MYP Personal Project -
The Neuroscience of Early Childhood Development
Planning

Introduction

The human brain is an organ that enraptured my being ever since I was old enough to stomach its concept. The complex organ is capable of single-handedly controlling our bodies, it has possession over the gift of our thoughts, memories, emotions, vision, touch and every other procedure within the body. Its architecture comes together through a process that takes place before birth, and progresses into adulthood. It is crucial to grasp the concept that it is the early experiences in life that affect the quality of the brain's construction, which is done by implementing a strong/fragile foundation for one's learning, health and behavior.

When I think about my homeland, my passion reignites - Beirut, Lebanon - the millions of boys and girls who undergo immense trauma due to the country's state of poverty and corruption, and as a result of being exposed to *toxic stress*, "have underdeveloped neural connections in areas of the brain most important for successful learning and behavior in school and the workplace" ("InBrief: The Science of Early Childhood Development"). To think about how this will affect the millions of Lebanese infants/children in the long run, who have seen more than any child should ever have to endure, is something I will never come to terms with. From the August 4 explosion, that left 7,000 wounded, 150 of whom were left with a physical disability, damaged 77,000 apartments, and displaced over 300,000 people; to the fact that more than 80% of the country's people do not have access to health, education, food, water and a basic standard of living, such as housing and electricity.

It is crucial to adopt a multi-perspective approach to effectively address the needs of young children, and to aid in their growth in developmentally appropriate ways. The profundity of neuroscience, and the necessity that early childhood educators possess thorough knowledge is an issue yet to be tackled. By implementing a system by which teachers are taught about aspects of neuroscience that are relevant to students, and early brain development, we can ensure that preschool students are guided by those qualified to support most aspects of their early childhood development, while also highlighting the importance of parental roles and positive parenting which should be taught to guardians, as those who raise other human beings are unable to do successfully without acknowledging and healing one's own trauma.

Learning goal

My learning goal is "to explore the importance of neurodevelopment during the 'Early Childhood Years', and to highlight the damage caused on developing brain architecture, which can lead to lifelong issues in learning, behavior and physical and mental health." After establishing this, I sought out different ways in which I could illustrate the complexity of the idea, and came to the realization that creating a video would provide visual aid in one's understanding. Within the topic, I plan on exploring different subcategories of the broad term, that of computational, cognitive, cultural, linguistic and developmental neuroscience which would lead to my understanding of the different pathways in children's learning. By doing so, I can establish a sense of closure, as my topic inquiries will be answered.

Product

I chose to create a short educational video, to allow the audience to understand the important story being told, as the video will bring awareness to neuroscience of early childhood development, while also being a great resource for information and inspiration, and will hopefully lead to developmental change. To come to conclusion about the contents of the video, I will conduct a survey based research task which will help in gathering/collect knowledge on the matter, which will be helpful in understanding what people already know in the field, and use this to my advantage to construct an informative piece to the best of my abilities.

Global context

My chosen global context, "*scientific and technical innovation*", strongly supports and is associated with my project on a variety of levels. To come to a clear conclusion on the most suitable global context, I used the elimination method by reflecting and understanding the *two* main goals of my project.

"What is it that I strive to achieve, and by doing so, what message do I want to convey to others?" By the end of the personal project experience, I hope to succeed in conveying an accurate image of the correlation between the early childhood years and neuroscience as a whole, and how handling a child with care and patience, in order to address the needs of young children, is extremely important in the creation of one's first building blocks in life, and how that ties back to the structure of the brain. Furthermore, in the growth and pruning procedure, the less complex neural connections are first formed, later followed by the creation of the more complicated brain circuits. ("Brain Architecture") While genes are what determine the formation of neural circuits, they can be reconstructed by repeated use. Serve and return interactions are what design the brain's architecture, specifically that between children and their parents/guardians. For instance, when an infant cries, gestures or is uncomfortable, and an adult responds/handles them appropriately, with care such as eye contact, a hug/smile, words, brain connections are built and nourished in an infant's brain that encourage the development of communication and social skills. And in an unfortunate event that leads to the absence of responsive caregiving/if the responses are inappropriate or unreliable, the brain's architecture will not form as predicted, which could lead to an imbalance in learning and behavior, proving that genes and experiences coincide to construct brain architecture. (Parents)

"What is the impact of my project?" By exploring the sophisticated umbrella term of "The neuroscience of early childhood development" and ensuring to discover each strand of the topic in detail, I work towards impacting my target audience, parents and childhood educators, on a personal level, to reach those who have unresolved trauma, as well as those who do not struggle on a mental scale, to do better, to take care of the future generation, to forever change a child's life and heal their own inner child. By doing so, I successfully meet the criteria to revolve my project around science and technical innovation as the lens I chose is factual, logical, and resides in the science of neuroscience.

Product success criteria

To create my product (a short educational style video) at a high quality/standard, that is educational and intriguing to a wide-spread audience/target market, I will need to exceed expectations in the product success criteria. In order to do so, I will have to prioritize the content of the video (while ensuring to portray the complexity of the topic to the audience in a critical way); as well as focusing on the editing of the piece, to create an emotional, heartfelt ambience, which leads to a more memorable experience.
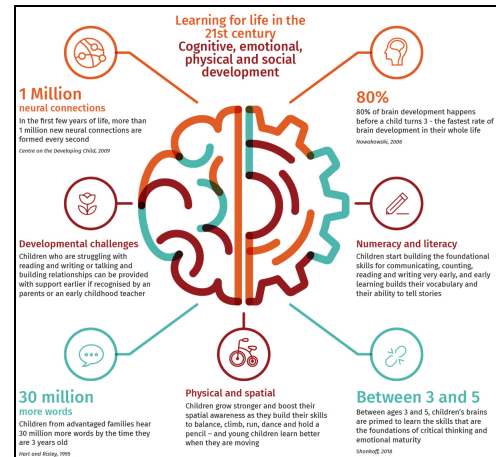
Specification	Meeting Expectations	Exceeding Expectations	Reasoning
The educational video is 5-8 mins long.	The educational video is roughly 5 mins long.	The length of the educational video is over 5 mins (6-10 mins).	This specification should be met according to a survey I took prior (data results shown in page -), in which I asked 20 people who are in

			the category of my target market, their duration preferences, in which they responded that it should not exceed 8 minutes.
The educational video portrays the complex topic in an easy, direct way and the video conveys only relevant topics.	The educational video makes sense and explains the basic points of the neuroscience of early childhood development and I stay on topic when conveying the basics of my topic.	The educational video conveys clear, detailed, and relevant information that gives the audience a full understanding of the complexity of the topic as well as being on topic and I am able to confidently display my knowledge to my audience members.	The significance in this specification is because I have come to realize that neuroscience is a topic that interests me, it is not something all people appeal to, and in order to grasp my target-market's attention, it needs to be heartfelt and easy to comprehend, as well as needing to meet this specification in terms of clarity. If I talk about topics that one may find irrelevant to my topic idea, they are likely to dismiss all of what was previously explained, due to confusion.
The educational video is visually attractive/ appealing.	The educational video is of decent quality and is minimally attractive with some pull factors and a simple theme.	The educational video is of great camera quality and is very visually attractive and grasps the audience's attention with many pull factors, while also portraying the topic through a sophisticated, yet identifiable theme.	After surveying over 20 people, my educational video must be rich in color, images, and videos. The reason that this specification is important, is because if my target market is not drawn to the looks of the video, they might not take my video seriously, or properly open their mind to understanding the concept.
The audience members are satisfied with the educational video and are able to explain takeaways/ concepts from the video.	Most audience members were pleased with the educational video and were able to watch it and successfully explain the basics of the project.	All audience members actively watched the educational video, and were entertained throughout, and showed their interactivity by successfully explaining the complexity of the project, and takeaways	Because I hope to make an impact on educators and parents, this specification should be met to the best of my abilities. In order to educate adults about something as sensitive as children, it must be explained in a convincing

		from the educational video.	manner, while also being backed up by evidence, and examples that hit close to home.

Product rubric

Product goal: To create an educational video, which will allow the audience to understand the importance and seriousness of the topic, as the video will bring awareness to the neuroscience of early childhood development, while also being a great resource for information and action-taking, and will hopefully lead to developmental change.	
Level	Description
0	The student does not reach a decent standard of any of what is described below.
1-2	1. I am able to describe the perimeters of the topic, in a shallow, informal and unconvincing way. 2. I present an educational video with little to no images or videos and am unable to strictly use facts and science when explaining the concept, and frequently state my opinion in the educational video. 3. Throughout the educational video, I am unable to use nonverbal communication cues to build trust, clarity and rapport and the video is not relatable to my audience members, as I was not inclusive to people of all situations, and did not use real-life scenarios. 4. I was not able to properly source my video and give credit to secondary research. 5. The educational video is not edited to a decent level, and the audio and clips recorded are blurry/unfocused or of bad quality.
3-4	1. I am able to describe the perimeters of the topic, in a somewhat convincing and proper way, with some formality. 2. I present an educational video with 2-3 images and videos and am able to use mostly facts and science when explaining the concept but still state my opinion in the educational video. 3. Throughout the educational video, I am partly able to use nonverbal communication cues, however lack consistency and the video is relatable to some audience members, and I was not inclusive to people of all situations, and used some real-life scenarios. 4. I was able to source some of my video and give credit to some of the secondary research conducted. 5. The educational video is edited to an acceptable level, and the audio and clips recorded are blurry/unfocused at times.
5-6	1. I am able to describe and explain the topic, in a competent, formal, and convincing way and effectively use a range of appropriate vocabulary. 2. I present an educational video with 3-4 images and videos and am capable of strictly using facts and science when explaining the concept, and rarely state my opinion in the educational video. 3. Throughout the educational video, I am able to use some appropriate nonverbal communication cues to build trust, clarity and rapport and the video is relatable to the

		majority of my audience members, as I was inclusive to people of different situations, and used real-life scenarios. 4. I was able to source my video and give credit to secondary research. 5. The educational video is edited to a good level, and the audio and clips recorded are of good quality.
7-8		1. I exceed expectations in being able to describe the depths of the topic, in a formal, easy to understand and convincing way and effectively use a range of appropriate vocabulary. 2. I present an educational video with 5+ images and videos and am very capable of strictly using facts and science when explaining the concept, and do not state my opinion in the educational video. 3. Throughout the educational video, I am able to use effective and appropriate nonverbal communication cues to build trust, clarity and rapport and the video is relatable to the vast majority of my audience members, as I was inclusive to people of all situations, and used real-life scenarios and cases, backed up with data. 4. I was able to source my video properly, give credit to secondary research and use 100% trusted sources. 5. The educational video is edited to a professional level, and the audio and clips recorded are of good quality.

Action plan

After finalizing a product success criteria, it is necessary to design a detailed action plan to help me stay on track and self-regulate my time by following an organized, time-specific algorithm. By doing so, I will be able to follow steps at an underwhelming pace to help reach all deadlines for the product, and Personal Project report.

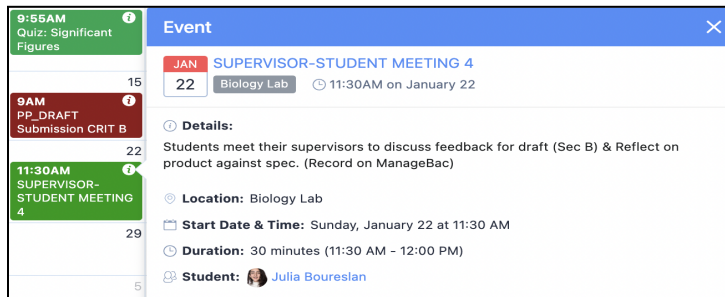| Action	Priority	Status	Start	End
Finding reliable research sources for the topic	High	Completed	19/08/22	20/08/22
Start the research process/write proposal	High	Completed	21/08/22	23/08/22
First supervisor meeting	Medium	Completed	23/08/22	23/08/22
Second supervisor meeting	High	Completed	04/09/22	04/09/22
Complete crit A draft	High	Completed	19/10/22	12/11/22
Write and finalize educational video script	High	Completed	12/11/22	01/01/23
Third supervisor meeting	Medium	Completed	13/11/22	17/11/22
Complete survey on video preference	Medium	Completed	10/12/22	13/12/22
Start filming educational video	High	Completed	03/01/23	03/01/23
Edit educational video and submit product	High	Completed	04/01/23	07/01/23

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Fourth supervisor meeting	Medium	Completed	22/01/23	22/01/23
Receive and add feedback to educational video and polish.	High	Completed	05/02/23	05/02/23
Exhibition	High	Completed	07/02/23	07/02/23
Polish and submit final report	High	Incomplete	09/02/23	18/03/23

I have finalized my plans for both creating my product, and the general timeline of the Personal Project, this then allows me to progress into the next stage - Creating my product!

Applying Skills

Achieving my learning goal (*Self-management* and *research skills*)

Throughout the project, I have dabbled in all 5 ATL skills, mainly utilizing that of my self-management and research skills in a dedicated attempt to achieve my learning goal. My self-management skills were a great help in the process of meeting my learning goal, as it was crucial to stay on track with deadlines and ensure I am able to properly manage both the personal project, and other school-related events without feeling overworked or behind. To do so, I created a detailed action plan which helped me manage my time efficiently, while also taking advantage of Managebac (commonly accessed whole-school learning platform), to actively add personal project events/deadlines. In the example above, I set a due date/reminder for a supervisor meeting that was to take place on 22/01/23, and continued to do so throughout (i.e asking a specific question to my supervisor, or to research something specific). It was also important that I think about the other parties involved in my project, such as my supervisor/mentor, to set dates accordingly and conveniently to all, so I communicated practically (as shown on the right-hand side) by sending messages in advance on Teams, while sending a range of available dates to set that meeting.
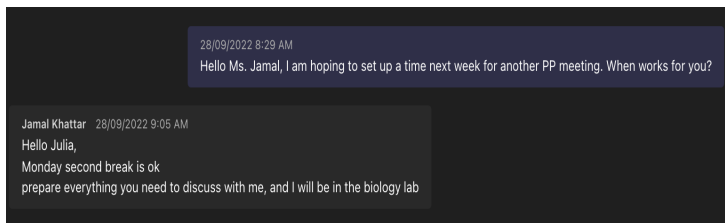
Using my research skills are what helped the project come together in clarity. When writing, talking, and exploring a scientific topic, it was not solely up to me to construct, because it was important to deliver the topic to my audience in a factual, righteous manner, as the topic is complex, and can be sensitive to those who find any kind of relation to self. Research was the blueprint of my project, and I chose to do so using a variety of secondary resources (such as the internet, books and podcasts), ensuring to consider different perspectives, and to take an unbiased, neutral stance when delivering the project to my audience. I have read reliable articles by institutions such as Harvard and The Edvocate, and books such as "The Whole-Brain Child" by neuropsychiatrist and author Daniel J. Siegel (M.D.) with the help of Tina Payne Bryson (PH.D.) who provided advice to parents on ways to deal with different probable scenarios with their child, as well as "Child Development and the Brain" by Rob Abbot and Esther Burkitt, which encourages change in our understanding of child development. By doing so, my external research for the project was made stronger, and this assisted in the creation of a more diverse and unique

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video script. Furthermore, to help my thought process come to life, I also created a mind map in which I came up with focused research questions, and complementary queries.

Research plan

To further organize my thoughts and to stay on track research-wise, I additionally created a research plan which assisted in creating an outline, which consists of focused and unfocused research questions, and possible sources to consider.

Research questions	- How do our minds develop? - How does one's early childhood influence their brain chemistry? - How can we retain information in a more effective manner in terms of the neuroscience behind one's learning and at-home environment? - What factor/s influence higher education functions?
Complementary questions	- What is early childhood development and what are the early years? - How does early childhood development relate to neuroscience? - Is childhood trauma irreversible? - What is the serve and return dynamic? - How are brain connections created? - What age range will a child's brain develop complex functions? - Why is it important to understand how the brain develops? - Is a child's brain development affected by nature or nurture? - How can a safe environment/space be built for a child?
Possible sources	Brief
Source #6: (McKay)	Article written by Dr. Mariana Rickmann (PhD scientist and parent) who presented her research about the topic through 10 facts about neuroscience in childhood development. The article goes in depth and breaks down each individual fact while backing it up using real-life scenarios to help the target market (parent/educator) understand and apply the situation.
Source #3: (Parents)	Visually appealing and memorable, short animated video which displays and teaches the audience about a child's biological, and psychological brain development, while also addressing any/all factors in a child's life that could alter their brain chemistry, and impact their neurodevelopment.
Source #1: ("InBrief: The Science of Early Childhood Development")	A brief, educational article written to introduce the audience to the complex topic, in a simply-worded manner to slowly ease the reader in. It is presented through numbered bullet-points, which each tackle a different angle, in addition to the educational images attached to gain a better understanding.
Source #10: (Siege)	A book written by a neuropsychiatrist and author which provides the reader with expert opinions, advice and information. The book discusses and analyzes the neurological and developmental causes of a child's numerous meltdowns and misbehaviors, and how to deal with each occurrence.

Creating a research plan was time efficient and useful and proved to be so in terms of limiting my research questions, and finding a focus; as well as it being an outline (which assisted me in visualizing what my research could look like); and as a guide throughout. As stated in my ATL skills above, research was the blueprint of my project, and it is crucial that I design a research plan best suited to help in

addressing my questions of inquiry, while also acknowledging other perspectives. When it came to gathering facts in bullet-point form, to later type up my video script, I constantly referred and used the research plan, as the research questions were targeted, while the complementary questions were more broad and general. By following this layout, my own queries were answered, alongside questions from different perspectives, which I specifically collected with the help of a survey (sent out to secondary students as a part of gathering primary research). As for my secondary research, I used a variety of different resources, and while I ensured they were all factual and came from a reliable source, I used the CRAAP test method to evaluate my sources and ensure they were credible.

Evaluating source with CRAAP

CRAAP Evaluation of Source: https://www.brookings.edu/blog/brown-center-chalkboard/2019/09/26/what-cutting-edge-neuroscience-tells-us-about-early-childhood-development/	
Currency	The article was not recently published (2022-2023) as it was released on September 26th, 2019 which does not make it outdated. However, the information in the article is not opinion-based, rather factual. As well as the article being recently accessed, meaning that any updates would have been made if needed.
Relevance	The information in the article strongly relates to my topic as it revolves around the study of the early language environment and how that affects healthy/intellectual growth. Otherwise known as "*parent language*," it is highlighted that it is not just the words spoken to a child that matter, more so the interaction between the parent-child. Another crucial aspect of my topic idea is the serve and return interaction, which is a responsive interaction between a child and an individual who cares for them, and the positive impact of growth and achieving their full potential. In conclusion, it is important to the writer of the article (Dr. Dana Suskind) to send out a detailed article directed to parents, caregivers, educators and adults, addressing and breaking down the issue, and proposing multiple methods of solution. The article provides me with new information, and answers 3 questions (eg. "How does one's early childhood influence their brain chemistry?" and "How can we retain information in a more effective manner in terms of the neuroscience behind one's learning and at-home environment?")
Authority	The article is published by the Brown Center (Brookings Inst.) which is a source of research based analysis, and the piece is specifically written by the qualified and experienced Dr. Dana Suskind, who is a Professor of Surgery and Pediatrics at the University of Chicago Medical Center.
Accuracy	The information in the article does not fail to be supported/backed up by evidence throughout, and an example of this is by referencing a case study by fellow Dr. Patricia Kuhl or a 1995 case study by child psychologists Betty Hart and Todd Risley. Furthermore, Dr. Suskind's choice in references says a lot, as those who she mentioned are qualified professionals. In addition, the evidence is cited, and direct links to the sources are also provided. It is also important to note that the author took an unbiased stance, while providing readers with facts.
Purpose	The purpose of the article is to educate, explain and break down the complex topic to a wide-spread audience with the hopes of spreading awareness to this generation, to

	encourage the adoption of a newer, better 'serve and return' dynamic.

After completing the CRAAP test throughout the process of my action plan, the test proves to be a great help in deciding and verifying if my sources are reliable/valid by evaluating each strand, and looking into the details of the resource. As for my research, to stay organized, I worked on an external document to avoid any complications, and answered all of my research and complementary questions in a script form. By doing this, I was able to present the information gathered over time in a less complicated form, as my topic is very scientific and detailed, and to make it a memorable experience, I needed my educational video to also be somewhat touching to my audience (relatable).

Evidence of information gathered (Script)

As a 16 year old kid, sometimes I fail to remember that it's my parent's first time living too. It's their first time raising a kid, and their first time experiencing a parent's 'sixth sense,' it's their first time doing something *truly* independent, without *their* own parents. That is not something to take lightly, the gift of a child is one of life's biggest responsibilities. And it's not solely reliant on one's ability to give their child everything they would ever need, or making sure that every Christmas, Eid, and Diwali is met with a big family gathering. Raising a child, for many parents, can unknowingly be an unsuccessful journey- but it is not black and white, and I will be one to explain the complex factors of that criteria. Otherwise known as the neuroscience of early childhood. The human brain is a sophisticated organ that is capable of single-handedly controlling our bodies, it has possession over our thoughts, memories, emotions, vision, touch and every other procedure within the body. Its architecture comes together through a process that takes place before birth, and progresses into adulthood. It is crucial to grasp the concept that it is the early experiences in life that affect the quality of the brain's construction, which is done by implementing a strong/fragile foundation for one's learning, health and behavior. The brain's architecture is built in a 'bottom-up' hierarchical sequence. This foundation comes together in significance because the higher level, and more complex circuits are built on the lower level circuits. Which means, if the lower level circuits are not wired properly, the development of higher order skills become much more strained. ("Brain Architecture") Over time, the brain circuits stabilize and its plasticity decreases, meaning that it becomes much harder to alter, let alone reconstruct, later on in life. Between early childhood and adulthood, the brain undergoes synaptic pruning of circuits that are no longer used. (Lynch)

Developmental windows are the critical first 5 years of a child's life, in which the necessary learning must take place, as the brain develops connections faster than ever. The brain is powered by these connections, and they can impact a child's learning and success permanently. If a child does not receive the necessary learning, they will face the "unbridgeable gap" that cannot be revived in future learning. ("Child Development: The First Five Years") A child's day-to-day relationships with their caregivers literally sculpts the brain, and encourages the development of neural circuits. This dynamic is otherwise referred to as serve and return. Relationships that are attentive, active, and responsive, with two-way, back-and-forth interactions are building blocks to a strong foundation in a child's brain for any future development. It is important to understand the concept before applying it. Imagine playing a game of tennis, a child begins the serve when they send out a call for interaction, this could be when they smile, mumble, or cry. A responsive parent should return the serve by offering love in the form of a smile, hug or simply by playing peek-a-boo. However, dysfunctional relationships, and the consistent absence of interaction between a parent and their child will create a strain and setback for healthy development. (Parents) The child reacts to this when the body's stress response is heightened, resulting in the flood of potentially harmful stress hormones into the developing brain, as well as not receiving the positive stimulation needed, disrupting the brain architecture. Moving on to the biology of stress, when a child

is in a stressful situation, the adrenal medulla releases a hormone, popularly known as adrenaline, which is a biological system that prepares the body for a fight or flight response. This causes an increase in heart and breathing rates, blood pressure, and sweat, and the system returns to its resting state once immediate danger passes. Although, when a child's stress is consistent, it could likely interfere with the body's immune system and brain development. There are many branches of stress, one being positive stress, which is an important part of a child's development as it is a result of stable and supportive relationships. It is often experienced when a child meets new people and situations, the pain of a fall or a needle, dealing with feelings of frustration, or limits set by adults. The stress response is short-lived, and results in mild increases in stress hormone levels and transient increases in heart rate. Tolerable stress however, is a stress response that could potentially disrupt a child's brain architecture, but is oftentimes met with supportive relationships that aid in adaptive coping. It can occur as a result of the death, or serious illness of a close family member/friend, parental divorce, experiencing a scary or major trauma event. It is usually time bound and gives the brain time to recover and heal from the likely damaging effects. Toxic stress is the dangerous kind, and it is intense, and is the prolonged activation of the body's stress response when the child is not under parental protection and support. Drivers that can lead to the development of toxic stress are states of extreme poverty, physical and emotional abuse, child neglect, a severe case of maternal depression, family violence and substance abuse. As a result of toxic stress, the developing brain architecture is quickly disturbed, which leads to a lower activation threshold in stress management systems. The child is then left to deal with lifelong issues with learning, behavior and physical and mental health. (Rolnick)

There are many ways to create a safe environment for your child, one which will best support their developing brains and needs and will allow them to feel secure, showered with love and happiness. Adopting one, and progressively working towards better habits will change a life. Allow your child to engage in everyday tasks that fit into their age group and capabilities, this can span from things such as helping with meal preparation, cleaning, or their personal hygiene. Encourage your child to form deep bonds with nature. Encourage them to spend time and engage in their favorite activities, and ensure they repeat this. This helps their brains focus on the experiences that are most important to them at the time. To address educators, an infant/child should not be expected to sit for lengthy amounts of time, allow students to move around the classroom. Give children time to explore: this is known as 'free play.' They can choose which materials and activities to put to use. Children like handling the toys or materials as they learn with their hands. This kind of learning is known as a hands-on experience. All of the senses provide information to the brain, which is how minds grow and acquire an understanding of the world. (McKay) Nature VS Nurture, a popular phrase in the field of psychology, and in this case, it is crucial to understand that a child's brain development is actually affected by both factors: nature *and* nurture. To put it simply, nature refers to a child's genetics and hereditary factors, which include what the child is born with, and their inherited traits and capabilities. Nurture, however, reflects on a child's environmental factors, which include: a child's experiences, their physical and learning environment, and the care and love they receive, such as the relationships that are built with the people and community around them. A case study on identical and fraternal twins found that a baby/infants' sleeping patterns are predominantly determined by genetics, as well as 60% of that baby's temperament being determined by their genetic makeup- which includes traits like whether the baby is sociable or shy, sedentary or active, and their food preferences. And while genetics are the main driver for such aspects of a child's development, it can also be strongly influenced by the baby's experiences. For instance, a baby with insufficient sleeping patterns can improve by being exposed to any form of sunlight during the daytime, and by parents putting in place a bedtime routine that works towards achieving a better sleep schedule. Whether calming and soothing a crying baby is an easy or difficult

task is also based on genetics, but putting in the effort as a caregiver to swaddle, rock and sway the baby in an attempt to help overcome this, will lead to positive development. (Parents)

Achieving my product goal (*Thinking* and *communication skills*)

A few years ago, I acknowledged my interest in the field of filmmaking and brought my passion to life when I began taking videos of myself talking or of scenery, and gradually learnt how to edit these clips into a Youtube-style video. When I was met with the opportunity to design any product of my choice to encapsulate my topic, it was no debate that I create an educational video, and I used my thinking skills (creative, critical and transfer skills) throughout. In more detail, I thought critically in the start of my creative process, when I identified the first obstacle of my project, which was my uncertainty regarding the style of video I wanted to produce. With many options of presenting, I did not know which video type would be most efficient in delivering an educational video that my audience could relate, understand and learn from. I was able to overcome this challenge when I created a Google Form which I sent out to parents, and educators (primary target market), in which I questioned them on their personal preferences (animation, documentary, Youtube-styled video) and what would be the most interactive. By doing so, I was successfully able to consider ideas from different perspectives, which after careful consideration, assisted me in deciding on my final product. After it was decided that I create a Youtube-style video, I started typing up my script, which was done after I gathered information and images (data charts, relevant and relatable photographs). My creative thinking skills were used when I was finally able to apply my prior and existing knowledge to generate a newer product, as well as using my transfer skills when I applied my skills in an unfamiliar situation, which was when I learnt how to use CapCut (an editing software I had never used prior).
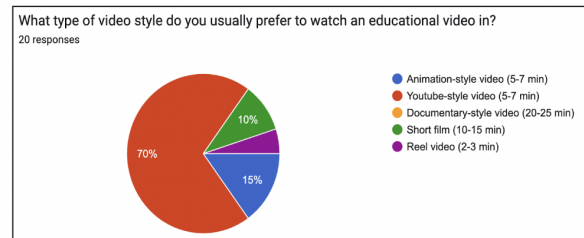

Survey taken (insert date) by over 20 parents/educators on their educational-video style preference.
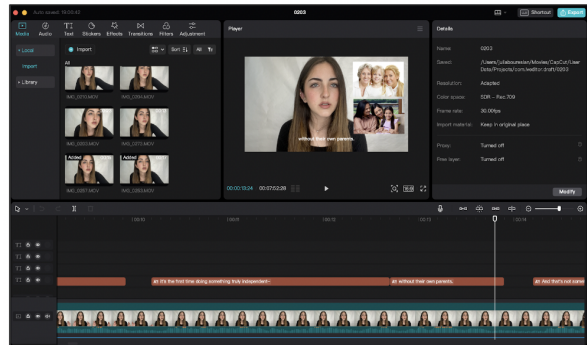
Creating my video using CapCut, and learning how to insert pop-up images and automated subtitles.

As for my utilization of communication throughout my product production, I was able to put that skill to use in many different stages. The first point being when I was first dealing with the obstacle of uncertainty about the style of video I wanted to present (as stated above), when I chose to *reach out* to my target market and ask for meaningful feedback. I did so in the form of a Google Form, as shown in the image on the right-hand side, which I sent out to over 25 trusted parents and educators and asked them a series of 6 questions. The feedback I gathered was in response to one's personal preference on topics such as whether or not a presenter should be present in the video, if visuals are necessary, the duration of time, if subtitles are preferred (in order to be as inclusive as possible to a wider audience) and one's opinion on factors that make a video appealing. I used and incorporated this feedback into my final product, by ensuring I was present in the video (as a narrator) while being charismatic and using nonverbal communication (hand gestures, eye contact, etc.) which in return, illustrated my use of a variety
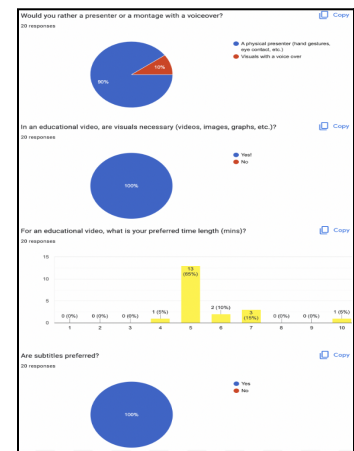
of speaking techniques to communicate with a variety of audiences- Such as my use of automated subtitles throughout the video to be inclusive, as well as explaining a complex topic in simple terms, to appeal to people of all interests and levels of knowledge. I also included pop-up images and video clips while I was speaking to help the audience visualize and limited the duration of the video to 7 minutes. In terms of interactivity during my presentation, I ensured to come up with an innovative idea that would also benefit my project. To give my audience members a memorable experience, they were met with a prompt: "*Good or bad, what is something someone told you as a child, that deeply impacted you?*", which they answered on a paper and *locked* their answers in on the grid. As a result, I was left with a colorful display of real, vulnerable and authentic responses. Some of the highlights were responses such as: "My father once told me that I would never make it in life as a marine biologist," or "My teacher told me that I talked too much, that hurt me," and more uplifting responses of "You are a star," and "My arabic teacher told me I would grow up to an excellent writer, and that stuck with me ever since. "

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Reflecting

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Personal impact

The personal project has moved me and changed my perception of early childhood development. It has healed a part of my inner child and has helped me in grasping some sense of stability, peace, and reassurance. In context, my learning goal is "to explore the importance of neurodevelopment during the 'Early Childhood Years', and to highlight the damage caused on developing brain architecture, which can lead to lifelong issues in learning, behavior and physical and mental health." Throughout my time working on this project, taking into consideration the extensive research needed to properly back up my findings, I came to the quick conclusion that I found difficulty in understanding the depths of my topic. To overcome this issue, I soon realized that I needed to understand and come to terms with the basics of neuroscience, before jumping into the depth of childhood. By changing my way of research gathering, I made it much easier on myself as complicated terms started to seem less unfamiliar. I was able to challenge myself, and began understanding content of higher levels, I was also able to use my knowledge to raise awareness and educate others in a creative, yet somewhat simple way. I compiled my months worth of research into an educational video script, and proceeded to find images and video clips that would represent some of what I was saying to give the audience more visual appeal. Moving on, I also focused on nonverbal communication cues (facial expression, gaze, eye contact and hand gestures) and began recording my script, and proceeded to join the clips using the CapCut editing software. Editing my educational video needed preparation on its own, and I began this process by watching endless tutorials to learn different features of the application. As a result, I learned how to import video clips, images, audio, use greenscreen, as well as inserting text, effects, transitions and how to upload my work onto YouTube.

It came to my attention, after I received feedback on my video, that it was absolutely necessary that I find a way to touch people's hearts- "To make someone take a part of your project home, you must steal a part of their heart," was the memorable advice I received which led to another idea, one which parents, children, and educators would hopefully remember. As shown above, I wanted to take my presentation a step further by creating an artistic piece to add a creative element. This idea came together when I decided I wanted a framed image of the human brain in action on display, however, to make the piece memorable, I used symbolism by adding elements such as a lightbulb (to show ideas, and creativity), gears (thinking and intelligence), and so forth. This piece turned out to be a huge success, as many people were immediately drawn to my

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booth by the unfamiliarity of it, especially considering that I added simple, everyday materials, rather than cliche options.

Product evaluation

| Areas of Strength	Product Success Criteria	Areas of Development
The educational video was 7 mins and 52 secs long which was sufficient enough to explain all that was necessary.	The length of the educational video is over 5 minutes (6-10 mins).	
The research collected includes information about what my topic is, as well as answering many of my inquiry questions (shown in action plan). All my research is credible and reliable, and the CRAAP test confirms this,	The educational video conveys clear, detailed, and relevant information that gives the audience a full understanding of the complexity of the topic as well as being on topic and I am able to confidently display my knowledge to my audience members..	
As a result of my experience using editing softwares prior to the Personal Project, as well as my initiative watching tutorials on how to use CapCut, I was successfully able to make my video visually appealing by adding pop-up images, editing the lighting, using a ring-light and a back-drop, while ensuring the camera and audio quality are good.	The educational video is of great camera quality and is very visually attractive and grasps the audience's attention with many pull factors, while also portraying the topic through a sophisticated, yet identifiable theme.	
	All audience members actively watched the educational video, and were entertained throughout, and showed their interactivity by successfully explaining the complexity of the project, and takeaways from the educational video.	Due to the video being quite lengthy, I was only able to showcase the first 2 minutes of my video to parents and educators, however distributed QR codes so they could watch it in their free time.

Product self evaluation

| Product goal: To create an educational video, which will allow the audience to understand the importance and seriousness of the topic, as the video will bring awareness to the neuroscience of early childhood development, while also being a great resource for information and action-taking, and will hopefully lead to developmental change.	
Level	Description

0	The student does not reach a decent standard of any of what is described below.	
1-2	1. I am able to describe the perimeters of the neuroscience of early childhood development, in a shallow, informal and unconvincing way. 2. I present an educational video with little to no images or videos and am unable to strictly use facts and science when explaining the concept, and frequently state my opinion in the educational video. 3. Throughout the educational video, I am unable to use nonverbal communication cues to build trust, clarity and rapport and the video is not relatable to my audience members, as I was not inclusive to people of all situations, and did not use real-life scenarios. 4. I was not able to properly source my video and give credit to secondary research. 5. The educational video is not edited to a decent level, and the audio and clips recorded are blurry/unfocused or of bad quality.	
3-4	1. I am able to describe the perimeters of the neuroscience of early childhood development, in a somewhat convincing and proper way, with some formality. 2. I present an educational video with 2-3 images and videos and am able to use mostly facts and science when explaining the concept but still state my opinion in the educational video. 3. Throughout the educational video, I am partly able to use nonverbal communication cues, however lack consistency and the video is relatable to some audience members, and I was not inclusive to people of all situations, and used some real-life scenarios. 4. I was able to source some of my video and give credit to some of the secondary research conducted. 5. The educational video is edited to an acceptable level, and the audio and clips recorded are blurry/unfocused at times.	
5-6	1. I am able to describe and explain the neuroscience of early childhood development, in a competent, formal, and convincing way and effectively use a range of appropriate vocabulary. 2. I present an educational video with 3-4 images and videos and am capable of strictly using facts and science when explaining the concept, and rarely state my opinion in the educational video. 3. Throughout the educational video, I am able to use some appropriate nonverbal communication cues to build trust, clarity and rapport and the video is relatable to the majority of my audience members, as I was inclusive to people of different situations, and used real-life scenarios. 4. I was able to source my video and give credit to secondary research. 5. The educational video is edited to a good level, and the audio and clips recorded are of good quality.	✓ ✓
7-8	1. I exceed expectations in being able to describe the depths of the neuroscience of early childhood development, in a formal, easy to understand and convincing way and effectively use a range of appropriate vocabulary.	✓ ✓

	2. I present an educational video with 5+ images and videos and am very capable of strictly using facts and science when explaining the concept, and do not state my opinion in the educational video. 3. Throughout the educational video, I am able to use effective and appropriate nonverbal communication cues to build trust, clarity and rapport and the video is relatable to the vast majority of my audience members, as I was inclusive to people of all situations, and used real-life scenarios and cases, backed up with data. 4. I was able to source my video properly, give credit to secondary research and use 100% trusted sources. 5. The educational video is edited to a professional level, and the audio and clips recorded are of good quality.	✓

After completing the self evaluation above, my Personal Project turned out to be a great success. This is evident in my rubric, as most points from level 7-8 are met which shows that I have exceeded the expectations in terms of my educational video (product). I was able to properly advertise my video to my audience by showcasing the first two minutes, and provided them with a QR code which they could scan to finish off the video. However, to avoid this hassle altogether, I could have created a shorter video using highlights from my, almost 8 minutes, educational video which I would have displayed on the night of presentation. I also advertised my video by publicly publishing it on YouTube, allowing a much wider audience to access and view the content. Strand 3 was met at a 5-6 level because while I used nonverbal communication cues, I could have further improved by being more consistent with hand gestures, facial expressions, etc. Furthermore, strand 5 was also met at a 5-6 level because my video was produced to a good level considering my skill set and experience, however could be further improved if the use of transitions, green screen and a microphone was more evident.
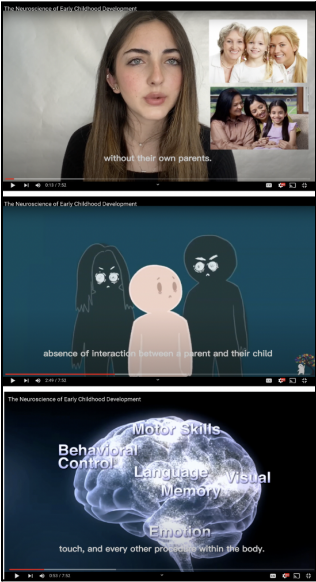
Product evaluation - Audience survey- extract
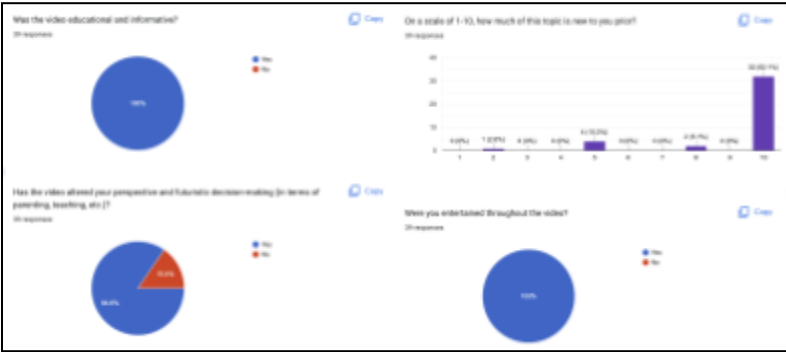
Overall, the personal project has helped me further develop ATL skills such as my self-management, research, thinking (both critically and creatively), and my communication skills. It has also helped me better understand my strengths and weaknesses, and has provided me with a stronger sense of responsibility when working on bigger projects, which are all traits of perseverance and diligence.

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