (Intrapersonal)

Solitary students are individuals who think independently and simply prefer to learn on their own and keep to themselves.

In most situations, this is a learning style for socially introverted people, but it is not exclusive. These individuals tend to be concerned with goals and outcomes, they can spend time on self-analysis, they prefer to relax or travel away from crowds, and tend to journal, write, and record personal thoughts and events as a way to improve themselves.

A cognitive learning style is impulsivity (compared to reflectivity, detailed below). As the name implies, an impulsive cognitive style is one in which a person reacts quickly, but as a result makes comparatively more errors.

A reflective style is the opposite, the person reacts slower and therefore makes fewer errors. The reflective style would seem better suited to many academic demands of school.

Research has found that this is indeed the case for academic skills that clearly benefit from reflection, such as mathematical problem solving or certain reading tasks ([Evans, 2004](#)).

In mandatory education a set of learning styles should always be adopted to cater for the needs of the different children being educated, but this doesn't always happen, and sometimes it is not possible depending on the class structure and the students.

Everyone learns differently and education for children clearly differs greatly from adult learning as when we become adults, we have the experiences and the wisdom by that point to understand our strengths and weaknesses and know what type of learning is better for us. That does not necessarily mean we choose correctly but as adults we have more flexibility. For example, in mandatory education if a student thrives in an independent learning environment, then a classroom with other children may prove to be a challenge.

1.3.4. Subliminal learning

[Medical News Today](#) states that you can learn in your sleep. There has been speculation for years regarding whether this process works, and it seems like a productive method, but the consequences involve putting too much pressure on ourselves, both mentally and biologically to perform.

Sleep-learning (also known as hypnopædia or hypnopedia) is an attempt to convey information to a sleeping person, typically by playing a sound recording to them while they sleep.

Learning in your sleep forms habits, or attitudes acquired from exposure to stimuli presented below the threshold for conscious awareness.

Findings suggest that it is possible for the sleeping brain to absorb information and even form new memories, but these memories are implicit, or unconscious or inaccessible when awake.

However, if the subliminal teaching is that of a new language, even if the student is not paying attention, their brain should automatically remember commonly repeated words and form connections between those words and their definitions in their native tongue. The same practice can also be carried out while multitasking.

For example, learning a language which is being played on a mobile phone while doing something like housework, or even swimming using an underwater MP3 player. If the primary task one is doing does not require much

concentration because it has been extensively practiced in the past, then the student will have the opportunity to allot more concentration to the topic they are learning.

The above also corroborates with sensory learning, and using multiple senses as previously described. It may also be the reason why children, who are normally distracted by lots of things, have the capability to repeat accurately what has been said to them, even when the parent thinks the child was not listening. Though I don't know many teachers who would be happy about students sleeping during class under the pretence of experimenting with subliminal learning.

1.3.5. Communication and language

Transfer and communication are crucial outcomes of Learning.

Another result of focusing the concept of learning on classrooms is that it raises issues of usefulness or transfer, which is the ability to use knowledge or skills in situations beyond the ones in which they are acquired.

Learning to read and learning to solve arithmetic problems, for example, are major goals of the primary school curriculum because those skills are meant to be used not only inside the classroom, but outside as well.

The learning styles associated with communication are visual, auditory and kinaesthetic. For example, for children with speech and language disorders, auditory processing may be slower or obstructed, so a verbal learning method may need to be adopted by the teacher.

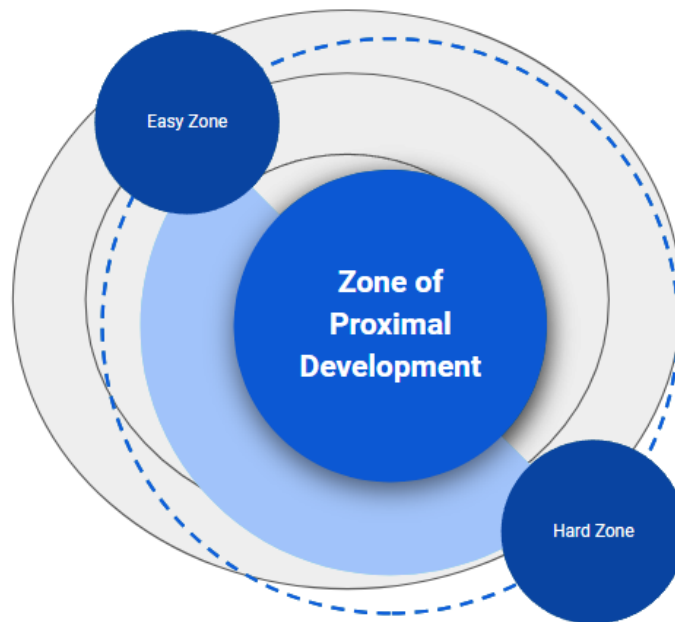
Communication can be catered for in different ways, such as visual cues which allows a child to effectively communicate with the teacher.

Lev Vygotsky (who came after Jean Piaget), said:

'What the child can do in cooperation today he can do alone tomorrow. Therefore, the only good kind of instruction is that which marches ahead of development and leads it. For a time, our schools favoured the 'complex' system of instruction, which was believed to be adapted to the child's way of thinking. In offering the child problems he was able to handle without help, this method failed to utilise the zone of proximal development and to lead the child to what he could not yet do.' Quoted in Alexander, RJ, 2000.

Piagetian ideas were dominant in the 1960s and 1970s and expressed the importance of a child's interaction with the world, and the importance of teachers' ability to assess a child's readiness for learning, but what continued on from this under [Vygotsky's research](#) was the importance of dialogue the social context of learning and teachers' ability to support a pupil's learning beyond their current stage of understanding, or perhaps development.

1.3.6. Zone of Proximal Development



Source: K J Foxhall-Ridgeway recreated based on the information from 'The Little Book of Psychology', page 71

- **Easy Zone** - What the student can accomplish without any help
- **Zone of Proximal Development** - What the student can do with help from a 'knowledgeable other'
- **Hard Zone** - What the student cannot accomplish / beyond the student's abilities

Vygotsky differed from Piaget in that he emphasised the role of social interaction in a child's development, he believed that learning takes place when a child is supported through their zone of proximal development by a more knowledgeable other such as a parent teacher or peer. This [zone of proximal development](#) lies between a child's current abilities and their potential abilities.

A more knowledgeable mother supports the child in moving through their zone of proximal development by deliberately challenging their abilities and understanding but not so much as to cause the child to experience frustration or failure.

The child has to have the necessary skills to meet and understand the challenge while also being supported in order to make progress. If the child does not have the necessary skills, then further investigation is required.

If for example an autistic child becomes overwhelmed, they are likely to outburst and maybe exit the room which can also disrupt the rest of the class, having a discreet method of communication may assist the child's modesty and trust

between them and the learning provider, which also provides a safe and secure environment.

1.3.7. Learning techniques

Learning is not a single skill, it takes many different forms according to the book '[Instant Psychology](#)', by Nicky Hayes and Sarah Tomley.

Psychology developed its understanding of human learning through the second half of the 20th century, this included the processes involved in cognitive and social learning. Human learning includes basic processes like S-R (stimulus and response) learning but it also includes abstract cognition and complex social processes.

In 1949 Donald O. Hebb, a Canadian psychologist, proposed that learning happens when the same brain cells connect frequently, and as a result those connections grow larger. As the link becomes stronger, this creates cell assemblies which are a group of cells forming familiar routes for nerve impulses. Studies from brain scanning have supported Hebb's ideas that learning is not localised in any specific area of the brain, but most of our learning is directed by the outer layer of the cerebrum. This is larger and more folded in more intelligent animals, particularly dolphins, whales and humans.

Hebb theorised that as we learn, the biology of our brain changes to accommodate new information.

There are several forms of learning such as:

- S-R learning;
- Law of Effect which is the belief that a pleasing after-effect strengthens the action that produced it;
- One-trial learning, where learning takes place in a single pairing of a response and stimulus and is not strengthened over time by repeated exposure to a stimulus;
- Social learning which suggests that social behaviour is learned by observing and imitating the behaviour of others;
- Skill learning which is the learning of a task to give accuracy, speed and performance after a high degree of practice;
- Schema development which is acquired and constructed through experiences with specific instances; and
- Self-efficacy and mindset, which is a person's belief in their ability to complete a task or achieve a goal, and students with a growth mindset choose activities in which they will learn more.

As time goes by, education and the options available to help students, as well as the way it is delivered, continues to change. The more change and additional

processes for teachers means a higher risk of teachers and students becoming overwhelmed with work. The need for adaptability then takes precedence, demoting the learning experience rather than concentrating on providing a smooth motivational setting.

Education, irrelevant of the age, requires time and knowledge of the subjects being learned, motivation, discipline which will in turn encourage the mindset needed to learn.

1.3.8. Learning models

There will be lots of crossover between this section and the next as the models and methods of learning and teaching are very much aligned.

Learning models can differ depending on age group. For example, for children in primary education in the UK, there are five primary educational learning theories: behaviourism, cognitive, constructivism, humanism, and connectivism. Additional learning theories include transformative, social, and experiential.

For adults, depending on where the learning and development is focused, it could be that the model needs to produce specific driven results for the workplace.

[The Kirkpatrick Model](#) includes 4 levels which are **Reaction, Learning, Behaviour** and **Results**. This can also be included when assessing the learning styles of children.

For example:

Did the children enjoy the learning?

In which case they are likely to be motivated the next time they learn.

Did the children learn something new?

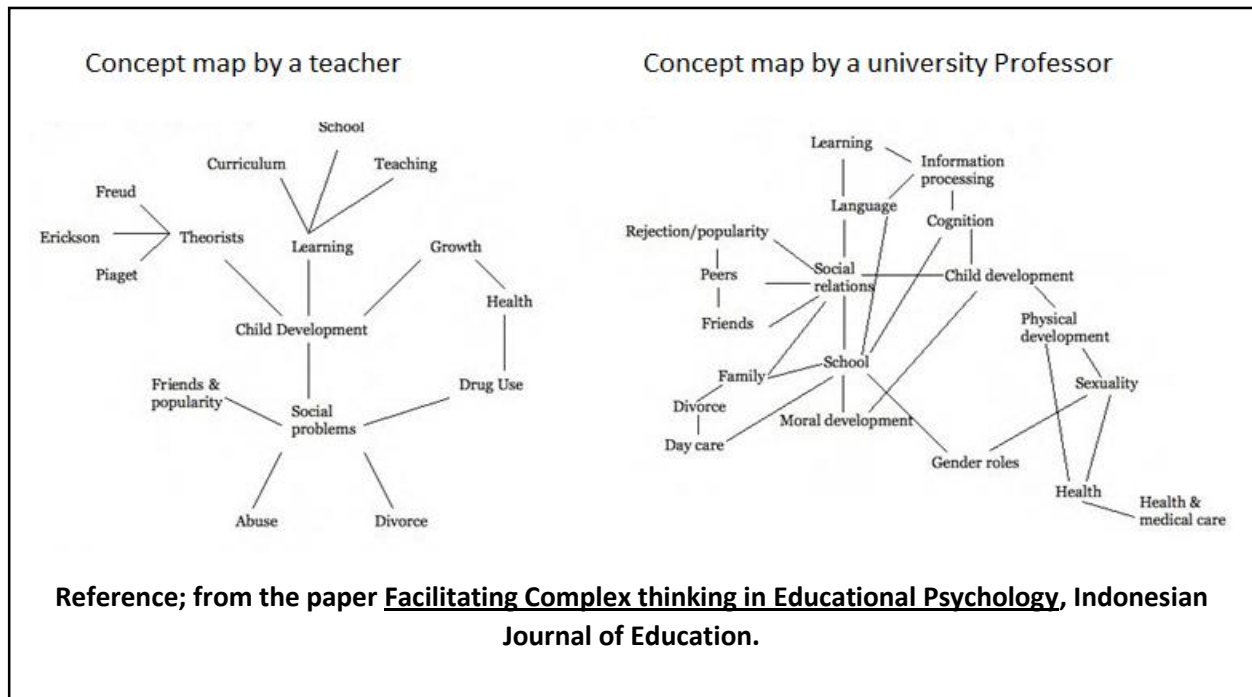
No matter how much effort one applies, in a lesson it doesn't always happen.

Did the child's behaviour change as a result of the learning, and did the training have a measurable impact on their performance?

Basically, did they improve in a topic they were learning?

1.3.9. Interpretations of child development and learning

The diagram below shows concept maps made by two individuals that graphically depict how a key idea, child development, relates to learning and education. The first map was drawn by a classroom teacher and the second by a university professor of psychology.



The above suggests possible differences in how the two individuals think about children and their development, and if these individuals think differently, it is likely that others will have their own interpretations too.

Not surprisingly, the teacher gave more prominence to practical concerns (for example, classroom learning and child abuse), and the professor gave more prominence to theoretical pinpoints (for example, Erik Erikson and Piaget).

The differences have the potential to create misunderstandings between them ([Seifert, 1999](#); [Super & Harkness, 2003](#)). By the same token, the two maps also suggest what each person might need to learn from the other in order to achieve a better understanding of the other person's thinking and ideas.

Another interesting analysis of the same material would have been between a teacher and professor education, rather than a professor of psychology.

1.3.10. Learn through play

Friedrich Froebel was a German educator who invented the kindergarten. [He believed that](#) 'play is the highest expression of human development in childhood for it alone is the free expression of what is in the child's soul.'

According to Froebel, in play children construct their understanding of the world through direct experience with it. His ideas about learning through nature and the importance of play have spread throughout the world.

Sociologist Mildred Parten discovered that there are different types of play that a child will take part in depending on their age, mood and social setting.

Parten's 6 stages of play are detailed on the [Michigan State University's website](#).

Play serves an important role in allowing children to practise a variety of skills, and competencies, practising different types of skills in a safe context. It allows children to learn from mistakes as well as to enhance physical and mental skills through repetition.

Many young animals develop physical skills and abilities that they will need in their adult lives. Therefore, it makes sense that humans also have the same pattern of learning. Play can include objects for social play, from simply playing alongside other children to actively cooperate with each other and wordplay (jokes, puns or rhymes), or just sit or play with the sounds of words.

Research shows childhood play impacts future career paths and there have been several studies that show child development and the importance of play.

Given the abundant research that play is fundamental in supporting a whole range of intellectual, emotional and social abilities, it seems self-evident that children who, for whatever reason, very little play or not at all would detriment a child's development.

For example, according to psychiatrist [Dr. Stuart Brown](#), when children are deprived of play, the consequences can be 'catastrophic'. In 2014, he was already raising alarm of societal and global play deficits on children. He states that sustained, moderate to severe play deprivation particularly during the first 10 years of life is linked to major emotional dysregulation; i.e., increased prevalence of depression, a tendency to become inflexible in thought, diminished impulse control, less self-regulation, poor management of aggression, and fragility and shallowness of enduring interpersonal relationships.

The capacity to play never truly leaves us as many individuals still play (quite often computer games) into adulthood. Parents will also play with children, and this can vary from formalised play in quizzes, board games, computer gaming to sports and/or leisure activities. These leisure activities reflect how we can continue to develop skills and abilities throughout life, not just in childhood.

2. Chapter 2 - How humans are taught

The differences between learning and education mainly fall down to nature and the character of the individual. Learning can be instinctive, a subconscious reaction, or part of our development. We learn through our senses and environment, and sometimes learning is just something that happens without us knowing or without our control, whereas education is typically planned or structured with a set of intended goals.

A learning experience in education is most effective when the focus is on the student as opposed to the teacher, but both play an equally important role. However, in certain situations there will be more onus on the teacher to provide guidance and motivation.

Learning describes a process of adapting to new information, and while we are all self-taught on many topics, there are other areas where we will need someone to teach us.

This section details how humans are trained or taught and (as mentioned before) there will be crossover with the previous section, but this section will focus more on teaching and educational learning.

In a paper published for UKM Teaching and Learning Congress 2011, entitled '[The role of education in shaping youth's national identity](#)', the introduction mentions that education develops a country's economy and society, therefore it is the 'milestone' of a nation's development.

Education also provides knowledge and skills to the population as well as shaping the personality of the youth of a nation. While the rest of the paper does not hold much relevance to this study, the statement that education does not only affect personal development but on more of a national scale cannot be ignored. This has a double-edged sword effect where it can empower some, but apply more pressure to others.

2.1. Educational psychology

Without understanding the needs of an individual there is little way to cater their learning. As this thesis concentrates on experiences, and reactions according to those experiences, within an education setting, it is logical to also include information on educational psychology.

Educational psychology is how people learn and develop in an educational setting. Traditionally, it was concerned with how school children succeeded or failed in their attempts to assimilate new information during their lessons, but modern educational psychology also looks at how older children and adults learn in their respective settings (such as college or university, and institutions that offer training and/or qualifications).

The three elements of this branch of applied psychology are:

- Education;
- Psychology; and
- Neuroscience.

It is concerned with the application of the principles, techniques, and other resources of psychology, to try and solve problems confronting the teacher. It also attempts to direct the growth of children towards defined objectives.

Educational psychology doesn't just involve the learning process of an individual, it also includes the social, emotional and cognitive processes that are involved in learning throughout any individual's lifespan, and encompasses behaviour modification examples for those that are not as driven when it comes to learning.

Part of an educational psychologist's work is to identify and evaluate special needs, and recommending appropriate strategies. For example, this may include recognising dyslexia or dyspraxia in the early stages, creating adjusted learning context for autistic children, making sure that children with physical disabilities are able to use school facilities, or recommend alternative arrangements for high achieving children.

While these individuals are important in an educational setting, the teachers who are teaching children every day should also have a certain understanding about how to identify particular struggles in the classroom. At the same time, they can also help with any stereotypes and labelling that may be used in the actual educational setting, such as a child with special needs being thought of as 'stupid' or under achieving.

Several ideas and priorities affect how teachers think about learning, including the curriculum, the difference between teaching and learning, sequencing, readiness, and transfer.

Many theories, concepts, and ideas from educational psychology do make it through the 'screen' of education, meaning that they endeavour to be consistent with the professional priorities of teachers, and helpful in solving important problems of classroom teaching.

In the case of issues surrounding classroom learning, for example, educational psychologists have developed a number of theories and concepts that are relevant, in that they describe at least some of what usually happens there and offer guidance.

Consider two perspectives about learning:

1. **Behaviourism** (learning as changes in overt behaviour); and
2. **Constructivism** (learning as changes in thinking).

The second, which is of particular focus for this thesis, can be further divided into psychological constructivism (changes in thinking resulting from individual experiences), and social constructivism (knowledge is constructed through interaction with others).

Below gives a timeline of those that paved the way in educational psychology:

- **Aristotle** (384 – 322 B.C.): student of Plato (who was a student of Socrates), who stated that comprehension was aided by contiguity, succession, similarity and contrast.
- **John Amos Comenius (1592-1670)**, pioneered age differences in children's ability to learn and that they learn more effectively when they are involved with experiences that they can assimilate

- **John Locke (1632-1704)**, published that people learn primarily from external forces, and cannot learn from being alone.
- **Jean Jacques Rousseau (1712-1778)**, proposed the new theory of educational pedagogy (the study of how children study or learn).
- **Johann Pestalozzi (1746-1827)**, was the first known applied educational psychologist who taught children by learning through activities.
- **Johan Herbart (1776- 1841)**, was also known as the father of scientific pedagogy and who distinguished the first instructional process from subject matter 'Herbartianism'.
- **William James (1842-1910)**, gave a series of lectures to teachers in which he discussed the application of psychology in educating children.
- **Wilhelm Wundt (1832- 1920)**, was a Herbartian psychologist and known as the father of modern psychology.
- **Edward Titchener (1867-1927)**, was a student of Wundt and was the first eminent educational psychologist to practise in America.
- **E.L.Thorndike (1874-1949)**, initiated an emphasis on assessment and measurement, and argued that one of schooling's most important tasks is to motivate children's reasoning skills.
- **John Dewey (1859-1952)**, was a major pioneer in educational psychology.
- **Jean Piaget (1896-1980)**, as mentioned in the previous section Piaget's research was on children's cognitive development.
- **B.F Skinner (1904-1990)**, was an American psychologist who worked at Harvard University and became one of the leaders of behaviourism.
- **James Bruner (1915 - 2016)**, was an American psychologist who made significant contributions to human cognitive psychology and cognitive learning theory.
- **Albert Bandura OC (1925 - 2021)**, was a Canadian-American psychologist who focused on social learning theory. Albert Bandura focused on how children subjectively copied the behaviours of adults which lead to the understanding of how a child's environment affects their learning and their behaviour in general.

His studies were an analysis of watching his subjects and how they reacted to certain scenarios. The famous 'Bobo doll experiment' is the collective name for a series of experiments performed by psychologist Albert Bandura to test his social learning theory. Between 1961 and 1963, he studied children's behaviour after watching an adult model act aggressively towards a Bobo doll.

Albert Bandura's social learning and [observational](#) theory suggests that observation and modelling play a primary role in how and why people learn. Bandura's theory goes beyond the perception of learning being the result of direct experience with the environment.

- **Howard Gardner (1943 -)**, is an American developmental psychologist and the John H. and Elisabeth A. Hobbs Research Professor of Cognition and Education at the Harvard Graduate School of Education at Harvard University.

In the latter part of the 20th century, educational psychologists have increasingly focused on socio-emotional aspects of pupils' lives and information processing.

There are many pioneers who paved the way in the functioning processes of **education**, and they are as follows:

- **Friedrick Froebel (1782 - 1852)**, was a German educator who laid the foundation for modern education based on the recognition that children have unique needs and capabilities and highlighted the importance of play.
- **Horace Mann (1796 - 1859)**, was an American educational reformer, known for his commitment to promoting public education, also known as The Father of American Education.
- **Charlotte Mason (1842 - 1923)**, was a British educator who invested her life in improving the quality of children's education. She proposed to base the education of children upon a wide and liberal curriculum.
- **Margaret Bancroft (1854 - 1912)**, was a Philadelphia school teacher who is said to have turned the educational system on its head in 1883.
- **Maria Montessori (1870 - 1952)**, was an Italian physician and educator known for her philosophy of education and her writing on scientific pedagogy.
- **Jean Piaget (1896 - 1980)**, has been previously described.
- **John Holt (1923 - 1985)**, was an American author and educator, a proponent of homeschooling, and a pioneer in youth rights theory.
- **Dame Marie Clay (1926 - 2007)**, was a researcher from New Zealand known for her work in educational literacy. She was committed to the idea that children who struggle to learn to read and write can be helped with early intervention.

The topics covered in the following sections compliment the aims and work of the above-mentioned pioneers. Looking at the timelines of both educational psychology and educators, it shows that leaps were made in educational psychology, concentrating on the mind and the way people learn. While the evolution of education also happened, where new processes and methods were introduced, it was clear that the educators were also involved in other topics at the time, such as politics. Whether this affected the progression of the practice, or the educators' experience in teaching is yet to be determined, but would be good research under another heading outside of this paper.

Student development matters for teachers, but the way it matters depends partly on how schooling is organised. In teaching a single self-contained year group, the benefits of knowing about development will be less explicit, but just as real, as if one teaches many year groups. Working exclusively with a single year group highlights differences among students that are happening despite their similar ages, and obscures similarities that happen because of having similar ages.

2.2. What is 'mandatory education'?

In reference to the previous paragraph, it is good to have a high-level understanding of how education has progressed to become mandatory. The reason for this is in connection with experiences in the educational setting, and to see if any processes and/or the curriculum hinders a child mentally and knowledgeably during development.

The [History of Education](#) explains the timeline of education in the UK from the beginning of compulsory state education in 1870 to present day. In the UK one of the most significant changes to education was the introduction of the Education Act.

The Act began in 1944 and significant changes happened again in 1986.

[The Butler Education Act](#) of 1944, gave further options in schools, and allowed teachers to take more control, but specified very little when it came to curriculum.

The 1986 Act introduced the requirement that the Local education authorities (LEAs), had to give governors financial information on the financing of schools.

It took the proposals in the 1985 White Paper, 'Better Schools', arguing for breadth, balance and progression in order to achieve standards in literacy and numeracy.

[Better Schools opened with](#): 'The Government will: take the lead in promoting national agreement about the purposes and the content of the curriculum.'

The Great Education Reform Bill 1988 (generally known as Gerbil) was seen as the most important Education Act since the 1944 Act which aimed to give more power to schools. However, from the LEAs' point of view, it was taking power from them and giving it to the Secretary of State.

The Act had large implications for primary schools and the government proposed a common, national, curriculum for pupils aged 5 to 16. This was a shift away from teachers deciding what was taught to the central government having control. The curriculum was in discrete subjects and there were three core subjects (English, mathematics and science) and seven foundation subjects. Prior to this, teachers wrote schemes of work they considered appropriate for their pupils.

As the years progressed there were further changes around assessments and educational excellence. These reforms are examples where the government has the interests in mind, but were not actually working in the forefront where the teachers were, so they did not have first-hand experience. When they invited the teachers to become more involved the changes were more beneficial, however there are still times where the government makes changes and does not consider the impact it has on the teachers and the children they are trying to teach.

Mandatory education differs by country but most will have some form of compulsory or structured educational program.

In the UK the National curriculum was implemented into primary schools in 1989. The implementation continued into primary and secondary schools in the mid-1990s. The current curriculum in the UK takes into consideration homeschooling methods.

The first run of key stage testing (which tests English grammar, punctuation, and spelling) was completed in 1991.

In the rest of the EU, APAC and the US things were differently implemented, but a mandatory education system was in place for all countries.

When reviewing the timeline, it was clear that politics and money soon became integrated in the decision making for education. Some of the pioneers listed above also were involved in politics which would have been around the same time.

As with most industries, answerable reasons for funding, economic questions and corporate measures are integrated as part of good business practices. At the point this becomes forefront and stabilises as normal, is also likely to be the time teachers and children are impacted.

Core education, which in some countries starts at 4 years old, typically lasts until 16 to 18 years. Then the student is able to go out into the workplace for themselves or they can opt for further education, and this is the point of choice. It is the choice of the student to do this, maybe with the influence of outside factors such as family or following what their friends are doing if they have no personal preference.

The drawbacks to some modern-day teaching establishments include very young children in large classes, where the teacher has to coordinate not only the students, but several teaching assistants. This can mean a lot of work which could inadvertently have an effect on what is being taught. Teachers ideally need to have the space and time to encourage and motivate so they obtain the best out of each student.

2.3. Viewing Learning as Dependent on Curriculum

When teachers speak of learning, they tend to emphasise whatever is taught in schools deliberately, including both the official curriculum and the various behaviours and routines that make classrooms run smoothly.

In practice, defining learning in this way often means that teachers equate learning with the major forms of academic achievement especially language and mathematics and to a lesser extent musical skills, physical coordination, or social sensitivity ([Gardner, 1999, 2006](#)).

A side effect of viewing learning as dependent on a curriculum or academics, is that classroom social interactions and behaviours become issues for teachers. They turn into tasks that they need to manage. In particular, having dozens of students in one room makes it more likely that a teacher thinks of 'learning' as something that either takes concentration (to avoid being distracted by others) or that benefits from collaboration (to take advantage of their presence).

In practice when teachers are dealing with a class of at least 30 children, trying to cater the learning to every child is virtually impossible. There is only so much adaptability one can ask of a child.

In the small space of a classroom, no other viewpoint about social interaction makes sense. Yet in the wider world outside of school, learning often does happen incidentally, 'accidentally' and without conscious interference or input from others.

Teachers sometimes see incidental learning in classrooms as well, and often welcome it, but their responsibility for curriculum goals more often focuses on what students can learn through conscious, deliberate effort. In a classroom, unlike in many other human settings, it is necessary to ask whether classmates are helping or hindering individual students' learning.

Focusing learning on changes in classrooms has several other effects. One, for example, is that it can tempt teachers to think that what is taught is equivalent to what is learned even though most teachers know that doing so is a mistake, and that teaching and learning are quite different.

2.4. Teaching process

The learning experience must be relevant to the student, this means that everything instructed should relate directly to the student's life in some capacity. This can be different depending on the audience. For example, in a professional capacity the expectation is to learn a topic that is relevant to the work an individual is carrying out, otherwise it's irrelevant and this creates a bad experience.

If the student is in school while it may not seem that algebra is relevant to the individual's life it may be in the future and this is the difference between professional learning and mandatory or mainstream education which is preparing a child for the future.

Where possible it is good to keep the students' prior knowledge, then the teacher will understand their experiences and learning patterns. This can be challenging when teaching a large class but in order to give any individual an appropriate learning experience, reasonable care and caution is often required.

2.4.1. Readiness

The distinction between teaching and learning creates a secondary issue for teachers which is 'educational readiness'.

For example, if a child is 'ready' to start school, if they are in good health, show moderately good social skills, could take care of personal physical needs (like eating lunch or going to the toilet unsupervised), a pencil can be used to make simple drawings, and so on ([Copple & Bredekamp, 2006](#)).

This traditional meaning of readiness as preparedness focuses attention on students' adjustment to school, and away from the reverse; which is the possibility that schools and teachers also have a responsibility for adjusting to students. The latter is a legitimate, second meaning for readiness.

For example, if a 5-year-old child normally needs to play a lot and keep active, then it is fair to say that their teacher needs to be 'ready' for this behaviour by planning for a programme that allows a lot of play and physical activity. If the teacher cannot or will not (whatever the reason may be), then in the literal sense this failure is not the child's responsibility.

Although the term direct instruction is sometimes a synonym for 'teacher-directed instruction', more often it refers to a version of mastery learning that is highly scripted. This means that it not only organises the curriculum into small

modules or units, but also dictates how teachers should teach and sometimes even the terms they need to use ([Adams & Engelmann, 1996](#); [Magliaro, Lockee, & Burton, 2005](#)).

'Direct instruction' programmes are usually based on a mix of ideas from behaviourism and cognitive theories of learning. In keeping with behaviourism, the teacher is supposed to praise students immediately and explicitly when they give a correct answer.

Curriculums can be left to interpretation in some instances, which is not welcoming to a child with special needs. They can find themselves being compared to non-special needs students which can exacerbate anxiety and/or depression.

2.4.2. Models of teaching

Parents/caregivers are experts about their own children, and without them, teachers would not have any students to teach.

Schools and teachers are encouraged to provide a wide variety of teaching methods and without this variety, then there is likely a selection of students who miss out. The most prominent example is not catering to students with special needs as they sometimes require a different method of learning.

If a student is placed in a position where they are only expected to learn in one or two ways then this could affect their wellbeing, confidence, motivation and their academic results. However, the same could be said for all students, not just the ones with special needs.

2.4.3. Centred Models of Learning

Student-centred models of learning shift some of the responsibility for directing and organising learning from the teacher to the student. However, being student-centred does not mean a teacher gives up organisational and leadership responsibilities completely. It only means a relative shift in the teacher's role, toward one with more emphasis on guiding students' self-chosen directions. This is particularly good for those students who thrive on independent study.

Teacher-directed strategies do not take over responsibility for students' learning completely; no matter how much a teacher structures or directs learning, the students still have responsibility for working and expending effort to comprehend new material.

As one might suspect, there is overlap in practice between teacher-directed and student-centred models of learning.

Independent study is where a student works alone for a large portion of time, consulting with a teacher only occasionally. Independent study may be student-centred in the sense that the student may be learning a topic or skill, such as a foreign language, that is interesting to them.

But the student could also be learning a topic or skill that a teacher or an official school curriculum has directed the student to learn. A basic subject for which the student is missing a credit, for example.

Either way, the student will probably need guidance, support, and help from a teacher. In this sense, even independent study always contains elements of teacher-direction.

Self-reflection refers to thinking about beliefs and experiences in order to clarify personal meaning and importance. In school it can be practised in a number of ways, for example by keeping diaries or logs of learning or reading, retelling stories of important experiences or incidents in a student's life, or by creating concept maps.

Whatever form it takes, self-reflection by definition happens inside a single student's mind and in this sense is always directed by the student. Most research on self-reflection finds that it only works well when it involves and generates responses and interaction with other students or with a teacher ([Seifert, 1999; Kuit, Reay, & Freeman, 2001](#)).

To be fully self-reflective, students need to have access to more than their existing base of knowledge and ideas ([Gay & Kirkland, 2003](#)).

A teacher may emphasise students' responsibility for directing and organising their own learning in numerous ways. Two examples are; **enquiry learning** and **cooperative learning**.

Even though inquiry-oriented discussion and investigation benefits when it involves the teacher, it can also be useful for students to work together independently, relying on a teacher's guidance only indirectly. Working with peers is a major feature of cooperative learning (sometimes also called collaborative learning).

In this approach, students work on a task in groups and often are rewarded either partially or completely for the success of the group as a whole. Aspects of cooperative learning have been part of education for a long time; some form of cooperation has always been necessary to participate on school sports teams. Cooperative (or collaborative) activities are newer to facilitate the learning of a range of educational goals central to the academic curriculum ([Prince, 2004](#)).

Constructivism theories in learning mentions that everyone creates their own knowledge forum, like building blocks. Each new piece of information or personal experience is built on to the last and reflected upon, where a person can also build their own representations and encompasses this into their learning strategy.

2.4.4. The holistic approach

A [Steiner Waldorf education](#) draws on the ideas of the early 20th Century philosopher, Rudolf Steiner on how to educate children in a way that enables

them to become their true selves, to be good citizens and to contribute to society and be a strong force for good in the world.

The priority of the Steiner ethos is to provide an unhurried and creative learning environment where children can find the joy in learning and experience the richness of childhood, rather than early specialisation or academic hot-housing (which is involving intense study of a topic in order to stimulate the child's mind).

Many schools promote kindness and love of learning as key values, however a trend which is taking place in the UK is for schools to provide a heavy education to children, and the premise of this will be covered later. The question remains, how much is too much?

2.4.5. Mastery

Mastery was first formally proposed by educational psychologist Benjamin Bloom in 1968. Mastery learning maintains that students must achieve a level of proficiency in prerequisite knowledge, before moving forward to learn subsequent information.

In mastery learning, the teacher directs learning, though sometimes only in the sense of finding, writing, and orchestrating specific modules or units for students to learn. In one typical mastery learning programme, the teacher introduces a few new concepts or topics through a brief lecture or teacher-led demonstration. Then they give an ungraded assignment or test immediately after in order to assess how well students have learned the material, and which ones still need help.

The students who have already learned the module are given enrichment activities. Those needing more help are provided individual tutoring or additional self-guiding materials that clarify the initial content. They work until they have quite literally mastered the content.

Some repetition may be required but when the system is working well, all students obtain high scores or grades, although some can take longer to do so than others.

Mastery is very similar to retention methods used in modern day learning technologies, but the principle of mastery is that no student is left behind. However, mastery learning poses two challenges. The first is ethical: is it really fair to give enrichment only to faster students and remediation only to slower students?

The other challenge of mastery learning is more practical: the approach makes strong demands for detailed, highly organised curriculum. If the approach is to work, the teacher must either locate such a curriculum, write one, or assemble a suitable mixture of published and self-authored materials. However, when the curriculum is created, the end result should ideally be a programme filled with small units of study as well as ample enrichment and remedial materials.

Whatever the year group, most subjects taught in schools have at least some features, skills, or topics that benefit from direct instruction. Even subjects

usually considered 'creative' can benefit from a direct approach at times: to draw, sing, or write a poem, for example, requires skills that may be easier to learn if presented sequentially in small units with frequent feedback from a teacher. Research supports the usefulness of teacher directed instruction for a variety of educational contexts when it is designed well and implemented as intended ([Rosenshine & Meister, 1995](#); Good & Brophy, 2004).

Whatever the form, teaching requires well-organised units of instruction in advance of when students are to learn, it is setting the expectation with a reasonable completion timeframe. This may not always be available, and it may not be realistic to expect busy teachers to devise their own. Other limits of direct instruction have more to do with the nature of learning. Some critics argue that organising material on behalf of the students encourages students to be passive to the tasks they are set. ([Kohn, 2000, 2006](#)).

2.4.6. The assistance of technology in teaching

When used appropriately, technology can assist and enhance the learning experience. In recent years we have seen the inclusion of smart boards, tablets and of course remote working in schools.

When radio and motion pictures became available in schools, studies in educational psychology demonstrated the effectiveness of these media in attitude, change and information learning.

However, the foregoing media largely provided stimulus situations only; there was no incorporation of the student's responses. This limitation, which was noted in 1957, had apparently been overcome by later technological development in instruction-programmed instruction, including the use of 'teaching machines.' The development of programmed instruction, stemming from earlier work by the American psychologists S. L. Pressey and B. F. Skinner occupied a large portion of research activity among educational psychologists in the 1960s.

Where new devices are introduced to a learning environment there needs to be adaptability and sometimes flexibility in order to integrate something new into the current routine. Sometimes this may not always work, which is where the teacher may find themselves needing to provide more motivation to some students.

Recently learning technology providers have been focusing on a trend and that is 'retention'. In London there was a learning technology event at ExCel where many of the providers boasted that they could help schools and organisations gain 100% retention from their students. One could think this is virtually impossible given the human brain cannot retain 100% of what it encounters.

After obtaining further details from one of the educational providers, they said that the technology presents the student with a series of questions. Any incorrect questions would be shown to the student after a period of time (such as the following day), where they could answer it again. This process would repeat until the student received 100%. This method is not new by any means

as it is based on repetition, but with technology, it makes the process seem different as the question can be presented in various ways to satisfy the different learning needs.

The most representative example in recent years of working in an uncommon environment would have to be COVID-19. This tested many individuals' adaptability, as well as reliance on technology. This not only tested children but also teachers, as they had to keep order of a virtual classroom that some had not even attempted before.

Children of all ages had to very quickly adapt, work from home, learn to apply their skills and etiquette in school to a computer screen. For some this was fun, for others this was a strange new and daunting experience as, not limited to, because of the lack of in-person social interactions which play a crucial part in schools, even though most individuals will have a mobile device which by its very nature takes us away from social interactions.

On a more negative scale, some families experienced more stress working from home, which was then not a good educational environment for any children of the household.

The likes of Zoom and Microsoft Teams were heavily utilised, which unfortunately meant, and still continues to mean, more safeguarding and security measures being adopted by companies, organisations and institutions. For those offering online courses, there was also a reliance on the parents/carers being involved to safeguard the technology.

However, alongside this there were already educational institutions providing online courses, particularly for adults, but more adapted and expanded their offerings to children, in particular, online coding classes.

Work productivity for both adults and children were challenged in different ways, and the long-term effects on this will be measured properly in the future, but there is already suggestion in the UK that those taking exams during the COVID-19 lockdown period had to miss out. GCSEs are the qualifying exams at the ages of 15-16 years to then move on to further education, such as sixth form and A-levels, this is after 2 years of coursework and then the final exam.

For students who were about to take their exams during COVID, where they could not take a physical exam their score and final qualification was based on coursework. If the student was strong in the coursework, then this was not a problem, but if they were due to be stronger in their exam then they have likely lost out.

Following the home isolation period, many institutions (outside of schools providing mandatory education), continued to provide online learning. For example, now you can even learn the drums online, so the adoption of technology has grown significantly providing another option for people to learn which also brings advantages and disadvantages.

Prior to this, technology in schools was used, but limited to the likes of homework, computer lessons and reasonable adjustments for those with special educational needs (such as dyslexia) to take tests electronically instead of using hardcopy paper.

An [article](#) was published by the Center for Global Development theorising several ways in which COVID will shape the future of education. Naturally money was the first on the list as economic importance is always a crucial point, stating that there would be less money for schools. This was then followed by children not returning to school, which then results in learning loss, questioning the reliance on technology as the new normal, high stakes exams and the (stating the obvious) education markets being disrupted.

Maintaining balance is important, as it is very easy to hide behind a keyboard, but that does not mean it makes us any less productive.

The right working environment is crucial to productivity and discipline for many whether they are children or adults, but has the introduction of too much technology hindered our concentration and productivity? There are studies that suggest we may have reduced our IQ points due to the now socially acceptable use of mobile devices and continuous multi-tasking, but this is for another study.

2.5. Classroom environment

When children reach the ages of between 4 to 11 years, they are transitioning from a caregiving environment to an educational environment and as already stated, this can be challenging from a child development standpoint and with the changes involved this also may affect their general performance. Therefore, an ideal classroom environment is to make the learning interesting and entertaining so children can fluently learn academic skills, socialisation and structure and boundaries and sometimes this can be for the first time depending on whether the child has been in a preschool environment beforehand.

A child's self-esteem develops based on academic and social excessive successes or failures. Adult Expectations for responsible behaviours increase as children are expected to need less adult interaction to maintain established routines at home and school and this can be very challenging because it is a large change. This also creates an environment where experiences are developed both positive and negative that can be remembered into adulthood.

The advantages of learning in school are that children get to compete with each other in a healthy manner. It also provides great opportunities to be social and to promote their communication skills studying with classmates in an educational environment.

At school, young people learn to express themselves, connect and question ideas and to explain why things happen. It also provides students with practice and getting along with people they wouldn't necessarily meet or spend time with, and this is an important part of interaction with other people.

Although instructional strategies differ in their details, they each encourage particular forms of learning and thinking. The forms have distinctive educational purposes, even

though they sometimes overlap, in the sense that one form may contribute to success with another form. The complex forms of thinking that are commonly pursued in classroom learning are critical, creative and problem-solving.

Critical thinking requires skill at analysing the reliability and validity of information. The skill and attitude may be displayed with regard to a particular subject matter or topic, but in principle, it can also occur in any realm of knowledge ([Halpern, 2003](#); [Williams, Oliver, & Stockade, 2004](#)).

Creativity is the ability to make or do something new that is also useful or valued by others. The task can be an object (like an essay or painting), a skill (like playing an instrument), or an action (like using a familiar tool in a new way).

Divergent thinking is stimulated by open-ended questions. This is also a motivator for teachers as they can encourage students' divergent thinking ideas that are open-ended and that lead in many directions ([Torrance, 1992](#); [Kim, 2006](#)).

Best practice is based on knowledge not on assumptions of how children learn and develop. The research base yields major principles in human development and learning included below. Those principles, along with evidence about curriculum and teaching effectiveness, form a solid basis for decision-making in early care and education.

2.5.1. Gender differences in learning

Gender roles are the patterns of behaviours, attitudes, and expectations associated with a particular sex - with being either male or female. Although there are many exceptions, boys and girls do differ on average in ways that parallel conventional gender stereotypes and that affect how the sexes behave at school and in class.

The differences have to do with physical behaviours, styles of social interaction, academic motivations, behaviours, and choices. They have a variety of sources - primarily parents, peers, and the media.

Teachers are not the primary cause of gender role differences, but sometimes teachers influence them by their responses to the children, and choices made on behalf of students.

Physically, boys tend to be more active than girls, and by the same token more restless if they have to sit for long periods. They are also more prone than girls to rely on physical aggression if they are frustrated ([Espelage & Swearer, 2004](#)). Both tendencies are inconsistent with the usual demands of classroom life, and make it a little more likely that school will be a difficult experience for boys, even for boys who never actually get in trouble for being restless or aggressive.

During the first two-three years of primary school, gross motor skills develop at almost the same average rate for boys and girls.

Toward the end of primary school, however, boys pull ahead of girls at these skills even though neither sex has begun yet to experience puberty. The most likely reason is that boys participate more actively in formal and informal sports because of expectations and support from parents, peers, and society

[\(Braddock, Sokol Katz, Greene, & Basinger- Fleischman, 2005; Messner, Duncan, & Cooky, 2003\)](#).

2.5.2. Social differences in gender roles

Whether on the playground, in a school hallway, or on the street, boys' social groups tend literally to fill up a lot of space, and often include significant amounts of roughhousing as well as organised and 'semi-organised' competitive games or sports ([Maccoby, 2002](#)).

Girls are more likely to seek and maintain one or two close friends and to share more intimate information and feelings with these individuals.

To the extent that these gender differences occur, they can make girls less visible or noticeable than boys, at least in leisure play situations where children or youth choose their companions freely.

Studies have shown that teachers can talk to boys from a greater physical distance than when they talk to girls. The difference may be both a cause and an effect of general gender expectations, expressive nurturing is expected more often of girls and women, and a business-like task orientation is expected more often of boys and men, particularly in mixed-sex groups ([Basow & Rubenfeld, 2003; Myaskovsky, Unikel, & Dew, 2005](#)).

In spite of most teachers' desire to be fair to all students, it turns out that they sometimes distribute praise and criticism differently to boys and girls.

The tendency is to praise boys more than girls for displaying knowledge correctly, but to criticise girls more than boys for displaying knowledge incorrectly.

Another way of stating this difference is by what teachers can typically overlook; with boys, they tend to overlook wrong answers, but with girls, they tend to overlook right answers. The result (which is probably unintended) can make boys' knowledge seem more important and boys themselves more competent. A second result can make girls' knowledge less visible and girls themselves less competent.

This difference can also be stated in terms of what teachers overlook; with girls, they tend to overlook behaviour that is not appropriate, but with boys they tend to overlook behaviour that is appropriate. The net result in this case is to make girls seem better than they may really be, and also to make their 'goodness' seem more important than their academic competence. By the same token, the teacher's patterns of response imply that boys are worse than they may really be.

At first glance, the gender differences in interaction can seem discouraging and critical of teachers because they imply that teachers as a group are biased (whether deliberately or not) about gender. However, this conclusion is too simplistic for a couple of reasons. One is that like all differences between groups, interaction patterns are trends, and as such, they hide a lot of variation within them. The other is that the trends suggest what often tends in fact to

happen, not what can in fact happen if a teacher consciously sets about avoiding interaction patterns like the ones I have described.

Fortunately, teachers are not normally penalised for making choices and as social skills are developed and society evolves, the older ways of teaching will naturally dissolve in time. Not all evolution is beneficial, but some of the ways described above will create an unnecessarily negative atmosphere for children which can have lasting effects on their education into the future.

2.5.3. Culture in the classroom

Included in the abundance of information, behaviour and etiquette and so on for children, understanding culture is also among the items to learn.

A culture is the system of attitudes, beliefs, and behaviours that constitute the distinctive way of life of a people.

Culture has elements that are obvious, but also features that are subtle or easy for outsiders to overlook, like beliefs about the nature of intelligence or about the proper way to tell a story. When a classroom draws students from many cultures or ethnic groups, therefore, the students bring to it considerable diversity.

Teachers need to understand that diversity, understand how students' habitual attitudes, beliefs, and behaviours differ from each other, and especially how they differ from that of the teacher. However, this kind of understanding can get complicated as diversity not only includes [culture](#) but also the neurological differences in students (this will also be described later).

2.5.4. Bilingualism: language differences in the classroom

Although monolingual speakers often do not realise it, the majority of children around the world are bilingual, meaning that they understand and use two languages ([Myers-Scotton, 2005](#)).

In classrooms as in other social settings, bilingualism exists in different forms and degrees. At one extreme are students who speak both English and another language fluently; at the other extreme are those who speak only limited versions of both languages.

In between are students who speak their home (or heritage) language much better than English, as well as others who have partially lost their heritage language in the process of learning English. Commonly, a student may speak a language satisfactorily, but be challenged by reading or writing it, though even this pattern has individual exceptions. Whatever the case, each bilingual student poses unique challenges to teachers, not to mention the issues it can cause if the child over time loses their own or heritage language because they are adapting to their surroundings.

Teachers are required to take responsibility for this and be mindful. Research finds that language loss limits students' ability to learn English as well or as quickly as they otherwise can do. Having a large vocabulary in a first language,

for example, has been shown to save time in learning vocabulary in a second language ([Hansen, Umeda & McKinney, 2002](#)).

Additional or different language and gestures can mean different things. For example, in some cultures, it is considered polite or even intelligent not to speak unless you have something truly important to say. 'Chitchat', or talk that simply affirms a personal tie between people, is considered immature or intrusive.

In a classroom, this habit can make it easier for a child to learn not to interrupt others, but it can also make the child seem unfriendly.

Eye contact varies by culture. In many African American and Latin American communities, it is considered appropriate and respectful for a child not to look directly at an adult who is speaking to them ([Torres-Guzman, 1998](#)).

In classrooms, however, teachers often expect a lot of eye contact (as in 'I want all eyes on me'), and may be tempted to construe lack of eye contact as a sign of indifference or disrespect when there could be a number of reasons for this, and unintentionally this could cause a negative impact on the child.

Social distance varies by culture. In some cultures, it is common to stand relatively close when having a conversation; in others, it is more customary to stand relatively far apart.

2.5.5. Too much work / homework

'You ever stop trying to shove knowledge down their throats and just talk to them?'

'They're children, they don't know what they want.'

'Yes, they do know what they want. All of them. And they're all different.'

From the film Daddy Day Care (2003)

Reception is the first stage of primary school in the UK and manages the gap between pre-school and primary education.

From September 2021, the reception baseline assessment programmes were administered to 4-year-olds in the UK, and in the first few weeks of starting Reception. It involves children who are not yet of statutory school age to take assessments and the focus of this is to measure accountability on how the school (and by extension the teachers) are performing.

The assessments did not receive any admiration, mainly because they were found to be unreliable and were unlikely to improve the quality of schools, and would certainly not benefit the children. A likely outcome would be harm inflicted on the children's wellbeing and development, as this is the first impression, they receive from a school environment.

[Early years experts](#) said that the tests were 'pointless. The concept of basing the assessment of such young children on a test was flawed and would not produce valid or reliable data, so therefore could not provide the intended

measure of school effectiveness. The tests would take up staff time at a crucial moment when children should be settling into a school environment and the results were not destined for any kind of aid to teaching, so they had little benefit to children, teachers or parents/carers.

A learning culture is an environment in which continuous learning and improvement is provided, welcomed and eagerly participated in which aids in motivation.

In October 2018, the [Education secretary](#) allowed schools to have control of how much homework a child is set. He said:

‘Just to be clear: schools are not obliged to set homework, and some don’t. But when schools do set homework, children do need to do it. We trust individual school head teachers to decide what their policy on homework will be, and what happens if pupils don’t do what’s set. Policy and approach won’t be the same in all cases. Autonomy for schools, and the diversity that comes with it, is at the heart of this government’s approach to education.

Of course, schools should, and do, communicate with parents. Parents need to know where they stand. Teachers obviously need to be realistic about expectations, and they know this.

Obviously, no one wants children spending an inordinate amount of time every night doing homework. Clearly, there are other important things to do, too – like playing outside, family time, eating together.’

Assigning homework has never been a popular task, but it has been proven to implement the transfer of knowledge, because it is making the student think again, and outside of their educational setting which implants the knowledge more. While homework is not a legal requirement in the UK, it would be interesting to know exactly how many parents support the amount of homework some schools are giving children as young as 4 years old.

The wording in homework policies do not differ greatly between schools in the UK. It is intended to be done outside of the timetabled curriculum and in some cases represents an extension of the learning activities provided and organised, in accordance with the objectives of the school curriculum.

Homework can be seen as a school’s way to gain partnership with parents and the pupils and the skills of the children can be consolidated and standards can be raised. However, do the schools find out the affects all of this work can have on their students?

Young children will be dependent on their parents/caregivers to help with the homework until they can gain the independence, self-discipline and time management to do it by themselves. This means that parents/caregivers typically need to take a substantial time out of their day to print off the materials (unless the school is using a more automated approach or educational application). Then, when the work is complete, they may need to scan the documents and upload them back to the homework platform. This is alongside

providing the motivation needed to encourage the children to do the homework in the first place.

While many parents/caregivers would like to assist their children, some cannot due to work commitments, or needing to attend to other children in the household, which then can place the whole household in unfair situations. Those caregivers with special needs children often discontinue homework due to the pressures highlighted above.

If a reward system is in place, and the child cannot complete their homework then this is likely to set a bad impression. It is likely the child will not get the award, and they may even resent the parents/caregivers for not being able to help them with the work. This is a hard, unnecessary lesson.

Once a pupil reaches the age where they can exercise autonomy, then the pressure at home is less, but this does act as a double edge sword as without the guidance from home to be an independent worker, how can students do their homework independently? Additionally, it does not matter how old the child is, they may still want to go to the parents/caregivers to ask for guidance and to check their work.

Some schools in London are demanding that children carry out homework 45 minutes per day. By the time they get home, do their homework, how much time is left for them to play and actually be children?

Primary school years for me were between the years of 1986-1992. I received my first homework at the end of my final year in primary school when I was 11 years old. It certainly did not do my year group any harm as I know many successful individuals.

2.5.6. Home schooling

In the UK mandatory learning in traditional school settings are government led curriculum-based which are the basis of teaching in a traditional school setting. However, a child does not have to attend a traditional school setting in order to fulfil their obligation of obtaining an education.

In the UK under the 1996 Education Act, parents have a legal duty to ensure children of compulsory school age receive a suitable full-time education. It means the parents bear the financial and educational burden of educating their children.

If a child is to be homeschooled then they need to be deregistered with the council (if they ever were registered), in order to not be considered a truant.

For homeschooled children, the same curriculum for schools does not need to be followed however a basic education is required.

In certain countries such as Sweden, Germany and Cyprus, home education is illegal, but in other countries such as Australia and the USA, the home education movement is far bigger than in the UK.

As with a traditional school setting, a broad range of experiences can be had in homeschool practice as well. The main concern is the lack of social interaction with other children.

According to the [American Psychological Association](#), there are four key points to consider when homeschooling:

1. the general academic needs and well-being of the child;
2. family relationships and community resources;
3. educational resources; and
4. compliance with state regulations.

This is very similar to the guidance given in the UK.

[Wolsey Home Oxford](#) lists the benefits of homeschooling:

- The home is less noisy and pressured than a traditional school.
- Flexibility. A child can go at their own pace, and not have to study at the same pace as the rest of the class.
- Children can work at times when they are most productive and get more sleep.
- If a child has unique talents, but struggles with other subjects, the educator can restore the balance by choosing subjects which suit them.
- No school run is necessary. The extra time will allow the child to pursue outside hobbies and interests while saving the caregiver/educator's time.

There can be issues with this method particularly if one parent does not agree with homeschooling. Legally, if a parent does not agree to home education, and the parents are separated, the parent with whom the child lives can make an application to the court for permission to home educate the child, if they still wish to do so.

There can be several reasons for homeschooling such as the parents not agreeing with the curriculum, or the child cannot or is no longer allowed to attend mainstream school.

In 2020 in the UK, [the government announced](#) a new legal obligation on schools to provide remote education to all children off school because of COVID-19. This has since been withdrawn, but the legislation did not apply to those already deregistered.

This affected children in many ways but as mentioned before, the main issue was the lack of social interactions and the unprecedented test of adaptability.

Following COVID-19, many families were concerned when returning their children to school so they decided to homeschool for as long as they could. By

this point one could argue that parents/carers would have experience to educate their children as they had been doing it for over a year, however, there was also the concern by governing authorities that children who were homeschooled during the pandemic, would have an ongoing diluted education that was intended to be temporary.

2.6. Pedagogy

'I mean, this isn't one of those progressive schools where teachers are called by their first names and students are partners in learning, and there's a fundraising auction at the end of the year where the more creative parents put on musical skits about the community garden.

This is a public school. If I can keep the girls off the pole and the boys off the pipe, I get a bonus.' **Source film, Easy A (2010)**

Pedagogy is the method and practice of teaching, especially as an academic subject or theoretical concept. According to [Britannica](#), it is:

'The study of teaching methods, including the aims of education and the ways in which such goals may be achieved. The field relies heavily on educational psychology, which encompasses scientific theories of learning, and to some extent on the philosophy of education, which considers the aims and value of education from a philosophical perspective.'

Pedagogy refers to the method and practices of a teacher and how they approach their teaching style, as well as the different theories they use, how they give feedback, the assessments they set and how the teacher delivers the curriculum to the class.

According to [Learning Journals](#) in an article called 'What Are the Different Pedagogical Approaches to Learning?'. It states the different approaches to pedagogy are constructivism, social constructivism, behaviourism and liberationism. This article is locality specific in places, but under the behaviour section, it mentions the theory of behaviourism in a classroom derived from pedagogical research by Thorndike (1911), Pavlov (1927) and Skinner (1957), who have been referenced previously in this thesis.

Additionally, the article also states that behaviourist pedagogy believes the teacher should be the sole authority figure, and leads the lesson. This can be argued that this contradicts the ideas of Piaget, and in some senses Lev Vygotsky, who believed children should direct some or all of their own learning.

Teaching does not guarantee learning otherwise schools in general would be far more successful, that is not to say that they lack success now, but at the moment there are more overheads driving the school system than what is governed by the teachers.

2.7. Teachers' responsibility to teach, students' responsibility to learn

I am unsure whether I would find a teacher to openly admit in an official capacity the above, but there have been a lot of teacher strikes in the UK recently. Teachers having an incentive to do their job of course does help, as it is not an easy role by any means.

Schools are very much statistics driven and this may have always been the case as you need to provide measurable results, however has this perhaps gone to the other extreme?

For teachers, learning usually refers to things that happen in schools or classrooms, even though every type of teacher or trainer can describe examples of learning that happen outside of these places.

Within the classroom, there are typically three key areas to learning:

1. Curriculum content and academic achievement;
2. Sequencing and readiness; and
3. The importance of transferring learning to new or future situations.

2.7.1. No child left behind / Every child matters

Every student is unique, and they have their own unique pattern in how they learn about the world around them. Good classroom teaching ideally uses a variety of teaching methods to reflect the different learning styles of the children in the class, and to give every child in the class the opportunity to be successful so no child is left behind.

In recent years, there have also been several government initiatives around the world paraphrasing 'no child being left behind'.

In the UK Government Initiative '[Every Child Matters](#)' refers to the understanding and quantifying vulnerability by exploring complexities and evidence of increased risk, impact and protective factors of children. It details five key outcomes that are important for children and young people which are being healthy, staying safe, enjoying and achieving, making a positive contribution and economic well-being.

In the US the [No Child Left Behind Act](#) of 2001 federal law aimed at improving public primary and secondary schools, and thus student performance, via increased accountability for schools, school districts, and states. In addition, actor Tom Cruise met the US Secretary of Education, Rod Paige in 2004 about endorsing scientologist education methods as part of the 'No Child Left Behind' legislation.

There are several initiatives around the world that concentrate on the inclusion of every child when it comes to education. For example, [UNICEF](#) (United Nations Children's Fund), states that every child has the right to an education and campaigns for this as part of humanitarian and developmental aid. It is interesting to see how far each country has come with regards to delivering an appropriate education for all children, whereas once upon a time some children were excluded because of physical and/or mental differences.

Since the second half of the 20th century, several attempts have been made to elaborate models and paradigms for teaching that would place the utilisation of psychology in a more reasonable perspective.

One implication of these perceptions is that the act of teaching is inherently a hypothesising act (Coladarci 1963). The educator focuses on desired changes in the student, views the operations and arrangements as 'hypotheses' about the conditions producing a change in the student; the educator explicitly generates these hypotheses from the best available human knowledge, which is itself hypothetical in character.

If this is the case then it has to be questioned why rely on hypothesis and not investigation and fact, or would this take too much time?

In 2012 a paper published called '[What makes great pedagogy? Nine claims from research](#)' which claims in research whether high performance in education systems was dependent on the quality of the teaching. This also extends to school attainment which links to the UK's international ranking.

There are several references to individuals in this publication (such as Barber and Mourshed and Whelan), who have summarised that student learning is down to the teaching, or the quality of the teaching, but is this absolute?

In the publication, Whelan provides the following summary:

'School systems need to ensure that their curricula are relevant and contain enough flexibility to accommodate different students and different social and economic needs.'

The excerpt from the publication also mentions the importance of the environment in addition to the quality of the teaching. There are many other nuances to the publication, but the nine 'great pedagogy' claims from research are set out below:

1. Effective pedagogies give serious consideration to pupil voice.
2. Effective pedagogies depend on behaviour (what teachers do), knowledge and understanding (what teachers know) and beliefs (why teachers act as they do).
3. Effective pedagogies involve clear thinking about longer term learning outcomes as well as short-term goals.
4. Effective pedagogies build on pupils' prior learning and experience.
5. Effective pedagogies involve [scaffolding](#) pupil learning.
6. Effective pedagogies involve a range of techniques, including whole-class and structured group work, guided learning and individual activity.
7. Effective pedagogies focus on developing higher order thinking and metacognition, and make good use of dialogue and questioning in order to do so.
8. Effective pedagogies embed assessment for learning.

9. Effective pedagogies are inclusive and take the diverse needs of a range of students, as well as matters of student equity, into account.

While these claims can be debated for hours (if not days), there is a clear pattern contrasting these claims and/or arguments and that is to be successful; the teacher and student need to work together. In places there needs to be extra guidance from the teacher especially in the primary school age range.

As is the case with employees, children need to be told what is expected of them. They need to be able to communicate if they have any issues or problems, and this again places an onus on the teacher to provide a welcoming atmosphere so students can come to them.

2.7.2. Obligations and responsibilities

In the UK, education law is administered to each of the four countries within the union (England, Wales, Scotland and Northern Ireland). There is also a separate legislation which covers Special Educational Needs and Disability (SEND) or special needs education.

All parents have a legal duty to ensure that their child receives an education suitable to his/her age, ability and aptitude as well as any special needs, and as we saw in the previous section, most parents fulfil their legal obligation by registering their child in a school however there is the opportunity to home school.

If parents choose to homeschool their child/children and they have not deregistered them from school, the child/children would be recorded as truant.

If a child is considered to be truant there are several court orders that can be administered to ensure the child attends education.

The [Children and Families Act 2014](#) in the UK became law in September 2014. Part Three of this Act is entirely about SEND or special needs children. It is a completely fresh approach with an emphasis on person-centred learning, raising expectations, and giving parents and children a much greater level of control in the decision-making process.

These reforms are the result of changes in perception, thinking and attitudes towards disability, legislation which promotes principles of equality, inclusion and prevention of disability discrimination, and founded on evidence-based research regarding achieving the best outcomes for children with special needs. Many children with special needs grow up loathing school because of previous approaches and the behaviour towards children with special needs. In some cases, these experiences have stayed with the children into adulthood, and this was typically due to teachers not knowing how to educate these children, and how to treat them.

The term 'Special Educational Needs' also has a legal definition that is covered by both [The Education Act of 1996](#). To have a special educational need and/or disability, a child must have a learning difficulty or learning disability that makes

it significantly harder for them to learn or to access education compared to most children of the same age.

The term disability also has a legal definition under the [Equality Act 2010](#). A person has a disability if they have a physical or a mental impairment that has a 'substantial' and 'long-term' negative effect on their ability to do normal daily activities.

The terms 'Substantial' and 'Long-Term' are also defined within the same Act as being:

'Substantial' is more than minor or trivial. For instance, it would take significantly to complete a normal daily task such as taking longer getting dressed.

'Long-term' is defined as lasting for more than 12 months.

It is estimated that 16% of children and young people are identified as having some form of special need and/or disability at some stage during their education. Although now they will have most of their educational needs successfully met within the mainstream classroom.

Just over 1% of children will have a level of special needs that is significant and they may need a specialist educational provision, such as attending a special school.

There is a lot of cross-over between special educational needs and disability, and many children who have a disability will also have an additional special educational need. However, this isn't always the case, and every child's need should be addressed individually.

There are many different types of educational needs, and even with children who have broadly similar needs, the approaches each child will benefit from may vary widely.

There is sometimes confusion over the terms 'learning difficulty' and 'learning disability'.

A Special Education Need is a specific learning difficulty, such as dyslexia, dysgraphia, dyspraxia or attention deficit hyperactivity disorder (ADHD or ADD).

A learning disability can be mild, moderate, severe or profound and multiple issues such as a speech and language disorder, a sensory processing disorder, an autistic spectrum disorder, a behavioural, emotional or social difficulty.

2.7.3. When and where is the liability in education?

The importance of teachers as influential figures cannot be underestimated.

When I was in my final two years of mandatory education, I decided to study GCSE Art. I found out that I and my fellow classmates were studying the wrong curriculum. Our art teacher had discovered the most up to date curriculum was on the desk of the head of department.

The head of department had failed to inform the teachers of the changes, which were significant. This meant that if we wanted to obtain our 'rightful' grades, we needed to do much more work in a short space of time. Many parents complained and I and my fellow students succeeded but it involved a lot of stress and at least four hours of personal time per night to catch up. This was alongside other homework and studies.

Unfortunately, the process repeated itself in the following two years when I also took A-Level Art. This time round, I and my fellow classmates did not obtain our 'rightful' grades due to not being told about the curriculum change. Following this I and several of my fellow art students decided not to pursue a career in art, and we chose other vocations to study at university.

The above were two examples of significant impacts on our educational paths that changed our career routes as adults. It wasn't the magnitude work that was the problem, it was the demotivation after completing A levels which resulted in poorer unjustified grades. Additionally, we were never given any proper guidance as to how we could use our art in a career, therefore this was also the reason many of us decided to change vocation. The influence, the lack of guidance and demotivation was disappointing, but this did not supersede that it could have all been avoided had the head of art kept the art teachers informed.

From my understanding, there were no repercussions to the head of art at the school I attended.

2.7.4. A shocking experiment

Stanley Milgram, an American psychologist carried out an [experiment](#) during the 1960s regarding obedience and it was one of the most controversial studies in the area of psychology. Milgram wanted to investigate why ordinary people may do extraordinary, if not terrible, things when under the influence of an authority figure. The tying link here is that a teacher would be an authority figure in a child's life.

Milgram had a particular interest in the confessions made following World War II when some soldiers claimed that they only committed horrendous acts against their captives, because they were following orders from their supervisors.

While this is extreme when compared to teachers in school, the general principles are very similar. Milgram investigated this phenomenon by asking volunteer participants to take part in what they were told was an experiment on learning.

The participants were to act as teachers, and were told to subject learners to increasingly powerful electric shocks every time they answered a question incorrectly. To encourage participants to do this, Milgram simply had to have an authority figure present in the room and this person would be wearing a white lab coat. If a participant teacher showed concern for the learner and asked to stop the experiment, they would simply state set phrases such as 'the experiment requires that you continue', or 'I am responsible for what happens to the learner' (implying that the participant teacher would not be responsible).

The voltage would be increased gradually until it reached a certain point where the learners would protest and ask to leave the experiment, or would stop answering questions and appear unresponsive.

What the participant teachers did not know was that the learners were stooges working for Milgram, and did not come to any harm during the experiment. Milgram and his colleagues did not think that any of the participant teachers would actually reach the point where they would cause harm to the learner, but this was not the case.

It was recorded that 65% of participant teachers followed their instructions to the full lethal voltage, and as far as they were aware, they had potentially killed the learner(s).

It seemed that an authority figure could indeed influence a person to commit horrendous acts simply by stating their authority, and/or suggesting that they would take ultimate responsibility for what took place.

Milgram theorised that the participant teachers had switched from being in an autonomous state when they felt that they were responsible for their own actions, to an agentic state where they were acting as an agent for another person, and therefore did not need to accept responsibility.

Milgram's study shocked the psychological community and his findings have been replicated in a variety of different cultures and conditions since. His research represented a turning point in our understanding of social psychology and as his biographer stated; 'it is not the kind of person we are that determines how we act, but rather the kind of situation we find ourselves in'.

Again, this may seem somewhat extreme to compare this type of experiment with teachers in a school environment, but if teachers are following a set of rules that are not necessarily for the benefit of the child, and they do not have to take responsibility for the consequences, how many would really be enthused to change the system.

2.7.5. Children Act (Section 11)

In the UK, councils have a statutory duty to effectively manage allegations against people who work with children under Section 11 of the Children Act 2004.

[Section 11 of the Children Act 2004](#) places a statutory duty on key persons and bodies to make arrangements to ensure that in discharging its functions, they have regard to the need to safeguard and promote the welfare of children and that the services they contract out to others, are also provided having regard to that need.

There is normally a Local Authority Designated Office ('LADO') who needs to be contacted if it is alleged that a person who works with children has behaved in a way that has harmed, or may have harmed a child; possibly committing a criminal offence against or related to a child; or behaved towards a child or

children in a way that indicates they may pose a risk or harm to a child or children.

Cases in education law in the UK involve a lot of special needs children as the legislation is still relatively new in comparison to The Education Act, but these cases are not limited to just SEND children.

[Negligence issues](#) can range from having pupils left behind in the classroom, failure to provide an adequate standard of education, failing to follow up on non-attendance or truancy to a lack of support for special educational needs.

SEND children also enjoy the rights under additional legislation and this is because there is a risk that these children will lose opportunities in school, which will affect their prospects as adults so there is scope for a teacher and/or school to be sued if they have not met their obligations.

While litigation, if successful, may provide healthy compensation, the remedy for lost educational opportunities may take a lot longer to resolve.

2.7.6. Requirements for SEND

When a child has a special educational need and/or disability, learning can be significantly harder and it doesn't always happen as easily as it does for other children. Different styles of teaching, resources, additional equipment, or adaptations to the classroom may have to be made to enable children with additional needs or the need for reasonable adjustment, to also reach their full potential.

The context of current legislation, and how it is implemented changes from one country to the next, however, many of the principles are similar and there are commonalities in terms of best practice regardless of location.

Not every school is required to have a SEND facility, but if they do they have to adhere to the legislation and policies. Many schools will employ educational psychologists and SEND specialists (also known as SENCO), who will take responsibility for liaising with the parents/caregivers if the teacher identifies a special need.

The identification process can in itself cause anxiety to the child. The child may think there is something wrong with them, so there needs to be an appropriate way of dealing with the situation. Additionally, parents may not be inclined to listen due to society's misconceptions and stereotypes surrounding neurological disorders.

Teachers are placed in awkward and sometimes uncontrollable situations, and many teachers do not have the experience or knowledge when it comes to identifying a special need. For schools in the UK, there are a set of processes to follow in order to involve further assistance.

We know so much more about autism now than we have ever known before and this is just one example which affects the education of children. No matter

how smooth the process is, if a special need is identified, it will still be a long path for the child regarding education.

[Carl Rogers](#) was the founder of the 'person centred' approach which detailed that a uniformed educational strategy would not suit everyone, and that to be truly effective, education had to be tailored to the individual.

He challenged the outdated traditions of uniformed teaching and revolutionised teaching in general with his methods, as well as the teaching of SEND children.

The Education, Health and Care Plan ('EHC') is a document used for children at the higher end of their education needs. It involves the child and their parents/carers, so they can all play an active role in shaping and individualising the plan for the child to be comfortable in their educational environment.

What is a Special Education Need and/or Disability?

A SEND child can have a neurological disorder such as ASD (Autistic Spectrum Disorder), as described in the previous sections, but they can also have a Specific Learning Difficulty ('SpLD'). SpLD covers a broad category of conditions which affect the way the brain processes information. The term can also be extended to include many other conditions not mentioned below.

In reference to the Special Educational Needs Code of Practice, three examples of a SpLD are:

1. Dyslexia is a learning difficulty that can cause problems with reading, writing or spelling.
2. Dyspraxia is a developmental coordination disorder which can affect physical coordination.
3. Dyscalculia is a specific and persistent difficulty in understanding numbers.

With support, research has shown that in time, individuals with dyslexia can utilise different parts of the brain in order to compensate for the issues they will likely experience with reading.

Being able to use different parts of the brain in this way is not only fascinating but an incredible gift.

Curriculums can be either overwhelming or underwhelming to a child with SEND given that many are above average intelligence, and this is the reason why lesson targets ideally need to be specific, measurable, achievable, realistic and in a timely manner ([SMART](#)).

Several learning styles were covered in the previous section, but it is also important for children to know they can work with the teachers if they are providing support. Communication can be catered for in many different ways, and visual cues or perhaps discreet cards which allows the child to communicate with the teacher may also help.

If a child with ASD for example, becomes overwhelmed they are likely to outburst and exit the room which can also disrupt the rest of the class, having a discreet method of communication may assist the child's modesty and trust between them and the teacher.

Confidence building in children with learning difficulties is crucial to their future success, therefore placing them in a position where they can fail (unintentionally or not), is not ideal and demotivating.

2.7.7. Multiple intelligences in the classroom

The idea of multiple intelligences leads to new ways of thinking about students who have special gifts and talents. Traditionally, the term 'gifted' referred only to students with unusually high verbal skills. Their skills were demonstrated especially well, for example, on standardised tests of general ability or of school achievement.

More recently, however, the meaning of 'gifted' has broadened to include unusual talents in a range of activities, such as music, creative writing, or the arts ([G. Davis & Rimm, 2004](#)). To indicate the change, educators often use the dual term 'gifted and talented'.

2.7.8. Difference between talent and intelligence (IQ tests)

There is sometimes a misconception between learning, talent and intelligence. For example, we don't have to be highly intelligent to learn something. We all learn something new every day and there is a different division and benchmark recall regarding whether we are highly intelligent or not.

Sir Francis Galton made the first serious attempt to develop measures that would reflect an individual's intelligence. He believed that intelligence was mainly a matter of having the right genetics. Galton reasoned that superior intelligence would be a reflection of superior physical development of the brain and body. Unfortunately, no such relationship was evident and Galton's investigation was unsuccessful.

Alfred Binet developed the first successful test of intelligence and the Binet-Simon intelligence test. It consisted of a variety of items intended to reflect knowledge and skills, the skills the average school child of a given age would have.

The items were graded in difficulty according to age, and the test was administered individually on a one-on-one basis, carried out over more than two hours by a trained person.

[Mensa](#) describes an IQ test as a type of standard score that indicates how far above, or how far below, his/her peer group an individual stands in mental ability. The peer group score is an IQ of 100; this is obtained by applying the same test to huge numbers of people from all socio-economic strata of society, and taking the average.

The [Binet-Simon test](#) and its successors, measured intelligence by assessing intellectual skills and knowledge, assuming that the individual had been given the opportunity to learn the skills and knowledge prior to the test. At the same time, if the individual being tested was not given the opportunity to learn said skills and knowledge, the failure to demonstrate knowledge does not represent the individual's intelligence.

Emotional intelligence on the other hand is the ability to manage both your own emotions and understand the emotions of people around you. It is measured in psychometric tests using a set of sub-scales which include empathy, emotional perception, relationships skills, adaptability in new situations, emotional expression, low impulsiveness, happiness, optimism, self-esteem, emotional management in complex situations, emotional regulation of one's own emotions, self-motivation, assertiveness, social competence and stress management (which is one's own and other people's stress).

Emotional intelligence is still under debate as to whether it should be regarded as a personality trait or something else such as a learned skill. In 1995 Daniel Goldman argued that being sensitive to other people is a form of intelligence and can be more important than a person's IQ.

2.7.9. Qualities of the gifted and talented

Generally, gifted and talented students show some combination of the following qualities:

- They learn more quickly and independently than most students their own age.
- They often have well-developed vocabulary, as well as advanced reading and writing skills.
- They are very motivated, especially on tasks that are challenging or difficult.
- They hold themselves to higher than usual standards of achievement.

Contrary to a common impression, students who are gifted and talented are not necessarily awkward socially, less healthy, or narrow in their interests ([Steiner & Carr, 2003](#)). They also come from all economic and cultural groups. In spite of their obvious strengths as students, they often languish in school unless teachers can provide them with more than the challenges of the usual curriculum.

Supporting the gifted and talented usually involves a mixture of acceleration and enrichment of the usual curriculum. Without accommodation to their unusual level of skill or knowledge, students who are gifted and talented can become bored by school, and eventually the boredom can turn into behaviour problems. If left unattended, then this could escalate into the students' future endeavours.

Partly for these reasons, students who are gifted and talented have sometimes been regarded as the responsibility of special education, along with students with other sorts of disabilities.

Often their needs are discussed in textbooks about special education, alongside discussions of students with intellectual disabilities, physical impairments, or major behaviour disorders. However, there is some logic to this way of thinking about their needs. These children are exceptional, and they do require modifications of the usual school programmes in order to reach their full potential, so perhaps there are less differences with SEND than one might imagine.

Some educators can think of the gifted and talented not as examples of students with disabilities, but as examples of diversity. As such, they are not so much the responsibility of special education specialists, as the responsibility of all teachers to differentiate their instruction.

2.7.10. Time management and motivation in the classroom

If a student asks a lot of questions during discussions, are they curious about the material itself, or just wanting to look intelligent in front of classmates and the teacher?

In a class with many students and a busy agenda, there may not be a lot of time for a teacher to decide between these possibilities. In other cases, the problem may not be limited to time as much as communication difficulties with a student.

Consider a student who is still learning English, or who belongs to a cultural community that uses patterns of conversation that are unfamiliar to the teacher, or who has a disability that limits the student's general language skill. In these cases, discerning the student's inner motivations may take more time and effort. It is important to invest the extra time and effort for such students, but while a teacher is doing so, it is also important for them to guide and influence the students' behaviour in constructive directions. That is where behaviourist approaches to motivate can help.

Students vary in the amount of time needed to learn almost any material or task. Accommodating the differences can be challenging for teachers, but also important for maximising students' motivation. School days are often filled with interruptions and fixed intervals of time devoted to non-academic activities; this makes it difficult to be flexible about granting individuals different amounts of time to complete academic tasks.

The aim is to sustain focus on learning and this also ties closely with motivation. There will be times when a teacher needs to focus exclusively on students' appropriate behaviour (or lack thereof), which will be both necessary and sufficient evidence of motivation. However, there will be other times when it is important to encourage students' beliefs that they can accomplish specific tasks. There will be other times when a teacher needs to provide for students' underlying needs for competence or social connection is important.

2.7.11. Feedback

The term 'feedback', when used by educators, refers to responses to students about their behaviour, performance and/or work. Feedback is essential if students are to learn and if they are to develop classroom behaviour that is socially skilled and 'mature'. However, feedback can only be fully effective if offered as soon as possible, when it is still relevant to the task or activity at hand ([Reynolds, 1992](#)).

A teacher's comment to a student about an inappropriate, off-task behaviour may not be especially welcome at the moment the behaviour occurs, but it can be more influential and informative later.

The same is true for comments about positive behaviour by a student. Hearing a compliment right away makes it easier to assign the comment with the behaviour, and allows the compliment to influence the student further.

The principle of timely feedback is consistent, with a central principle of operant conditioning. Reinforcement works best when it follows a to be learned operant behaviour closely ([B.F. Skinner, 1957](#)).

In this case a teacher's feedback serves as a form of reinforcement. The analogy is easiest to understand when the feedback takes the form of praise as in operant conditioning terms, the reinforcing praise then functions like a 'reward'.

When feedback is negative, it functions as an 'aversive stimulus' (in operant terms), shutting down the behaviour criticised. At other times, though, criticism can also function as an unintended reinforcement. This happens, for example, if a student experiences criticism as a reduction in isolation and therefore as an increase in his importance in the class, a relatively desirable change. Therefore, the inappropriate behaviour continues, or even increases, contrary to the teacher's intentions.

2.7.12. Maintaining accurate records

Although timeliness in responding to students can sometimes happen naturally during class, there are also situations where promptness depends on having organised key information ahead of time.

The obvious examples are the scores, marks, and grades returned to students for their work. Or, a short quiz (such as a weekly spelling test) may be possible to return quite soon after the quiz. Excessive time to evaluate students' work can reduce the usefulness of a teacher's evaluations to students when they finally do return to work.

During the days or weeks waiting for a test or assignment to be returned, students are left without information about the quality or nature of their performance; at the extreme they may even have to complete another test or do another assignment before getting information about an earlier one.

Delays in providing feedback about academic performance can never be eliminated entirely, but they can be reduced by keeping accurate, well-organised records of students' work. A number of computer programs are available to help with this challenge.

Accurate records are helpful not only for scores on tests, quizzes, or assignments, but also for developing descriptive summaries of the nature of students' academic skills or progress.

2.7.13. Communicating with parents and/or caregivers

Feedback and accurate record keeping are also important when communicating with parents and carers. Through feedback, schools ask parents to contribute and involve them, endeavouring to enhance collaboration between school and homelife.

Communicating effectively is important for all aspects of teaching but there is a main focus on how communication contributes to a smoothly functioning classroom and in this way helps prevent behaviour problems.

Feedback is essential for students to learn if they are to develop in the classroom that is socially skilled and mature however feedback can only be fully effective if offered as soon as possible, and this is the same with the development reviews and appraisals in the workplace when it is still relevant to the task or activity at hand. To provide feedback six months after a task has concluded would not only be futile and irrelevant, but also promote a bad experience between the teacher and the child.

Parents can normally give teachers feedback if they feel that their child is struggling or being held back in a particular way, and this is where the bond between the teachers and the parents/carers needs to be validated.

However, teachers could also spend more time than is necessary going through feedback which is just parents complaining about something beside the point. Therefore, guidance from the teachers is likely to be required.

[Ferguson, Hanreddy and Draxton](#) found that most teachers were keen to take action as a result of pupil feedback, especially where the feedback suggested that a student's emotional wellbeing was a risk, but also found a minority of teachers unwilling to accept responsibility for learning difficulties faced by pupils, placing responsibility back on the pupils.

2.8. Present Status and Concerns

In general, the procedures of education since World War II have been formulated somewhat independently of the formal theories of learning developed by psychologists, who have had little interest in the specifics of the school context.

At present, while school represents an enormously complex psychological arena, the science of psychology is still struggling with its basic concepts and laws. The beginnings of a resolution of this dilemma are presently found in two forms, reconceptualisation of:

(1) the focus of research in educational psychology; and

(2) the nature of 'teaching'.

Specific topics of study in educational psychology have varied considerably over time, and across cultural-national lines. Four general categories represent most of those subjects presently pursued in this field:

- Learning, which is by far the most frequent topic in the field;
- Readiness for learning, which includes the phenomena of interests, aptitudes, and motivation, mental health and social adjustment, which focus on the non-cognitive purposes of the school and correlates of intellectual learning; and
- Measurement and evaluation, which comprise the techniques for assessing the educational growth of students, diagnosing learning problems, and clarifying the criteria to be used in an evaluation of the school.

The specific aspects of educational psychology merit particular mention in view of their continuing importance, widespread concern, and critical relevance in pedagogy; they are the educability of the student, individual differences, and educational technology.

3. Chapter 3 - Environment, mindset and motivation

The term 'environment' can apply to many areas such as home or school, both combined in a social setting. For the learning process to be affected, experiences are not limited to just the educational environment. Any issues in other areas can also upset the learning process balance.

3.1. In the home

Environment is crucial to many aspects of how an individual works or even survives.

If your home environment, no matter how old you are, is stressful, then this can impact your work and wellbeing.

In the primary school environment, children are trying to master a number of different things. This is not limited to just trying to complete schoolwork, they are also learning to work with others and form social connections, develop their creative and critical thinking, change and adapt their behaviour to follow new rules and etiquette, ensure they behave appropriately, and are gradually being prepared for the workplace.

In the primary school setting (particularly the early years), not only does their learning environment need to be set up to nurture successful learning, but also alongside this, an appropriate home environment is crucial, and there have been several studies that align with this theory.

Opinions in the first half of the 20th century were sharply divided as to which was more important, inheritance in the biological sense or environment. The [nature vs nurture debate](#) describes this further where nature recognizes a child's individuality for what it is and gives up the notion that it was either produced by it except through inheritance all that you can basically change it (A. Gesell, 1929)

Both nurture and nature can provide scope for the enhancements of experiences in school. For the nurture view, according to [J.B. Watson who said in 1930](#); 'Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select—doctor, lawyer, artist, merchant-chief and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors. (1930).'

Both of these examples illustrate two extreme views on learning and development. The argument about whether nature or nurture was more important continued to be perpetuated long after scientists had recognized that was actually nonsense.

3.1.1. Maternal deprivation and employment

Lucas Thompson and Goldberg J Prause created a publication called '[Maternal work early in the lives of children and its distal associations with achievement and behaviour problems](#)'. The research was associated with negative child outcomes when the mother had worked in the early years.

There has been other research which has stated that mothers who work are at greater risk of depression ([NICHD Early Child care Research Network \(2005\)](#)) because they are balancing their careers/work life and family. The reason the

mother is of the most focus is because of their attachment to their children, especially but not limited to, if the mother was pregnant with the child and due to the bond, whatever effects and mother will affect the child to a certain extent but not in every case.

There has been lots of research regarding this topic over the years, but in recent times it is more common for a woman to return to work fully once they have finished maternity leave, therefore can low cognitive outcomes in children really be contributed to this?

Research has suggested that if a career minded woman is stopped from going back to work after having a baby (by family for example), then this could be just as damaging. The mother will likely suffer frustration and depression and this may result in a negative environment for the child.

Psychiatrist [John Bowlby proposed a psychoanalytic theory](#) that juvenile delinquency arose from maternal deprivation in early life causing permanent harm. This theory quickly became a political debate as jobs were needed for returning servicemen after the war and included working mothers on a list of likely damaging circumstances.

Clinical psychologist [Carl Rogers](#) showed that such disruption can be overcome even in adulthood through relationships that involve unconditional positive regard. Unconditional positive regard can be used by parents, teachers, mentors, and social workers in their relationships with children, to foster a positive sense of self-worth and lead to better outcomes in adulthood.

[Michael Rutter](#) (the first professor of child psychiatry in the UK) challenged John Bowlby's idea and found that other factors were involved in delinquency, namely physical and emotional neglect, a lack of positive relationships with any others (not just mothers), and general deprivation from being brought up in institutions.

Rutter's overall conclusion was that blaming disruption on the mother-infant relationship for juvenile delinquency was not justified.

Research has not updated wholly to counter-argue the stress of maternal working on a young child's wellbeing. Now that more people are working from home due to the recent pandemic, we may see a change in research in the coming years.

Currently, the research (particularly ['Maternal Employment and Child Well-Being'](#) by [Cornell University College of Human Ecology](#)), has shown that maternal employment may deprive children of continuity in infant care, and it is said that as a result some children perform lower in school (though, I have not seen much evidence of this through my own personal experiences).

However, a [Harvard Study: Kids of Working Moms Grow Up Just as Happy as Stay-At-Home Moms](#) by Betsy Mikel studied the happiness of children of working mothers compared to stay-at-home mothers. She found that there was actually very little difference, and the children were just as happy as adults, whether their mothers stayed at home or not.

Women have a right to work, and it sets a good example to children. For girls, they are likely to gain the influence that they can achieve in a chosen field of work, whereas in the past this was not possible. With a working mother, boys have the knowledge that they do not have to be the sole breadwinners when they are older. So, while this was a worthy contender to contribute to long term negative experiences for children, the research has suggested that it can be overlooked as a primary reason.

3.1.2. Fatherless families

Research has not always exclusively focused on the mother. The publication '[Are Children Raised With Absent Fathers Worse Off?](#)' by Isabel V. Sawhill, questioned whether children that grow up apart from their fathers do less well on average than children who grow up with both parents.

When fathers live apart from their children, they are less likely to share their incomes with the child, and, as a result the children and their mothers may experience a substantial decline in their standard of living.

Children raised by single mothers are more likely to fare worse on a number of dimensions, including their school achievement, their social and emotional development, their health and success in the workplace.

The paper '[Coparenting and Nonresident Fathers' Involvement with Young Children after a Nonmarital Birth](#)' which involved data from another study to investigate the association between coparenting quality and non-resident fathers' involvement with children over the first five years after a nonmarital birth, concluded:

'...that parents' ability to work together in rearing their common child across households helps keep non- resident fathers connected to their children and that programs aimed at improving parents' ability to communicate may have benefits for children irrespective of whether the parents' romantic relationship remains intact.'

3.2. Traditional classroom environment and socialisation

The classroom environment gives a social atmosphere irrelevant of diversity or intelligence of the students.

Typically, there needs to be a social environment to truly succeed as social experiences inside and outside school are crucial to education. A [well-designed social environment](#) helps foster positive peer relationships, creates positive interactions between adults and children, and provides opportunities for adults to support children to achieve their social goals.

The drawbacks of what some modern-day teaching establishments see are very young children in large classes. As well as teaching a curriculum, ensuring obligations are met and guaranteeing that students are treated subjectively equal, teachers also have to coordinate several teaching assistants, making the occupants of the classroom larger.

Socialisation is a crucial quality to learn as it develops social skills which are needed throughout school and into the working environment. It teaches children how to

appropriately behave in society and how to work in a team. It also helps students generally learn, retain and apply information.

Socialisation also sharpens memory and cognitive skills, and increases a sense of happiness, and can assist with motivation, and humbleness to learn through successes and failures. Friendly competitiveness can be beneficial but it needs to be channelled in school in order to not overwhelm the children, as the experiences can then turn negative.

Perhaps it is not all about socialisation but the bond a child has with someone such as an influential figure like a teacher.

Connection will be apparent if there is a good relationship between student and teacher (something that parents and carers can also be involved with).

While learning begins in the early years, the more a teacher learns about child development, the more they can understand the level of appropriate teaching.

Social development is slightly different as it refers to the long-term changes in relationships and interactions involving self, peers, and family. It includes both positive changes, such as how friendships develop, and negative changes, such as aggression or bullying.

As with cognitive development, each of these areas has a broad, well-known theory that provides a framework for thinking about how the area relates to learning and teaching.

For the development of self-concept and relationships, we would typically refer to the theory of Erik Erikson. For the development of personal motives, it is the theory of Abraham Maslow; and for development of ethical knowledge and beliefs, it is the work of Lawrence Kohlberg and his critic, Carol Gilligan.

Their theories are not the only ones related to social development of students, and their ideas are often debated by other researchers. However, their accounts explain in great detail about social development that is relevant to teaching and education. This area will be developed further in the next section.

3.3. Mindset to learning, behaviour and life events

I have included the topic of mindset within this paper as I believe it is important to the learning process, because it prepares humans to welcome new information. Without this, the learning process can struggle.

It is also important for this thesis to assess whether mindset is a contributory factor to the negative experiences that students encounter during their time in school. There will be crossover between many of the following topics as previously mentioned due to the topic and how it aligns with learning, but also how it aligns with teaching.

The book Instant Psychology includes the definition of mindset in its [Glossary](#), and states that it is a set of mental assumptions that may either facilitate or inhibit learning, depending on the person's self-efficacy beliefs.

3.3.1. Memory and learning

'Every time I learn something new, it pushes some old stuff out of my brain...Remember when I took that home wine-making course and I forgot how to drive?' **Homer Simpson, The Simpsons**

Homer Simpson (from the long running series The Simpsons), wasn't a neuroscientist by any means, but he had some insight into how the brain works with the above phrase as in one episode he says the quote and explains why education was wasted on him. The Guardian newspapers' article called: '[The Homer Simpson effect: forgetting to remember](#)' gives further details.

Memory is important for learning a new skill and retaining knowledge, but it is also something we need to learn about in order to use it effectively. We create memories based on what is attractive to remember. Negative memories may stop us from doing something and make us tentative, whereas positive memories are more likely to make us want to do something.

One area that perhaps encourages fear of failure is forgetting something, particularly if certain learning topics are concluded with a test. Many of us will fear failing a test, even if we are affluent in the knowledge of the topic.

Unless there is damage to the brain, for most of us creating memories is a standard process. Memory aligns with 'practice' as this builds retention, but there is also a difference between learning and memory.

[Learning and memory](#) are closely related concepts. Learning is the acquisition of skill or knowledge, while memory is the expression of what you have acquired.

3.3.2. Declarative and procedural knowledge

One of the factors affecting learning facilitation is the difference between two main types of knowledge which are [declarative and procedural](#).

Declarative knowledge allows one to identify, explain or discuss and is what many might call knowledge that can easily be memorised and recorded on demand. For example, reciting a mobile telephone number or being able to name the Prime Ministers of the United Kingdom (though that number increased somewhat between 2022-2023).

Procedural knowledge is the type of knowledge that allows one to perform tasks and is more challenging to put into exact words because the expertise in those tasks is acquired through the act of doing those tasks' multiple times. For example, driving home from work or riding a bicycle.

Humans are uniquely capable of both declarative and procedural knowledge. There is no other animal yet identified that has this capability, however there is often a disparity between the type of knowledge that needs to be processed, maintained and applied and the methods that are typically used to transmit that knowledge. Procedural knowledge through declarative measures can result in

frustration on both sides of the classroom, due to the process not aligning with expectations, or having impractical examples that cannot be applied to real life.

3.3.3. Different types of memory

The main function of the hippocampus is to encode incoming information into memories which can be retrieved at a later date. This is referred to as 'memory consolidation.

Not all memories are the same, and the known key forms of memory include sensory, short-term/working memory and long-term memory.

(i) Sensory memory

Sensory memory is the ability to hold onto, or 'remember,' information coming through the sense organs for a few moments at a time.

(ii) Short-term / Working memory

[Short-term](#) or working memory is where the average person can store between 5 and 9 pieces of information for approximately 20 seconds. This temporary storage can be extended with repetition, but normally this type of memory is reserved for the likes of a short shopping list, or a high-level list that one would use to write something up later.

Working memory facilitates planning, comprehension, reasoning, and problem-solving. An article was published called '[Working Memory Underpins Cognitive Development, Learning, and Education](#)', and provides details regarding the following different types of memory.

(iii) Long-term memory

Long-term memory is a student's friend. Memories which are important and meaningful graduate to this area of storage. However, once information has crossed into the long-term stores, it is no longer coded phonetically as is the case with short-term memory. Instead, long-term memory is coded semantically in terms of meaning associated with a piece of information.

In order to avoid sensory overload, the brain is excellent at distinguishing between useful and useless information, and narrowing our attention down to the task or most important stimulus at hand.

Long-term memory is something that can play to a teacher/trainer's advantage, however when they are teaching a large classroom, they would need to find the common denominator to achieve an efficient result of processing and retention, without catering to the individual memory needs.

Learning technology providers have developed methods to involve long term memory retention in their marketing strategies when selling technology. Given that we are more distracted than ever due to the advancements in social media, mobile devices and the exhilaration of multitasking in general, retaining information without being distracted has become difficult. Therefore, the legal technology providers cannot be blamed for marketing a strategy like this.

I read a rather entertaining theory in the book *Elephants on Acid* under the chapter *Edible memory*. It poses the idea that someday acquiring a new skill is as easy as going to the doctor's office and getting an injection.

While it is very unlikely to happen, at least in our lifetimes, given the technical and practice ethics involved, I would not be averse to one day instantly obtaining a new skill this way.

The premise of the [chapter](#) was based on individuals in the 1950s and 1970s actually trying to invent a way for humans to learn something new by administering an injection or pill.

3.3.4. Cognitive Information Processing Theory (CIP)

There are many types of long-term memory, but in order for a memory to reach the long-term area of the brain, it needs to be worth remembering.

[CIP or 'cognitive information processing'](#) is a computer metaphor used to describe the inputs, processing and outputs involved in learning.

For example, research has suggested that at least some of the influence goes in the direction from interest to achievement. In an analysis, when primary school children were given books from which to learn about a new topic, they tended to learn more from books which they chose themselves rather than from books that were assigned to them ([Reynolds & Symons, 2001](#)).

Therefore, interest seems to lead to learning and includes the topic of motivation, which will be covered in other sections of this paper, but, this conclusion does not rule out its converse, that achievement may stimulate interest as well.

3.3.5. Learned helplessness

If a student has little personal interest in a topic or activity, the teacher is faced with a situation where they can hope that the initial interest will gradually become personal.

[Martin Seligman](#), an American psychologist and educator, used a rather 'gloomy' experimental procedure to describe learned helplessness. The experiment involved an animal, such as a rat or a dog, who was repeatedly shocked in a cage in a way that prevented the animal from escaping the shocks. In a later phase of the procedure, conditions were changed so that the animal could avoid the shocks by merely moving from one side of the cage to the other. Yet frequently they did not bother to do so.

Seligman called this behaviour learned helplessness. In people, learned helplessness leads to characteristic ways of dealing with problems. They tend to attribute the source of a problem to themselves, to generalise the problem to many aspects of life, and to see the problem as lasting or permanent. More optimistic individuals, in contrast, are more likely to attribute a problem to outside sources, to see it as specific to a particular situation or activity, and to see it as temporary or time-limited.

Consider, for example, two students who each fail a test. The one with a lot of learned helplessness is more likely to explain the failure by saying something like, 'I'm stupid.' 'I didn't study hard enough.' 'The test was too hard.'

3.3.6. Does age matter when it comes to learning?

Traditional studies regarding age gave negative results because of the methods used to measure the data. Therefore, those negative summaries have been the point of focus for many, and this is normally the cause as to why people feel anxious about learning when they are older, and can sometimes use it as a reason not to continue learning.

Now studies are concluding that intelligence can increase as we age, as long as we use it. Therefore, our capacity to learn will continue well into our senior years.

Memory also does not necessarily [decline with age](#). Research has shown that younger people have more small memory lapses than retired people, but older people notice their memory lapses more. Young people tend to not think about it, whereas older people notice each time and worry that they are declining. No doubt this is due to the negative studies and stereotypes that have been released into general knowledge over the years.

The age range in the workplace can span over generations, therefore learning can often include change management, and be catered to a varied audience.

As we get older learning typically takes longer and this is due to life commitments, but any anxiety felt towards learning will be the same. The environment will just be different.

Even though children in the first 5 years learn more than any other time, it doesn't mean we don't have the capacity to learn just as much in the same period of time in our later years.

3.3.7. Stressful events

The more adverse experiences a child suffers, the greater the likelihood of developmental delays and other problems. These may include health issues, alcoholism, depression, heart disease and diabetes, that could continue into a child's adulthood, and impact their future life choices, careers and relationships.

[Stressful events](#) vary in scale depending on what they are, and although small amounts of stress will not harm the body, other stresses can be fatal. Children tend to be more resilient than adults, but they can still be affected by severe stress, such as the death of a close family member, divorce or frequent change.

[A children's Health website](#) mentions that children feel stress when there's something they need to prepare for, adapt to, or guard against. They feel stress when something that matters to them is at stake. Change often prompts stress, even when it's a change for the better.

3.3.8. Why children do not want to go to school

According to mainstream newspapers this year, school absences are not just for children who suffer with anxiety, have special needs or are being bullied. [BBC](#) reported that more than one in five children in the UK are frequently missing school. [Department for Education \(DfE\) figures](#) show that 22.3% (around 1.8 million) of pupils in the UK were persistently absent from schools.

In the week commencing 11 September 2023 there was a 5.0% absence rate in schools across the UK. Of this the authorised absence rate was 2.9%, which made unauthorised 2.1%.

In recent years the measure for absences has been rather skewed in comparison to pre-pandemic years, as some children did not go back to mainstream school. Since the pandemic, schools and workplaces have stricter policies in place if someone is ill. Typically, the person who is ill is not allowed to attend school or the workplace until the illness has completely gone. As a result, this then contributes greatly to the absence rate. For workplaces some employees may be able to take advantage of remote working so they do not fall behind, but this isn't always the case with children.

The children's commissioner Dame Rachel de Souza said some children play truant while others experience anxiety or have educational needs, so they find it easier at home. She also said it was really important to get those children who were anxious and 'refusing on an emotional basis' to go back to school. Having said that, Dame Rachel is not in those children's houses first thing in the morning when their no doubt also stressed parents/caregivers are most likely doing everything in their power to encourage their children to school.

If children are regularly absent then parents/caregivers are [fined](#) by the local councils, and if the absence is severe then it could lead to prosecution. While it has been stated that the likely reason stems from the pandemic as more parents are at home, their solutions of offering more breakfast clubs and focusing on mental health may not be the answer. The accurate record of reasons behind the absence would be a good place to start.

The Guardian newspaper published an [article](#) which included the following:

'...perhaps the most perplexing problem facing headteachers is an apparent wave of chronic anxiety in children, leading to what was formerly known as school refusal – now termed 'emotionally based school avoidance'. For some children who found school difficult and craved the comfort of home, leaving the cocoon of lockdown was obviously tough. But for others, anxiety seems to have emerged only under the stress and isolation of the pandemic. And sometimes children's own feelings can be hard to disentangle from those of parents anxious about mixing socially again. Whatever the cause, this autumn offers a critical opportunity for a fresh start.'

For schools' absenteeism is a safeguarding issue, because for some children, failing to turn up could signal they are in danger. For parents, it is clear that their children are experiencing different degrees of stress. Some parents manage to

encourage their children to attend school, while others have had to give up work and homeschool because their child has stopped sleeping, or eating or has begun self-harming.

The [NHS found](#) one in six children aged 5 to 16 had a probable mental health disorder in the summer of 2020. According to the school's insurer Zurich last year, 42% of parents felt their children experienced frequent anxiety. But it's not always clear what the generic term 'anxiety' means, especially given the long waits many children face for assessment by an NHS specialist.

There are a number of reasons why a child does not want to go to school, but it is clear that the increase of absences is due to a wave of anxiety, in which case can COVID really be held responsible for this, or is it something else?

Many of the examples given in these articles detail testimonies from autistic or ADHD children and their parents. Some children are on action plans (known as EHCP) with provisions for the school to provide reasonable adjustments, but the schools sometimes do not have the staff available to cater for the needs of the child. Additionally, the staff they do have in place may not be fully equipped to deal with the needs of the children. This has resulted in many children being homeschooled by their parents who have had to give up work just to ensure their children can be adequately cared for full-time.

3.3.9. Behaviour

'Education survives when what has been learnt has been forgotten' - **B.F. Skinner**

Conditioning and reinforcement have been used as teaching strategies for many years. While these strategies are sound and proven in many cases, in others, they can convey the wrong message to children and result in negative experiences.

Conditioning in the more classical sense begins with something (a stimulus) that automatically causes a reaction. The famous experiment to support this by Ivan Pavlov (an experimental neurologist) was regarding a salivating dog in response to food, the food being the stimulus. Once the process had been learned by the dog, then the stimulus was changed to a bell and this was then a conditioned (or learned) stimulus.

[Pavlov's theory](#) suggests that emotional responses can also be conditioned. This means that our emotional reactions to certain stimuli can be shaped and influenced by our past experiences and associations.

The findings on behaviour to learning by [B.F. Skinner](#) (a behavioural psychologist), was not necessarily concerned with the means of studying something (such as cognition, the mind or brain), but the reaction or response we have to something.

The most common version of the behavioural perspective on motivation is the theory of operant conditioning which is famously associated with B.F. Skinner.

In the operant model, a behaviour being learned (the 'operant') increases in frequency or likelihood because performing it makes a reinforcement available.

To understand this model in terms of motivation, think of the likelihood of response as the motivation, and reinforcement as the motivator. For example, a student learns by operant conditioning to answer questions during class discussions. Each time the student answers a question (the operant), the teacher praises (reinforces) this behaviour.

In addition to thinking of this situation as behavioural learning, it can also be thought of in terms of motivation: the likelihood of the student answering questions (the motivation) is increasing because of the teacher's praise (the motivator).

3.3.10. Reinforcement

Positive Reinforcement is intended to increase the likelihood of a behaviour when added to a situation. Stimulus that motivates by the presence of an 'incentive' can be when a teacher makes encouraging remarks about a student's homework.

Negative Reinforcement Stimulus that increases the likelihood of a behaviour, by being removed or taken away from a situation and the stimulus that motivates by its absence or avoidance. For example, the teacher stops nagging students about late homework.

Punishment Stimulus decreases the likelihood of a behaviour being introduced or added to a situation. The stimulus decreases motivation by its presence. For example, the teacher deducts points for late homework.

Extinction Removal of reinforcement for a behaviour is the removal of motivating stimulus that leads to decreased motivation. For example, the teacher stops commenting altogether about a student's homework.

How information is presented can help or hinder students' learning and there are a range of methods that can be used to help assist with behaviour and mindset, so student productivity is encouraged in a healthy manner. For example:

- Using images and diagrams (such as mind maps), and strategy-based information processing theory to assist with encoding and retrieval/recall.
- Arranging extensive and variable practice to avoid monotony.
- Rehearsal (practice makes perfect, but also makes permanent so this one can be a doubtful advantage).
- Practice in a variety of contexts prevents learning being context-specific. Enhances students' encoding and memory

- Enable metacognition for students (awareness and control over their thinking and self-regulatory behaviours). This shifts the focus of the student from the instructor to them.

3.3.11. Unintended negative reinforcement in the classroom

This is also aligned with creating a culture, but the negative situations can be a student isolating socially, which could mean the student publicly misbehaves, and then gains others' attention. We have all seen this where someone has to gain attention any way they know how, this can be disruptive in a classroom and work environment if not monitored and/or managed. However, this can also be the result of a cry for help, that is going unrecognised or strategically ignored (whether unintentionally or not).

Reinforcement can happen in class if an undesirable behaviour leads to a less aversive state for a student. Social isolation can be reduced by public misbehaviour, which stimulates attention and that is reinforcing. Ironically, the effort to end misbehaviour ends up stimulating the misbehaviour.

Not identifying inappropriate behaviour is not only irresponsible for a teacher, but also are experiences that can have an effect on a student's future endeavours because a lot of time was applied to discipline, rather than school work and progression.

3.4. Motivation is behaviour

Where many concepts from operant conditioning can be understood in motivational terms, another example is the concept of extinction. This is not in the sense of a species, but where learned behaviours become less likely when reinforcement no longer occurs. This is a sort of 'unlearning', or at least a decrease in performance of previously learned. There is always a high risk of this in school, and the action is quite often unintentional.

The decrease in performance frequency can be thought of as a loss of motivation, and removal of the reinforcement can be thought of as removal of the motivator.

3.4.1. Motivation and learning

There are many reasons why motivation is important when learning, it allows us to change behaviour, develop competencies, be creative, set goals, grow interests, make plans, develop talents, and boost engagement, to name a few.

Motivation can be fragile, it needs will and self-belief to be successful and more often than not, it is easier to demotivate students than it is to motivate them.

Motivation is mostly intrinsic, and it originates from within an individual from internal or external stimuli, and is an outward driving force that makes people feel compelled to do something. This rather deflates the notion that motivation is a spiritual force that can make us do anything if we only believe, but intrinsic motivation can stem from peer pressure, fear, expectations and how humans perceive themselves.

Children's experiences shape their motivation and approaches to learning, such as persistence, initiative, and flexibility; in turn, these dispositions and behaviours affect their learning and development.

The theory of motivation was based on the idea of needs and is a [self-determination theory](#), proposed by psychologists Edward Deci and Richard Ryan (2000). Among others, the theory proposes that understanding motivation requires taking into account three basic humans needs:

1. Autonomy - the need to feel free of external constraints on behaviour.
2. Competence - the need to feel capable or skilled.
3. Relatedness - the need to feel connected or involved with others.

Therefore, using this as a benchmark for basic needs in a school environment, for a student to achieve a feeling of self-determination, the student's basic needs must be met.

Motivation can be understood in a variety of ways such as behaviour, goals, interests, self-efficacy and self-determination.

An [article](#) by High Speed Training states that motivated students are much more likely to achieve their potential and find success. Motivation is an essential ingredient in effective teaching and learning. It not only yields more positive behaviour in students, but it also contributes to a greater sense of wellbeing. Understanding how to motivate children and young people in education is crucial, if we are to provide them with the best possible start in life.

3.4.2. TARGET: a model for integrating ideas about motivation

Researchers Carole Ames and Joyce Epstein created the [TARGET framework](#) and strategies for supporting mastery goals in the classroom, to motivate learners to learn intrinsically.

The acronym TARGET stands for six elements of effective motivation. Each of the elements contributes to students' motivation either directly or indirectly, and they are as follows:

- **Task** is creating activities and tasks that are challenging but also have a purpose so students see the value. Tasks without a purpose or that do not directly connect to outcomes can feel like a waste of time.
- **Authority** is the concept of autonomy (or authority), promoted as a key tactic to foster problem-solving skills and improve performance. Authority is important when it comes to promoting engagement and motivating students to work toward mastery goals in the classroom. When a student has autonomy, there is a sense of responsibility for their own learning outcomes, which in turn, makes it more likely that they will successfully complete the task. According to Carole Ames, this sense of control has a significant impact on independent thinking giving participants the

opportunity to own their own learning by giving them choices in the classroom.

- **Recognition** is the feedback that an educator provides to their students. It is key to driving motivation while promoting growth and performance. Recognition must be specific and targeted so that students can make any necessary changes to be successful.

As with any feedback, the timing is crucial as the quicker it is provided, the quicker the student will be able to make a change and continue the learning process. Appropriate language also needs to be used in order to acknowledge the effort and progress of the student, but that also conveys and promotes a growth mindset.

- **Grouping** is about social interaction and learning from peers. This works for both adults and children even if they are not the most social of individuals, they can still benefit from others' ideas. Social learning has been said to have psychological health benefits and increases the achievement of the whole group. For this element, the teaching needs to cater for both individual and group activities.
- **Evaluation** promotes mastery goals. The teaching must provide opportunities for students to improve throughout their studies and receive timely feedback. This also creates opportunities for students to self-evaluate or for the educator to evaluate them based on clear manageable standards and expectations.
- **Time** is the duration it takes to complete a task or learn a concept which varies from student to student. Therefore, it is important for the teacher to ensure that the pace and level of work can accommodate individual differences. Engaged or quality time is more important than the total duration of the tasks. If there is any uncertainty regarding how long a student takes on a task, this element can also be used to determine how flexible a student needs to be with timing and how long it takes them to complete the task. It helps the teacher adjust the length of the task (if required), and provide extra attention to those who need it, so that all students can complete the tasks successfully.

3.4.3. Self-efficiency

Self-efficacy theory is a major perspective of motivation and focuses on a person's belief that they are capable of carrying out or mastering a task.

High self-efficiency affects students' choice of tasks, their persistence at tasks and their resilience in the face of failure and it also helps to prevent learned helplessness.

In the book '[Instant Psychology](#)', there is a reference to gaming and efficiency. Computer game designers/programmers use a psychological principle of self-efficiency and incentives as they show how persevering achieves results in the long term. This can be a positive benefit of gaming.

There is little evidence that computer games are more harmful to children than other passive activities, and in some ways, it can be theorised that perhaps games are leading a very good example of perseverance and achievement. However, computer games do carry an anti-social element to them but at the same time, in recent years, there has been more online and collaborative gaming which has been striving to undo the theory of antisocial behaviour.

Self-efficacy beliefs are linked to the general mental approach an individual takes to living. Some people have a growth mindset believing that they are in control of their lives and can learn and improve, while others have a mindset believing that their abilities are fixed and uncontrollable. Having a growth mindset is an important key to personal achievement and people can be encouraged to develop a growth mindset by achieving a series of small manageable goals, which in turn once they become successful, they will then want to be successful again.

3.4.4. Gender differences with motivation

On average, girls are more motivated than boys to perform well in school. By the time girls reach secondary school (11-12 years old), some may try to downplay their own academic ability in order to make themselves more likeable by both sexes ([Davies, 2005](#)). Even if this occurs, it typically does not affect their grades. Throughout their school year groups, girls earn slightly higher average grades than boys ([Freeman, 2004](#)).

However, because children move into secondary school, they then have the ability to choose courses or subjects conventionally associated with their gender. When this research was first carried out on this topic, it was typical for boys to choose maths and science whereas girls would opt for literature topics and the arts. Now motivations and influences are different, we see more girls in technology than ever before, for example.

By the end of secondary school, this difference in course selection makes a measurable difference in boys' and girls' academic performance in these subjects. But as it has always been, there are individuals of both sexes whose behaviours and choices run counter to the group trends.

It is interesting that even as recent as 2004, trends were influencing children to choose a certain career path. However, it is not as limited as when my mother grew up in the 1960s and girls were expected to go into clerical roles. Nowadays there is a little cognitive difference between boys and girls and equality and diversity has been embedded into most learning and working establishments therefore the motivations have changed.

3.4.5. Motivation and hierarchy of human needs (Abraham Maslow)

Cognitive bias causes us to make questionable divisions and erroneous choices. It is sometimes our risk that may stop us proceeding with something, at the same time, it may also contribute to us making detrimental decisions, or errors in judgement. While these degrees of decision making are the more extreme, the same principle applies to general day to day thinking.

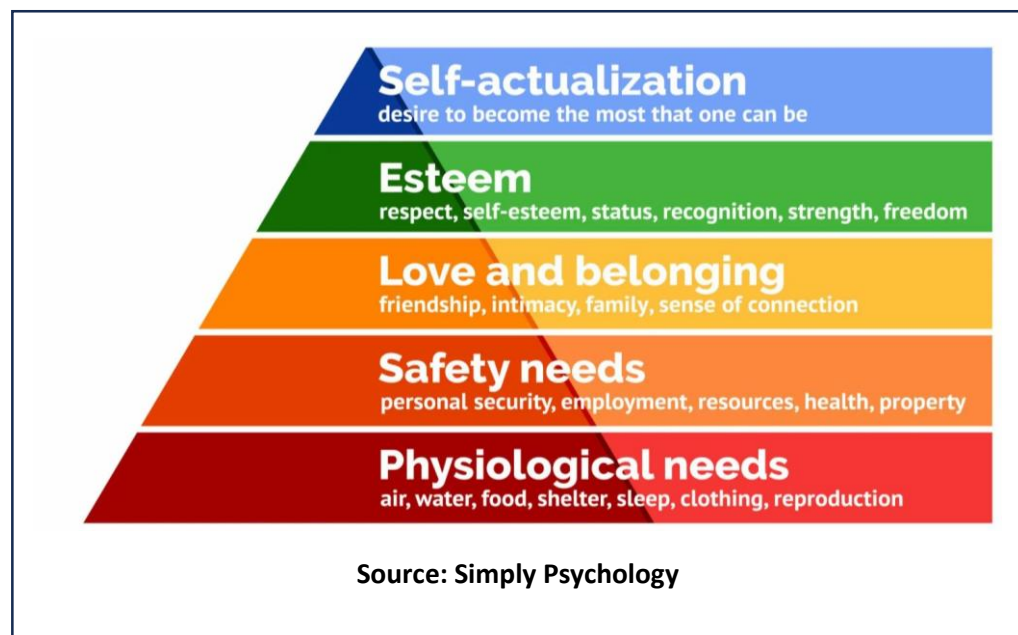
With regards to learning, it may stop us from taking that step to progress in education or even career, which is also known as the status quo bias (the fear of change). Therefore, we make choices to stay in our comfort zone or safe space, and keep to the same routine.

[Abraham Maslow](#) (an American psychologist) described the hierarchy of needs as an example of motivations that function like needs that influence long-term personal development.

According to Maslow, individuals must satisfy physical survival needs before they seek to satisfy needs of belonging, they satisfy belonging needs before esteem needs, and so on. Needs are split into two where they have a deficit need and growth need, and the deficit need must be satisfied before growth needs can influence behaviour. In other words, humans tend to gravitate towards the negative elements of a situation rather than, or before, the positives.

Compared to the stage models of Piaget and Erikson, Maslow's hierarchy is only loosely 'developmental', in that Maslow was not concerned with tracking universal, irreversible changes across the lifespan. Maslow's stages are universal, earlier stages sometimes reappear later in life; in which case they must be satisfied again before later stages can redevelop.

Maslow's hierarchy of motives and needs are as follows:



Deficit needs are the basic requirements of physical and emotional well-being, but the first are physiological needs - food, sleep, clothing, and the like. Without these, nothing else matters, and especially nothing very 'elevated' or self-fulfilling. A student who is not getting enough to eat is not going to feel much interest in learning.

Once physiological needs are met, safety and security needs become important. The person looks for stability and protection, and welcomes a bit of

structure and limits if they provide these conditions. A child from an abusive family, for example, may be getting enough to eat, but may worry chronically about personal safety.

In school, the student may appreciate a well-organised classroom with rules that ensures personal safety and predictability, whether or not the classroom provides much in the way of real learning.

After physiological and safety needs are met, love and belonging needs emerge. The student turns attention to making friends, being a friend, and cultivating positive personal relationships in general. In the classroom, a student motivated at this level may seek approval from peers or teachers as a top priority. The student may be provided for materially and find the classroom and family life safe enough, but still miss a key ingredient of love in their life.

If such a student (or anyone else) eventually does find love and belonging, however, then their motivation shifts again, this time to esteem needs. Now the concern is with gaining recognition and respect, and even more importantly, gaining self-respect. A student at this level may be unusually concerned with achievement, for example, though only if the achievement is visible or public enough to earn public recognition.

3.4.6. Being needs: becoming the best that you can be

Being needs are desires to become fulfilled as a person, or to be the best person that you can possibly be. They include cognitive needs (a desire for knowledge and understanding), aesthetic needs (an appreciation of beauty and order), and most importantly, self-actualisation needs (a desire for fulfilment of one's potential).

Being needs tend to emerge only after all of a person's deficit needs have been largely met.

People who are motivated by self-actualisation have a variety of positive qualities, which Maslow went to some lengths to identify and describe in 1976, he argued that self-actualised individuals, value deep personal relationships with others, but also value solitude; they have a sense of humour, but do not use it against others; they accept themselves as well as others; they are spontaneous, humble, creative, and ethical. In short, the self-actualising person has just about every good quality imaginable.

Self-actualisation was therefore classed as rare, and especially unusual among young people, who have not yet lived long enough to satisfy earlier, deficit-based needs. This is perhaps the reason why we see children as being spiteful sometimes in their general interactions. It may not be their intention to hurt others but it is likely due to not having the experience and balance that comes with the positive qualities of self-actualisation. This is more to do with motives as behaviour (or goals and interests) which delves deeper into the psychological side of motivation and is not necessarily needed for this thesis.

3.4.7. Happiness and positive learning - an ingredient of motivation

Motivation needs to come from somewhere in order for anyone to learn in the absolute senses. Without motivation, learning can still be successful but it is a struggle for the student.

Demotivation can derive from a student being unable to understand their work, maybe there is a language barrier, which does not mean they know a different language, it could be a poor language acquisition of the child in general, or the teacher's inability to explain something because they are too busy. The child could be experiencing anxiety because of issues at home, a stressful event, bullying in school and so on. There are many things that can demotivate a child, several examples of internal and external stimuli have been mentioned above. In addition to everything a child is expected to learn, they have to try and understand others intentions as well. This skill alone can take years to master. It is certainly not expected to be achieved during primary school years, so this is where a teacher and parents/caregivers have the opportunity to provide guidance.

There have been many studies around the world looking into the benefits of a happy working environment.

For example, on page 3 of the paper '[The Benefits of Frequent Positive Affect: Does Happiness Lead to Success?](#)', it gives examples of short term and long-term effects of happiness.

[Warwick University published an article](#) about a study; 'Happiness and Productivity' by Andrew J Oswald, Eugenio Proto and Daniel Sgroi. Professor Oswald said:

'Companies like Google have invested more in employee support and employee satisfaction has risen as a result. For Google, it rose by 37%, they know what they are talking about. Under scientifically controlled conditions, making workers happier really pays off.'

It was concluded that happier workers use the time they have more effectively, increasing the pace at which they can work without sacrificing quality.

In China [a study](#) was conducted which measured the influence of college education on happiness. It was observed that college education did improve happiness, but this positive association was stronger in males than in females. Furthermore, college education was observed to improve happiness by improving individual political status, perceived personal status, health and family social status, but not by increasing personal income.

According to a study from [Harvard University](#), an analysis found several key associations on how schools can optimise students' learning experiences. It also found that happiness positively correlated with GPA ('grade point average').

At the other end of the scale, [Oxford University](#) reported that happy workers are 13% more productive.

Happiness may not always be present, especially if a student is studying a subject they do not like but has to do. However, there are ways to make the topic more manageable and interesting. If the student is young, such as in primary school age, this is also where the onus is on the teacher to guide the student.

It is obvious that positive emotions increase the ability to learn, but it has been said that it also increases our ability to process information and retain it which has a direct impact on the memory.

The concept of happiness in education could quite easily warrant a thesis in itself but here the inclusion of key points regarding happiness motivation in learning will suffice.

There are some studies which state that college education is perhaps a more positive experience, maybe because at that point students are learning their chosen topics so the enthusiasm, motivation and happiness comes from that. Or maybe because the atmosphere comes with more independent routines and schedules.

3.4.8. Should happiness be a goal of education?

In the words of philosopher Nel Noddings: 'happiness should be an aim of education, and a good education should contribute significantly to personal and collective happiness.' 28 Oct 2018

The [source article](#) where this is from called (Happiness and education – theory, practice and possibility), goes on to say, some of which I have paraphrased, that unfortunately, much schooling and non-formal education has become increasingly directed towards the economic end of the scale. The result being a narrowing of educational experiences within schooling, and the country endorsing an informal education and lifelong learning. Now, it seems, a sharply decreased ability to add to the student's well-being. If those concerned with the new science of happiness are to be believed, most of the educational policy surrounding it is profoundly misguided. I believe and concur with this.

Do emotions affect our short-term memory? [A poster](#) was created that details a study by Andrew Amieiro, Nyasia Orr, Magdoline, Gianna Basile, where the theory and findings are that emotions can affect our short-term memory ([Levine & Burgess, 1997](#)).

Happiness and sadness have the most effect on our brains because they are the emotions that we feel most frequently. A [study](#) was conducted to test a hypothesis on our ability to retain specific information while sad, if happiness can help improve our memory, and to discern how these emotions affect our short-term memory.

3.5. Stress and Cognitive bias

On the reverse of happiness can of course be stress.

Some stress can be good for us as it serves as a motivation, enhancing our physical performance because of the release of adrenaline which is why some people feel like they get superhuman strength at times of high stress, as it can make us work harder and feel more productive to achieve more. Whereas a little stress goes a long way, a lot of stress can do the opposite.

Elevated levels of cortisol which is a stress hormone, can literally eat away at our physical, mental and even emotional health. Stress can trigger a chemical change that can make us even more irritable. Chronic stress may even shrink our brain and as little as one stressful event can actually kill brain cells.

Researchers at the [University of California at Berkeley](#) discovered that in a state of chronic stress the brain generates more myelin producing cells, and fewer neurons when compared to a typical brain. All of this results in excess myelin or excess in that insulating layer of protective coating around the neurons.

According to psychologist Daniel Goleman the hippocampus is especially vulnerable to ongoing emotional distress because of the damaging effects of cortisol.

The effects of chronic stress Can result in impaired memory or understanding avoidance of social interactions or even social anxiety, all of which are possible in a school environment if the student is overwhelmed.

3.5.1. Cognitive Bias

The human brain is capable of 1,016 processes per second. This fact makes the human brain the most powerful computer in existence.

The glitches in our thinking that calls us to make questionable decisions and erroneous choices, where our thinking doesn't always work the way it should, is known as cognitive bias. This is a systematic error in thinking that affects the decisions and judgments that humans make.

According to social psychologists this cognitive bias helps us to process information more efficiently, especially in dangerous situations, but this may also lead us to grave mistakes and errors in our judgement. This is exactly why our thinking maybe flawed all of which could lead to anger and aggression, and it is not discriminatory on age either, there are many examples of bias such as the following:

- **Confirmation bias** - humans love to agree with people who agree with us this confirmation bias is why we socialise with people who have similar tastes and viewpoints we also tend to put off be put off by other people or groups that make us feel uncomfortable or insecure about these views and this is what B.F. Skinner called cognitive dissonance.

These inconsistent perspectives fuel our pre-existing views while at the same time cause us to ignore or dismiss opinions no matter how valid, that threaten our worldview.

- **Ingroup bias** is similar to confirmation bias. It is the idea of in group bias which has to do without innate tribalistic tendencies. This tendency may

also have something to do with a neurotransmitter called oxytocin or the love molecule which helps us to forge tighter bonds with people in our group.

- **Gambler's fallacy** is the tendency to do with the fact we tend to put a tremendous amount of weight on previous or prior events which influence our future outcomes again this is not discretionary to age.
- **Status Quo** is where humans tend to have a fear of change which often leads us to make choices that guarantee that things remain the same, or that change as little as possible. In other words, we like to stick to our routines, political parties and even our favourite meals at restaurants.
- **Negativity Bias** is where humans tend to focus on bad news from the onset, which becomes habitable and causes us to think pessimistically in life.
- **Bandwagon Effect**, is where individuals go with the flow and follow the crowd, also known as groupthink or a hive mind mentality that causes us to try and conform even if it doesn't align with our personal beliefs.
- **Projection Bias**, is where humans are often trapped inside their minds and it becomes difficult to see outside of their own thinking. This cognitive shortcoming often leads to a related effect known as the false consensus bias where we tend to believe that people not only think like us but that they also agree with us.

The above terms and 'conditions' are summarised by researchers and psychologists alike, but if this is what is happening with students (as part of their blueprint so to speak), then this should be enough for teachers to include in their schedules.

With all this in mind it is no wonder that humans have a tendency to be their own worst enemies.

People are more equipped to deal with topics and subjects that were not widely discussed several years ago, it is ok not to be ok, and it is now more encouraged to speak to someone if one is not feeling 'ok'. But humility is something we need to learn from any early age, it is not something that appears to be wired into us. As we get older, we can process the reasons behind this when we are older because we understand more as we get older.

3.5.2. Cognitive Behaviour Therapy (CBT)

As learning involves behaviour and mindset, the question can be asked whether anxiety towards learning is all in the mind. Do we worry for no reason?

For example, in an episode of Young Sheldon called 'The Yips and an Oddly Hypnotic Bohemian (TV Episode 2021)', Missy gets 'the yips' and loses her pitching game in baseball. Then she confides in her brother Sheldon, who then follows the same behaviour and blames her for giving him the 'science yips'

when he fails to complete a test. He knows the answers but his mind draws a blank in the test because of the influence of their earlier discussion.

Accidental behaviour conditioning and how all experiences even when not direct but linked could result in a bad experience of school. We have all heard how news travels fast, if it is something compelling then it tends to be remembered and sometimes inserted into our behaviour.

While I am not looking for remedies in this thesis per se, Cognitive Behaviour Therapy (CBT), examines thoughts, emotions and behaviours in the present to improve someone's state of mind.

In any challenging situation we respond with a thought which immediately creates a corresponding feeling and physical reaction that dictates our behaviour.

For example, if a girl goes to school wearing a pinafore dress rather than a skirt, and the other children make fun of her because she is wearing something different to all of the other girls, she may then feel bad or ashamed. The situation has affected her and her thought process, and she will likely then have a bad time in school and it could affect her behaviour and actions in the following days, weeks or even years. It may even get to the point where she will want to leave the school, creating a lasting effect. This is where CBT can help.

The fathers of CBT were Albert Ellis who developed rational and emotive behaviour therapy, and Aaron Beck who developed cognitive therapy. They used the '[ABC Model](#)' to help people focus on each stage of what is happening, break it down, and go from there. The problem is not always the activating event, but the irrationality of the negative belief. The aim is to change the impact to a rational belief, and the consequence can still be negative, but no longer unhealthy. The person then learns from the situation and decides what they want to do next.

It is clear that teaching is a complex profession, which carries many considerations that change on a day-by-day basis. Knowing how to troubleshoot, and remedy a situation in school is just one of the challenges a teacher faces each day.

SECTION C

4. Chapter 4 - Case Study

To obtain some real-life examples of how experiences from school can affect students in the future, I conducted my own case study, a copy of which is provided on the following pages.

Keeping in mind the information in previous sections, I wanted to discover if experiences from school affected a student's further education and career choices by asking a group of individuals to fill in a questionnaire.

The key areas that make up this study are, motivation, influence, educational and/or childhood experiences and economics which can also include financial influences on the family household.

The participants needed to be adults (18 years and over) or had left full-time mandatory education. They needed to be from different walks of life ideally, and happy to provide details about their education, their further education and also their career choices. They also needed to provide any information on outside influences, such as from friends, peer pressure and encouragement or influence from parents or caregivers.

There were many routes I could look into, but one of my interests regarding the appeal to learning for primary school children, was to do with the age homework is set. My theory is that if homework is set at a young age, and an unreasonable amount of work is placed on a child, then this could cause a negative experience which could influence the child's behaviour as they progress through school. It could even go as far as the workplace.

The questionnaire introduction text was important but I had to be mindful that in today's society of technology and scan reading, the instructions needed to be clear and concise where possible, otherwise people would not fill in the questionnaire instinctively.

GDPR was also taken into consideration and demographic information was not asked for. There was only one section to do with the year range a participant attended school (question 1), and some participants chose not to fill that in. The purpose of this question was to identify any changes in education that may be significant to this thesis. Other than this, participant names and identifiable information has remained anonymous.

A copy of the questionnaire and the initial guidance is set out on the following page.

4.1. The Questionnaire

QUESTIONNAIRE IN SUPPORT OF PHD STUDY TITLED: Do Primary educational environments and experiences shape our motivation to further educate ourselves as adults?

Thank you for taking the time to fill in this questionnaire

There are no right or wrong answers, and this is not designed to be intrusive. It is best to answer the questions instinctively and try not to overthink them where possible. This may be difficult at times as there are many different routes our education can take.

The aim of this analysis is to be high-level, but at the same time look into whether primary education has an impact on an individual's motivation to continue education through to their adult years.

Please keep in mind:

- No demographic information will be taken or disclosed with this study. Your name, email address and any identifying features will not be included, the only personal information is the year range of when you attended primary education (question 1), and this is so it can be measured against current curriculums and other data.
- There is a difference between **education** and **learning**. We learn everyday instinctively and quite often subconsciously, whereas in most countries' curriculum-based education is mandatory until a certain age, and something we can also choose to do after mandatory education has finished.
- The main focus here is on **primary education age** (typically between 5 and 11 years old).
- The focus is also on where our **motivation** comes from to learn (apart from the Hippocampus).
- There will be some mention of **secondary** and **further education**.
- **Secondary education** age is typically between 11 and 16 years. **Further education** means education after mandatory education is complete (typically 16+ years old in the UK, and 16-18 years old in other countries). Further education means, sixth form, college and university (including online learning).
- If you changed schools at any point in your education and you cannot provide a yes or no answer, use the third column to add more details.

- Please note that for the purposes of this questionnaire, primary education also refers to home-schooling.

Question	Answer (delete or cross out where appropriate)	Any further notes you wish to provide can be added here.
<p>1. When did you attend primary education?</p> <p>Please provide a year range (for example, primary education is typically attended between the ages of 5 and 11 years old in the UK).</p>	<p>YYYY - YYYY:</p>	
<p>2. Did your primary education mainly take place in the UK?</p>	<p>Yes/No</p>	
<p>a. If 'no', what country did your primary education mainly take place in?</p>	<p>List:</p>	
<p>3. Overall, did you enjoy primary education?</p> <p>NB: If you changed schools and cannot give a yes or no answer, please use the third column to provide further details.</p>	<p>Yes/No</p>	
<p>4. Did you find the curriculum or the school/education setting (e.g. school) boring?</p>	<p>Just the curriculum The education setting Both I did not find either boring</p>	

Question	Answer (delete or cross out where appropriate)	Any further notes you wish to provide can be added here.
5. Can you recall the topics you learned in your primary education setting?	Topics:	
6. Were you educationally challenged during your primary years?	Positively challenged Negatively challenged	
7. Can you remember what age you were when you started receiving homework?	Age (roughly):	
8. Did you like your educators (e.g. teachers) in primary education? NB: If you changed schools and cannot give a yes or no answer, please use the third column to provide further details.	Yes/No	
9. Were you motivated to learn at your primary educational setting (e.g. school)? NB: If you changed schools and cannot give a yes or no answer, please use the third column to provide further notes.	Yes/No	
a. If 'no', did your motivation to further educate happen when you left mandatory education?	Yes/No	

Question	Answer (delete or cross out where appropriate)	Any further notes you wish to provide can be added here.
b. If 'yes', did you go on to further education (i.e. sixth form, college or university)?	Yes/No	
10. Did you continue on to further education after secondary education? (ie sixth form, college or university)	Yes/No	
a. If 'no', did you go straight into work?	Yes / No / NA	
11. Did you enjoy secondary and/or further education?	I enjoyed both I enjoyed secondary education I enjoyed further education I didn't enjoy any of it	
12. Were you influenced by sources/individuals outside of your primary education setting (e.g. school), to continue on to further education? NB: Other sources can be family, friends, individuals who had an impact on your life.	Yes/No	
13. What type of work do you do?	Technology Legal Clerical	

Question	Answer (delete or cross out where appropriate)	Any further notes you wish to provide can be added here.
<p>NB: Delete non-applicable work areas from the list in column 2. You can select multiple types of work if applicable.</p>	<p>Education Administration Banking Building/Plumbing/Electrical Food Other (please specify in the next column). Not applicable</p>	
<p>14. Has this always been your area of work?</p>	<p>Yes/No</p>	
<p>a. If 'no', what other areas have you worked in?</p> <p>NB: Delete non-applicable work areas from the list in column 2. You can select multiple types of work if applicable.</p>	<p>Technology Legal Clerical Education Administration Banking Building/Plumbing/Electrical Food Other (please specify in the next column). Not applicable</p>	
<p>15. Do you study now?</p>	<p>Yes/No</p>	

Question	Answer (delete or cross out where appropriate)	Any further notes you wish to provide can be added here.
a. If 'yes', do you study for personal development/hobby or career development?	Personal / Hobby / Career	
<p>16. Do you believe that you can attend further education at any age?</p> <p>NB: Further education means, sixth form, college and university (including online learning)</p>	Yes/No	
a. If 'no', please provide some further information.	Yes/No	

4.2. Case study analysis and results

I choose the set of questions to include in the analysis to try and promote unbiased answers and not guide the participants in any direction.

I also wanted to gain results based on indirect answers, which would hopefully provide non-contaminated results, rather than outrightly asking the individuals questions such as 'do you think your school motivated you?'

The questions for this analysis were devised to also find out how the school regime has differed throughout the years, the differences in the countries, the curriculum (though no specific parts), and whether those who had negative experiences in school chose to continue on to further education.

There were many avenues this questionnaire could take, but also there were several challenges, namely some individuals did not want to declare too much because their education was personal. Others did not want to declare the years in which they went to school as it would reveal their age, and there is the likelihood that some individuals wanted to deny the honest version of their childhood education.

Over 20 people were approached and 11 people filled in the questionnaire.

4.2.1. Results Set 1 - Enjoyment of school

There were 3 individuals who did not enjoy primary AND secondary school.

Out of the 3 individuals, 2 went into further education and one went straight into work.

Why they didn't enjoy school is not known, but the 2 individuals who did not enjoy primary and secondary school, but went into further independent education have neurological disorders (e.g., autism, dyslexia and so on).

All of the individuals that answered in this section are, or have, studied either for career or personal reasons.

There were 5 individuals who did not enjoy secondary school and 3 out of 5 went into work rather than carry on at school.

4.2.2. Results Set 2 - Negatively challenged and enjoyment

There were 5 individuals who said that they were negatively challenged during primary school. None enjoyed secondary school, but 2 out of 5 enjoyed primary school despite being negatively challenged.

4.2.3. Results Set 3 - Negative challenge and motivation

Focusing on positive or negative challenges, this can be the work itself. If someone is positively challenged their minds are being tested in a positive way which promotes their learning, motivation and often they will then want to do more.

Negatively challenged, can mean too much work which is too difficult, and/or work that is not stimulating enough, which could then leave an individual bored, exhausted and unmotivated.

5 individuals said they were negatively challenged, with 3 indicating that their primary education setting did not motivate them and 4 out of 5 saying that they did not enjoy primary school.

The 3 individuals that were unmotivated in primary school stated that they were motivated to learn once they had left mandatory education.

It is no surprise looking at the alternative results that everyone who was positively challenged enjoyed their primary education setting.

There were 2 individuals who stated that they were not motivated by their primary school setting, but they still enjoyed primary school.

1 individual did not receive any motivation but still went onto further education as they were influenced by an outside source.

4.2.4. Results Set 4 - Motivation

4 individuals stated that their motivation happened when they left mandatory education.

3 out of those 4 individuals stated that they were influenced by sources outside of the primary education setting to go into further education.

The remaining individual that wasn't influenced by outside sources went into work and did not carry on to further education as they did not enjoy their mandatory primary and secondary education. This person also studies for career development now, not for personal reasons, but does think that any age group can attend further education if they choose.

6 individuals were motivated by their primary education setting, 5 went on to further education, and the one that didn't, went into a work scheme. Given the time period this route was the socially acceptable one to take.

4.3. Case study overall results

The full table of results is set out on the following pages.

The country of education was not a factor, as it made no difference to the results.

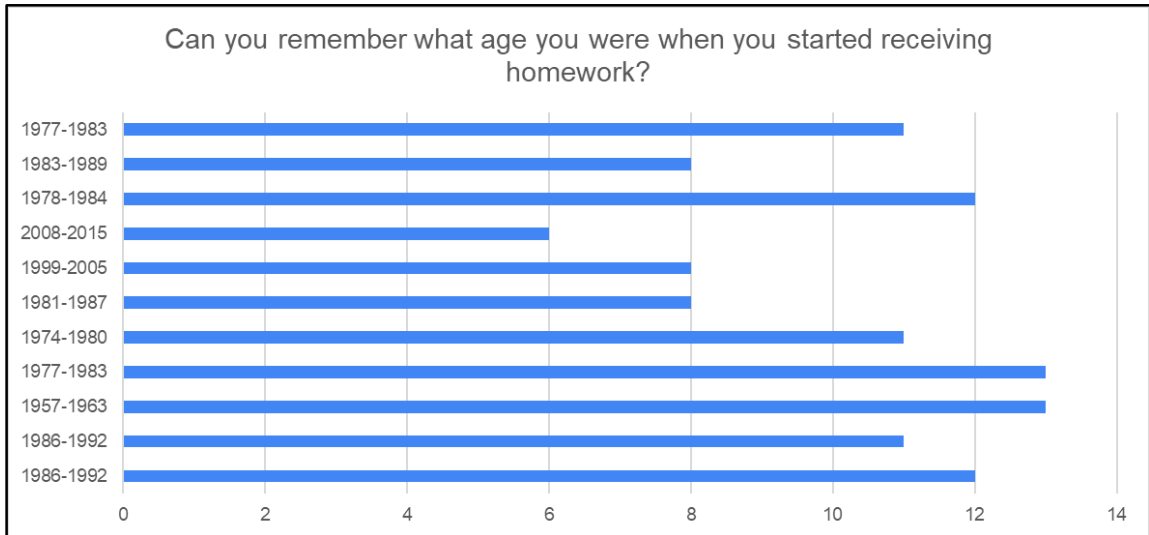
Many could not remember all of the subjects they learnt, and this was not dependent on age as some of the younger participants also could not recall.

Everyone who was positively challenged in school also enjoyed their educational setting. Those that did not enjoy their schools, and were negatively challenged either went into work or found their motivation to learn after they left school.

2 individuals who did not enjoy primary AND secondary school, but went into further independent education have neurological disorders, which continues the debate about whether those with special needs are gaining adequate care in their schools.

I was also interested to know about homework and whether having too much homework at a young age was a demotivator. As the years have progressed, the age a student receives homework keeps getting younger. I wanted to measure this against enjoyment and motivation.

The below chart shows the timeline the individuals went to primary school and how old they were when they started receiving homework.



Looking at the results in the table below, the individuals who received homework younger enjoyed school, whereas if it was left to the later ages of 11 and upwards, the view was mixed and negative regarding the enjoyment of school.

However, the results also show us that it doesn't matter how old the individual was when they started receiving homework compared to their motivation. Motivation was related to a different driver, and not the age they began receiving homework.

4.3.1. Was an answer found?

I believe so. The question of this thesis may not have been fully answered through this analysis, but answers of value to this thesis have still been obtained nonetheless.

In the majority of cases, whether the participants enjoyed primary school or not, when the primary school had not motivated learning, an outside influence did. None of the participants were home-schooled, so they attended a classroom setting outside of the home, which may have differed depending on the year or country they attended education. Additionally:

- 8 out of 11 did enjoy primary school;
- 6 out of 11 reported positive challenges; and
- 7 out of 11 went into further education.

Out of the individuals that enjoyed primary school, even though over half claim they were not motivated by school, again an outside influence appeared to have counteracted this, and they all went onto further education.

The combination of guidance and support both in and out of school, has proven to be relevant from the results, and I believe it is also an important finding.

For those that were not influenced outside of school, one participant went into work and this person did not enjoy primary education. The other person had positive experiences, was motivated by their education setting and also enjoyed it, so it is probable to believe that they did not need any influence to progress onto further education.

4.3.2. Full set of answers/results

Questionnaire questions	KF	JR	DR	SC	BO	SR	DW	MI	TK	ED	JA
When did you attend primary education? (YYYY-YYYY)	1986-1992	1986-1992	1957-1963	1977-1983	1974-1980	1981-1987	1999-2005	2008-2015	1978-1984	1983-1989	1977-1983
Did your primary education mainly take place in the UK?	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
If no, what country did your primary education mainly take place in?	UK	UK	UK	UK	UK	South Africa - Cape Town	Hong Kong	UK	UK	UK	UK
Did you enjoy primary education? (Y/N)	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Did you find the curriculum or the school/education setting boring?	Yes	Yes	Yes			Both - parrot fashion syllabus	Education boring	No	No	No	No
Can you recall the topics you learned in your primary education setting?	Maths, English, history	No	Maths, English, Science	Maths, Geography	Maths, English and PE	English, Afrikaans, Maths, History, Geography, Biology, Science	Mandarin, Sex Ed, Science	Literacy, Mathes,	Mainly remember	No	No
Were you educationally challenged during primary your primary years?	Negatively	Negatively	Negatively	Negatively	Positively	Negatively	Positively	Positively	Positively	Positively	Positively
Can you remember what age you were when you started receiving homework?	12	11	13	13	11	8	8	6	12	8	11
Did you like your educators?	Yes	Yes	No	Not all of them	Yes	Yes	Yes	Yes	Yes	Yes	
Were you motivated to learn at your primary educational setting (e.g. school)?	No	Yes	Yes	No	No	No - counter productive ways of teaching	No	Yes	Yes	Yes	Yes
If 'no', did your motivation to further educate happen when you left mandatory education?	Yes	No	No	Yes	Yes - father	Yes	No	NA			
If 'yes', did you go on to further education (i.e. sixth form, college or university)?	Yes	Yes	No	No	Yes	Yes		Yes	Yes - no influence from primary school	Yes	Yes
Did you continue on to further education after secondary education? (ie sixth form, college or university)	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
If no, did you go straight into work?		Yes	Yes	Yes		No		Yes			Yes
Did you enjoy secondary and/or further education?	No	No	No	No		No	Both	Both	Yes secondary	Both	Both
Were you influenced by sources/individuals outside of your primary education setting (eg school), to continue on to further education?	Yes	Yes	Yes	No	Yes - family	Yes	Yes	Yes	Yes	No	Yes
What type of work do you do?	Technology	Legal	Banking	Technology	Technology	Technology, Legal, Education	Technology	Technology	Administration	Administration	Technology
Has this always been your area of work?	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No
If no, what other areas have you worked in?	Legal	Immigration	Company Secretary	Legal	No	NA		Supporter services		Clerical	Administration, secretarial, dance
Do you study now?	Yes	Yes	No	Yes		Yes	No	Yes	Yes	Yes	No
If yes, do you study for personal development, career development or hobby.	Career, hobby	Career		Career		Personal / Hobby		Personal, career and hobby	Hobby	Personal, hobby and career	
Do you believe that you can attend further education at any age?	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
If 'no', please provide some further information											
Other comments		Changed schools during primary setting	Changed schools during primary setting			Education, career change becomes harder with age					

SECTION D

5. Alternative case studies and further research - Experiences that create lasting effects

This thesis so far has included information on human development, how humans learn from an early age, how humans are taught in classrooms and other educational settings, and how behaviour, mindset and motivation play a pivotal role in the learning process.

This section provides further case studies and concentrates on the long-term effects of childhood experiences both good and bad, received in the learning environment. As mentioned previously, the experiences can be subjective and it is not always clear where responsibility lies: is it on the student, is it on the teacher, is it both or is it neither?

For example, if we look at a learning need, in the most basic form, a good learning experience is if the teacher has responded to the need. A bad learning experience is if they haven't responded to the need. If the need has not been responded to, then this would warrant further investigation.

There could be other reasons why the learning process did not work, such as:

- Is the child interested in learning?
- Did the teacher leave them behind?
- Did the student want to participate, and/or did the teacher listen and allow them to participate?
- Was there any time allotted for questions?
- Was the course content following a logical sequence or was it haphazard or chaotic?
- Were there clear explanations as to what was expected?
- Was it clear and concise or was there too much information?

School has an exceptionally large effect on us and allows us to acquire and develop many types of skills, from cognitive, social to problem solving and fostering key personality traits. Education can increase 'learned effectiveness,' including cognitive ability, self-control, and problem solving, but it can also impact confidence, readiness and progress in general.

Warwick University published [a piece](#) about how education affects mental health. It appears that high levels of education seem, later in life, to contribute to lower levels of mental stress. In other words, psychological health is improved by education. This may be because educated people have more choices, they have greater control over their lives and better security. However, this theory is not limited to those who are naturally competitive and have a need for completion.

As one gets older, more 'life demands' happen such as accommodation commitments, maybe spouses or relationships, and children. While individuals who are more educated appear to have more choices which is also an experience affecting us into our adult years, perhaps it is more to do with the circles we choose and the opportunities we take, rather than how educated we are.

Problems will happen at every avenue in life; however, it is the unreasonable problems that perhaps can be avoided which can create lasting effects.

While lasting experiences can occur in any situation, it is clear by now that as school is a large part of our lives growing up (and can be involved in our adulthood), it is no surprise that this is where we can obtain long term experiences from. School and teachers are influential at a point in a child's life that is also influential or perhaps vulnerable.

5.1. Long term effects

Education in general can be a contention and confidence questioning topic, we don't pass a test, this can stay with us, but just how long-term are the effects of the experiences we receive as children in school?

5.2. Effects in school - internal experiences

There are many areas that can cause issues in education, such as demographics. It is difficult to compare like for like with so many children from diverse backgrounds.

The YMCA published an [article](#) about negative educational experiences that cause lasting damage to wellbeing. It states that if an individual has a bad time at school because they didn't fit in, they were bullied, or mainstream academia wasn't right for them, it could leave the person feeling 30% less happy. If this is true, that is quite a significant amount.

Children will experience stress and anxiety at typical things such as school changes, change of year group, a friend leaving school and going to another, biological changes, frustration of not being able to do something the other children can do, and the influence of outside sources, as well as influential figures setting examples.

In [Psychology Today](#), an article was published regarding the effects of positive childhood experiences on adult mental health. While this strays from the topic slightly, there are some linked topics which validate child experiences.

They list the following as being a good basis to encourage positive experiences in childhood:

- Having at least one safe caregiver (not all caregivers may be safe, but having at least one is associated with better outcomes).
- Having one good friend.
- Having comforting beliefs.
- Enjoying school.
- Having one caring teacher.
- Having good neighbours.
- Having an adult who is not a parent or caregiver who can provide support.
- Having opportunities to have fun.

- Having a positive self-concept.
- Having a home routine that is predictable.

Along the same lines the [CDC published an article](#) stating that preventing ACEs (Adverse Childhood Experiences) can help children and adults thrive and potentially:

- Lower risk for conditions like depression, asthma, cancer, and diabetes in adulthood.
- Reduce risky behaviours like smoking and heavy drinking.
- Improve education and employment potential.
- Stop ACEs from being passed from one generation to the next.

BMC Public Health also published [an analysis](#) regarding the potential effects of adverse childhood experiences on school engagement in youth. This study sought to identify the relative importance of various ACEs in predicting school engagement.

ACEs can have severe negative impacts on childhood and adult health worsened by school engagement and educational outcomes. The data was analysed from the National Survey of Children's Health for school-aged children (ages 6-17) between 2018 and 2019. The primary outcome was school engagement, measured through three variables:

1. repeating a grade;
2. doing required homework; and
3. caring about doing well in school.

The researchers conducted three logistic regression models with dominance analyses to identify the relative importance of ACE variables in predicting school engagement outcomes.

In unadjusted and adjusted dominance analyses. Parental incarceration was the most important ACE in predicting repeating a grade, and living in a household in which it was hard to cover basics like food or housing was the most important ACE in predicting doing required homework and caring about doing well in school.

The study also pointed towards the large influence of out-of-school factors on school engagement. Parental incarceration and economic hardship, the most important predictors of engagement, are issues that can be addressed and mitigated through policy interventions. With limited funds available for education and public health interventions, it is crucial that these two ACEs be priority considerations when developing policy.

When researching this part of the topic, there was a lot of material regarding ACEs and childhood wellbeing, but there was not much regarding the experiences received in an educational setting.

However, a paper was submitted to [HAL Science](#) which is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, a paper was accepted in 2019 which does cover how an education setting can be used to promote good mental health.

It states that emotional well-being is particularly important in teenagers and young adults. Childhood and adolescence provide opportunities to develop the foundations for mental health, and school is an important means that can enable it. It seems important to examine the evolution and differences in positive and negative emotions and experiences in adolescents and young adults in educational settings, which have received less interest in the literature. The investigation for this paper was carried out at a French school however when it comes to experiences, emotions and how to respond it doesn't really matter what country the child comes from.

Reuters also published an [article](#) about positive childhood experiences tied to better adult mental health. They detail information from a study that suggests children who have more supportive experiences with family, friends, and people in their school and community may be less likely to have psychological or relationship troubles in adulthood.

The study involved researchers who surveyed 6,118 adults about how often in childhood they felt able to talk to family and friends about feelings; felt their family stood by them during difficult times; enjoyed participating in community traditions; felt a sense of belonging in high school; felt supported by friends; had at least two non-parent adults who took an interest in them; and felt safe and protected by an adult in their home.

5.3. Wellbeing and educational outcomes

The [UK Department of Education](#) carried out research to examine how dimensions of children's wellbeing (at ages 7 to 13) are associated with concurrent and later educational outcomes (at ages 11 to 16).

Emotional, Social and behaviour wellbeing were the comparative topics.

The review focuses on the presence of children's internalising emotions and mental disorders, such as their moods, fears and anxieties. The later analysis also focuses on aspects of children's emotional wellbeing and considers the diversity and inclusivity of the children.

For emotional wellbeing the research states that the Office for National Statistics (ONS, 2005) describes the prevalence of mental disorders of children in 2004, and provides profiles of children in each of the main categories, along with sub-groups.

They surveyed a population consisting of children and young people aged 5-16, living in private households in the UK. The ONS found that 1 in 10 children and young people have an emotional mental disorder which includes separation anxiety, specific phobias and generalised anxiety disorder and depression. According to the ONS (2005), children and young people with severe mental health and wellbeing issues are more likely to be excluded, be truants or to become disengaged from education.

Among children with emotional disorders, 44% were behind in their overall intellectual development (compared with 24% for children with no emotional disorder), and 35% had officially recognised special educational needs (compared with 16% for children with no emotional disorder).

In the [TellUs4 Survey](#) of children in school years 6, 8 and 10 (Chamberlain, George, Golden, Walker, & Benton, 2010), children who were disabled were less likely to report feeling happy compared to children without disabilities.

Emotional mental disorders have been found to be associated with worse educational outcomes. The association between emotional wellbeing and later academic achievement in adolescence appears to be relatively weak compared to effects from other dimensions of wellbeing.

Emotional symptoms in adolescence were found to have a negative association with later academic achievement for boys, but not for girls. However, this association was not evident when controlling pre-adolescent achievement and/or emotional wellbeing.

There is little information about whether the relationship between emotional wellbeing and educational outcomes varies across key family and child characteristics as well as different ages of the child (i.e., primary versus secondary school).

5.4. Behaviour wellbeing

‘For studies which have focused on children’s involvement in problem and aggressive behaviours, there are mixed findings depending on the ages of children examined. Using [LSYPE, Goodman and Gregg \(2010\)](#) as an example, it found that engagement in antisocial behaviours was a significant factor linking family’s disadvantaged economic status to lower school achievement in the teenage years. However, a meta-analysis of six data sets, two of which are longitudinal UK data sets, found no effect of a child’s early problem behaviour on their school entry-level achievement.

Together these findings suggest that children’s achievement and problem behaviours may develop in tandem during the early primary school years, and therefore may have a greater association as children proceed through school (Trzesniewski et al., 2006).

For studies which have focused on attention difficulties, evidence suggests attention problems consistently predict lower achievement test scores and lower grades in primary school (Duncan et al., 2007).

Attention deficit hyperactivity disorder (ADHD) is estimated to affect between 3% and 9% of school-age children and young people in the UK. It is typically characterised by symptoms such as ‘failure to give close attention to schoolwork’, an ‘inability to listen when spoken to directly’ or ‘an inability to follow through on instructions’ and a ‘tendency to leave a classroom without permission’. It is little surprise to most that ADHD along with other neurological disorders are often mistaken as a behavioural issue. When this happens, then the result is likely to be low level achievement, and an impact on the general wellbeing of the child because they are not being acknowledged.

In summary, children’s engagement in problem behaviours appears to have a greater negative association with their academic achievement as they proceed through school.

Measures of children’s attention problems have been shown consistently to predict lower academic achievement.

Children’s attention problems seem to be a stronger predictor of lower academic achievement, compared to having aggressive and problem behaviours, especially in younger samples of children.

Further evidence is needed, to assess whether differences exist for the association between engagement in problem behaviours and academic achievement.

5.5. Social wellbeing

Children's experiences at school with their friends and classmates play an important role in their academic achievement. The experience of being bullied at school has been found to be associated with lower achievement in children, whereas positive peer relationships foster higher achievement. Keep in mind that bullying does not necessarily mean physical abuse, a child could be bossing another about for example.

Gutman and Brown (2008) explored how children's peer clusters were associated with their later wellbeing and academic achievement using the longitudinal ALSPAC data. Their findings suggest that belonging to a peer cluster characterised by either bullying and/or victimisation was significantly related to worse levels of wellbeing, behaviour and later academic achievement compared to a child being in a positive friendship cluster.

Children with many positive friendships, on the other hand, had the highest levels of wellbeing and achievement compared to the other groups.

In another study using the same ALSPAC data, Gutman and Feinstein (2008) found that children with lower Key Stage 1 scores were more likely to be victims of bullying, and have friends who were involved in antisocial activities. Together, these findings suggest that social relationships with peers are associated with academic achievement in primary school.

However, these associations do not take into account previous achievements. In the teenage years, research has also found that being a victim of bullying takes its toll on subsequent academic achievement and learning.

Using LSYPE, Meschi and Vignoles (2010) found that pupils who were bullied at age 14 had significantly lower GCSE scores at age 16. Pupils who experienced bullying at age 14 were also much more likely to experience bullying at age 16. Therefore, early negative experiences, such as being bullied, indicate that the young person may be at risk of having later negative outcomes at age 16. Also using the LSYPE data, Foreman-Peck (2007) found similar results examining the association between parent-reported bullying and students' academic progress from Key Stage 2 to Key Stage 3 (ages 11 to 14). There is little information, however, about whether having positive friendships is associated with academic progression during secondary school.

Studies document differences in the incidence of victimisation according to gender and socioeconomic status. Recent studies using ALSPAC, for example, indicate that friendships tend to be highly gendered. Girls are more likely to have close friendships than boys (Gutman and Feinstein, 2008; Gutman and Brown, 2008). In the TellUs4 Survey of children in school years 6, 8 and 10 (Chamberlain et al., 2010), children with disabilities were less likely to report having friends and more likely to report being bullied recently. Boys, on the other hand, are more likely to be bullies and bully/victims than girls, whereas victims are equally likely among both genders.

Some findings also indicate that victims, bullies and bully/victims may be more frequent among lower socio-economic groups (Gutman & Brown, 2008). Nevertheless, research has yet to examine whether the association between these aspects of social wellbeing and academic achievement varies across these key characteristics.

In summary, children in primary school who are victims of bullying tend to have lower achievement than their classmates. However, these associations have not taken into account previous academic attainment.

Being bullied in secondary school has been associated with lower academic achievement including Key Stage 3 and GCSE scores, even taking into account previous attainment.

It remains unclear whether having positive friendships is associated with greater academic progression in primary and secondary school. Although gender and socioeconomic differences in children's relationships with their peers have been documented in previous studies, more research is required to understand whether the association between social wellbeing and academic achievement varies across these key characteristics.

5.6. School wellbeing

For school wellbeing, the research mentioned above, as well as the later analyses, focuses on two aspects of school wellbeing, namely, enjoyment of school (e.g., whether students say they like school), and engagement in school (e.g., whether students say they are stimulated by school work).

Child measures of school wellbeing have been found to be associated with academic progression in secondary school, but not in primary school.

There is little understanding of the link between school enjoyment and engagement and how each contributes to academic progression during primary and secondary school.

There is little information regarding whether the association between children's school wellbeing and their achievement varies according to key demographic and other characteristics.

Being bullied at age 7 is a significant predictor of lower school engagement from ages 7 to 10. However, better emotional wellbeing, less troublesome behaviour, fewer activity and attention problems, and more positive friendships at age 10 are associated with greater school engagement from 10 to 13 years, highlighting the significant role of wellbeing in children's engagement as they enter secondary school.

Furthermore, more school enjoyment at ages 7 and 10 is associated with greater school engagement from ages 7 to 10 and from ages 10 to 13, respectively, indicating that children who enjoy school are more likely to be motivated and engaged in their school work at a later point in time.

SEND children, those eligible for free meals (which bring fewer social opportunities during breaks), and boys are less engaged in school, whereas children whose first language is English are more engaged from ages 7 to 10. None of these demographic factors is significant from ages 10 to 13, however.

The interesting pattern is that age is crucial in school. As children get older, they perhaps do not worry any less, but their priorities change.

SECTION E

6. Conclusions and final points

Never discourage anyone who continually makes progress, no matter how slow. – **Plato**. From the dialogue titled **Sophist**. The [Fowler translation](#) gives a variation.

The primary school years are the first steps to learning in an educational setting, which brings with it new rules and routines and demands adaptability. The brain begins to train in strategic and critical thinking which gradually leads to the making of independent choices. Prior to this, learning for a child was more instinctive and part of natural development.

Primary school is where we obtain our first 'real world' experiences that we can put into action. Whether these experiences are good or bad, the outcome can shape our outlook for most, and in some cases, all other experiences that happen in the future.

This time period is crucial to attempt to answer whether primary educational environments and experiences shape our motivation to further educate ourselves as adults. In other words, does a child's experience at school affect their learning for life? Furthermore, if that is the case, and the learning process is unsuccessful (for whatever reason), is it the student who is responsible, the teacher, is it a combination of both or is it neither?

The childhood experiences that shape the lives of adults, may not be exclusive to school experiences, as outside sources could be responsible.

There is so much a child needs to process in the educational setting, that it is little wonder many struggle.

There is an abundance of legislation, rules and policies in place to try and mitigate any issues before they turn into something long-term. Not only do teachers and students have a code of conduct but so do parents/caregivers. Policies, curriculums and general school rules are typically transparent to the parents/caregivers, but are also left to interpretation.

Evidence has shown that the more education a child receives the more habitable it becomes and the more prospects will be gained in the future, but this makes little sense if the child is overwhelmed. Making a child do copious amounts of homework at a young age and taking them away from their play (which has also been proven to nurture child development), surely encourages a bad outlook on education and perhaps even the workplace?

6.1. Was the question of this thesis answered?

In short, yes it was and further details are given below, but with the caveat of further investigation is needed to be truly conclusive.

One point that has been established is that for a student to be truly successful, there needs to be a united front. Dedication needs to be motivated in and from the student, teachers need to be aware of any issues from their interactions with the pupils, as well as being kept informed by other parties, and support needs to be given from the child's home environment. Therefore, feedback and communication between all involved is essential.

If the school and home put the child's best interests at the forefront of any decision making (especially if the child is not yet able to make their own decisions), then the best

outcome is likely to be reached. At the same time, as soon as the child can be involved in decision making then they should be as parents/caregivers and teachers do not always make the correct decisions even with the best intentions.

Taking into consideration the research conducted by [D L Vandell, J Belskey et al](#), and also an article in the Journal of Child Development, in June 2010, where the most important findings stated that the effects of early childcare quality on cognitive-academic achievement and early child care hours on problem behaviours were evident in mid-adolescence, more than a decade after the children had transitioned from child care to mandatory education. It showed the importance of early childhood care and its impact on the development of the child, but the study did not go into whether the impacts that were revealed in adolescence carried on to adulthood.

6.2. Conclusive points of study

The areas of focus in this thesis can exhaustively branch off into other nuances, therefore in order to fully attempt to answer the main question. It was important to assess how we as humans learn, how teachers are expected to teach, and to discover if the experiences we receive in school are key contributors to motivate further learning opportunities as students grow older.

The key age range of primary education differs slightly depending on the country, but the typical primary school age range is 5 to 11 years. Most individuals will move on to a secondary school setting once they are around the age of 11 years.

In this study the terms 'learning' and 'education' were defined differently. Learning is referred to as something more instinctive and something humans can naturally do each day without conscious thought, while education is referred to as being teacher or trainer led in a structured routine/ curriculum and environment.

I have tried to include references from around the world to give a varied analysis.

6.3. Human development - how humans learn

This area covered the different ways that humans develop both physically and mentally. This was included as an understanding of the process, in order to determine whether physical and biological changes influence, and sometimes interfere, with our ability to learn.

Jean Piaget summarised the child development process by a set of distinct stages from birth onwards. It does not matter whether a child's development is behind or ahead of their peers, they all go through the same stages.

By stages, Piaget meant a sequence of thinking patterns with four key features:

1. The stages in child development always happen in the same order.
2. No stage is ever skipped.
3. Each stage is a significant transformation of the stage before it.
4. Each later stage incorporates the earlier stages into itself.

It is in our development to learn new things either instinctively, by our surroundings or by another being. This is the same for most species on the planet. Therefore, we know we can learn if interruptions in the process occur, or when the process is not instinctive, and/or whether there is a lack of guidance. I think it is important that children are given this knowledge as they learn, so they know they are not expected to know everything, and some things they will instinctively learn, other topics will be naturally learned/ they will have an aptitude for, and other topics will take longer to learn.

6.4. How humans are taught, educated or trained

Even if a person has a neurological difference, for example, it does not affect their ability to learn something, but the way they learn may be different, or may need to be adjusted.

Pedagogy is about a connection or relationship between a teacher and their pupils.

For there to be academic success, this connection is crucial as it allows the teacher to communicate and cater the teaching for the students, using multiple processes to cater for all individuals, and at the same time it allows the teacher to identify any gaps and issues in learning, provide more motivation if needed and because there is a relationship, the students are more likely to have the confidence to ask for help, or ask questions in general if more information or clarity is needed.

In order for teachers to be successful in outstanding pedagogy, they need to ensure they understand the research available and understand it, as it is vast, wide and time consuming.

In order for teachers to be successful in outstanding pedagogy, they need to ensure they understand and digest the research available, as it is vast, wide and time consuming.

In primary school it is expected that more responsibility will be on the teacher to ensure the educational setting is wholesome and where possible happy. But as students get older, the redress of balance of responsibility in teaching and one's own learning is necessary.

Educational psychology presented itself regularly during this thesis, as the topic involves the brain, memory, cognitive development, mindset, awareness, perception, behaviour and so on. The three elements of this branch of applied psychology are:

- Education;
- Psychology; and
- Neuroscience.

Therefore, while the main topic orbited education, due to the nature of the question being asked, the modern approach of educational psychology was also focused on.

In order for the learning experience to be successful, children of any age need to be given a welcoming and motivating environment.

This can of course be difficult as an average teacher can be responsible for around 30 students in their class (which also include those with special needs). Teaching assistants

are often in place to assist but there is still a lot of pressure on the main teacher who is coordinating the environment.

6.5. Other attributes that affect the learning process

As mentioned above, we know we are learning machines because it is something we do naturally, however there are times when we can't. Typically, this happens when 'we get into our own heads', which could be due to a lack of interest in the topic. Our memories are always clearer when we have an interest in the topic we are learning, but a lack of aptitude can also affect our confidence.

There are many other attributes that can affect how a child integrates in their educational setting. These can include, memory, motivation, happiness, influences from outside sources, environment, self-catering and mindset and general wellbeing.

Many of these paths lead to motivation being the key to learning. Learning after all is difficult without it but in younger pupils this again is where the teacher needs to take the lead and guide until the student finds a way of developing it themselves.

If the school provides positive experiences and a positive learning attitude, then the child is likely to become motivated to learn. Even in difficult times when a student struggles with finding the answers to their work, positive experiences can help develop confident and creative thinking to troubleshoot the problem.

Sociology and a child's social relationships with their peers also has an impact on their day-to-day activities. For example, a rudimentary method such as school lunches, if a child has a meal provided to them by the school because they are of the age where they can take advantage of the government run free school meals, the parents/caregivers will be more likely to comply, as it reduces the household food budget. However, for the child it means queuing up for the meal, and missing out on social interactions with their friends which was part of the research conducted by the UK Department of Education, and detailed that the effects were on social wellbeing which is also crucial to the learning process.

When the negative experiences are due to other children's behaviour, [LSYPE, Meschi and Vignoles \(2010\)](#) found that pupils who were bullied at age 14 had significantly lower GCSE scores at age 16. Pupils who experienced bullying at age 14 were also much more likely to experience bullying at age 16. Therefore, early negative experiences, such as being bullied, indicate that the young person may be at risk of having later negative outcomes.

Also using the LSYPE data, Foreman-Peck and Foreman-Peck (2007) found similar results examining the association between parent-reported bullying and students' academic progress from Key Stage 2 to Key Stage 3 (ages 11 to 14). There is little information, however, about whether having positive friendships is associated with academic progression during secondary school.

Following the pandemic many parents/caregivers did not want to send their children back to school and as a result present year data on pupil attendance in the UK is showing that 22.3% of pupils are persistently absent.

There are many reasons behind student absence, it can be due to economical, cost of living, lack of resources to get the child to school, special needs and mental health issues to name a few. The undeniable result with persistent absenteeism is that the child gets left behind.

6.6. Case study analysis

I devised an analysis to identify patterns and links between education and life/career choices, where the participants answered a series of questions regarding their experiences in mandatory education, and what they felt their influences were.

The style of the questions also tried to discover if there were any other influences and/or experiences that the participants were unaware of.

The case study was not successful in determining an answer to the thesis question as no one could provide distinct data and this was due to not being able to remember as far back as school in some cases. This is perhaps a good thing as that means that if any negative experiences had happened, they had also forgotten about these too.

Some of the participants answered the questions in either a conservative or defensive manner and some did not fill in the whole questionnaire which left gaps.

The questionnaire itself I think could have been adapted further so the participants provided clearer results, perhaps more 'straight to the point' questions were needed as ambiguity could have also played a part in the results. However, the analysis did show that even those who openly had negative experiences still went on to have successful careers.

If more participants had filled in the questionnaire, it is hard to determine whether the results would have stayed the same, or average plateau would have remained.

Though our memories are not complete snapshots of any event, certain areas that have captured our attention will stay with us for long periods of time. However, if we have a bad experience, that typically stays with us for longer, but as mentioned above, this doesn't mean that these experiences can't be resolved.

6.7. Final points

'Well, I've got a great team here...and a solid support system at home.' **Cheaper by the Dozen film, 2003.**

When I was in secondary school, I did not get along with the new PE (physical education) teacher. Nothing started the tension; she and I just did not get along from the onset. Our personalities collided and I now know that was because she was new to the profession and anxious, eager to prove herself and keep discipline, and I was probably an awkward teenager with a 'know it all' attitude.

We did not have a good first year, however, two years later she had grown as a teacher, and I had learned to express myself in a more mature manner. The unexpected and pleasant result was that we were able to eventually work together. We worked exceptionally well in fact, to the extent we won a badminton tournament together.

This is an experience I will always remember because it originally started off as negative, but with some growth, communication and consideration from both sides, it turned out to be a positive experience.

I was an older child at the time this happened, but it is much more difficult with primary school children. They would not necessarily have the communication skills or patience to engage with the opportunities presented to them to turn a negative into a positive, it could be a case where it would have been far more reliant on the reaction of the teacher.

As we have discovered on this journey, everyone has the capability to learn, it is not a question of intelligence, it is in our development to learn, but the learning process can be affected depending on who is involved, and the role they play (e.g., parents/caregivers), and this includes the role we play in our own learning.

Environment is crucial to productivity. Many suffered during the pandemic because they could not work from home, this is for both children and adults.

The public sector industries can also be a damning place. Teachers and emergency services who are trying to do their jobs now have to do it under the scrutiny of the general public, trial by social media and governing authorities setting unreasonable targets. Teachers have a heavy workload which calls into question whether they have enough time during the day to allot to children who need it. Do they have the time to provide much needed answers to questions? This has been raised in several research papers used in this thesis.

As mentioned above, to be truly successful, regardless of experiences from inside or outside of school, there needs to be a support system in place. There also needs to be reassurances that if something does not happen as intended, then there is normally a remedy.

Bad experiences will always happen, but with a support system in place, in theory there are enough people in the chain to ensure that no long-term impacts affect the child's future.

Therefore, it is not our abilities or capabilities that affect our learning, it is the influence of our environment. As we get older, it is also the influence we have on ourselves. The case study proved that it is down to the individual, we as humans are renowned for making things harder than what they need to be, it is in our biological nature.

The learning/teaching process is one of collaboration. It is very rare for a person to achieve a learning goal alone and as we get older; it is good to maintain that support system as our commitments change in adulthood.

Experiences generally are measured on a case-by-case basis, but if the learning process is not successful then it cannot be down to the responsibility of one individual.

Motivation affects our future choices and as we get older the responsibility for this again is not down to just one individual. Therefore, could the real question be do we allow ourselves to be governed by negative experiences, or is a lack of motivation and/or determination to change be down to unreasonable tasks we set ourselves. Time, effort and energy can often be a deterrent for many of us so we don't travel down the

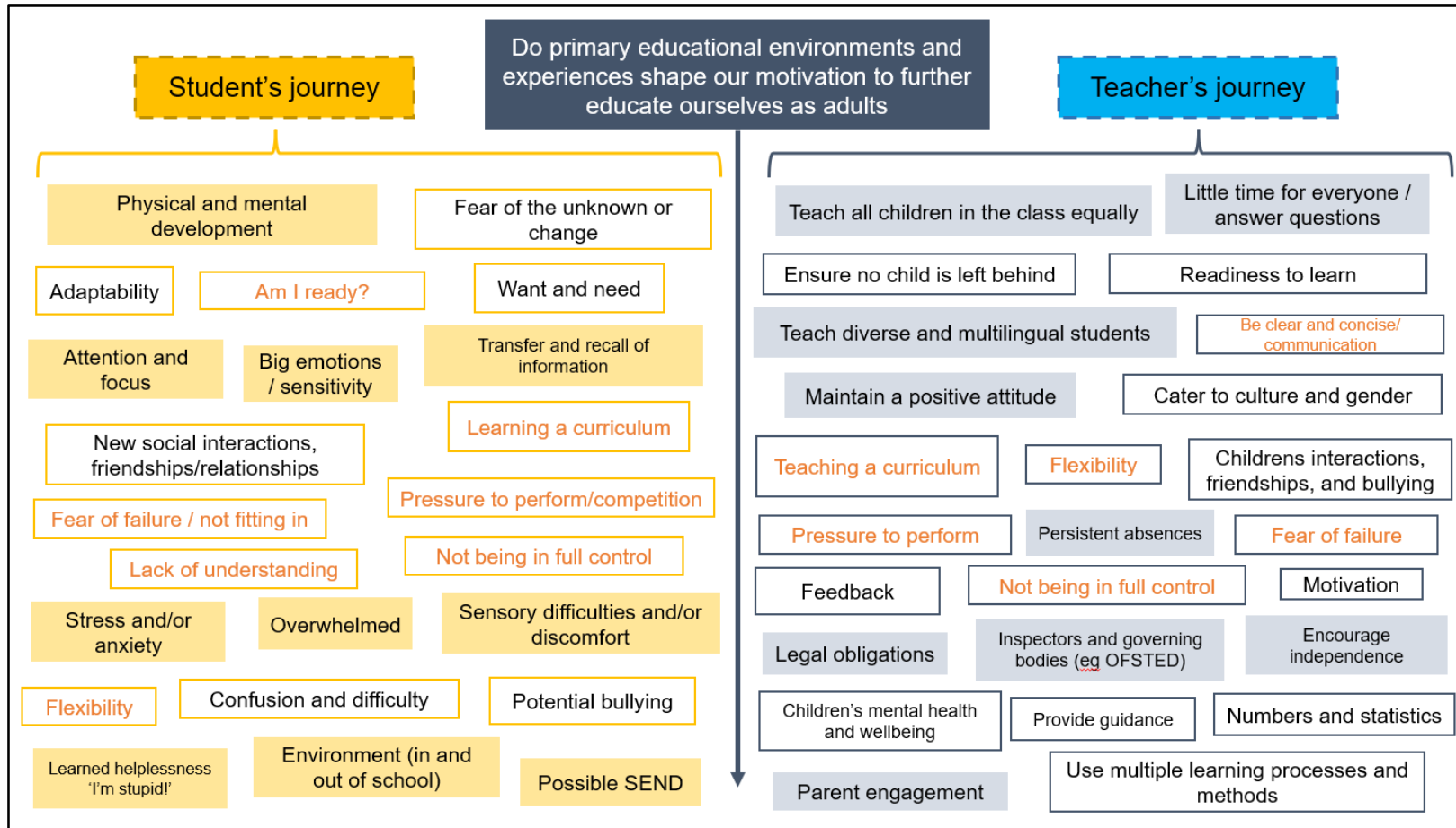
exhausting road of turning a negative situation around but that does not mean it is impossible.

Do primary educational environments and experiences shape our motivation to further educate ourselves as adults? Yes, they can, but they are not exhaustively responsible, the individual has to take responsibility as well.

APPENDIX

The journey of the student and teacher

Further information regarding the map below can be given during the defence part of this doctorate. Referring back to the concept maps in section 1.3.8, the below gives another map based on the research from this study, which is of the journey the student and the teacher can take, and gives an understanding of the challenges both can face each day.



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