

The Knowledge of Memories

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Memory has a broad effect on many aspects of our lives, memory can help us retain information, and form lasting relationships, and in some cases, it even helps provide insight into others and the way they view the world. Our memory has different impacts in the developmental stages of our lives. Though it may seem like a small impact, we will show that memory has a crucial part in our developing selves.

Memory is defined as retaining, storing, and retrieving past information to use at a later point and to form lasting relationships. There are many instances when memory is called upon to help us have a sense of reality, and in other cases to establish our identity. Having that sense of identity is reliant on us remembering what happened in our lives and the same can be said for religion (Watts, 1995). The knowledge we have of our past directly influences our future. For example, someone that becomes an expert in fixing computers uses their past knowledge and even experiences to recall how to fix different computers. If they suddenly lost all memory, then they will no longer know how to fix the computer. To understand the importance of memory, we first have to understand what memory is and where it comes from.

Memories are formed in the prefrontal cortex, many important functions reside in this part of the brain, one must take care of the brain being that it holds so much information that we rely on in our day-to-day lives. The brain uses specific neurons in a collective group. These neurons will travel to their respective places and work together or in a specific sequence to form different types of memories. For example, when a child is learning new words they will rely on past information and relate it to the new word they are learning, this allows them to easily identify that specific word. What is occurring is the child's brain is recalling a past group of neurons to perform an action they have already performed but more so in a revised way. Something to note is that all these memories are stored in different parts of the brain, not just the

prefrontal cortex. Like many other parts of our body, it relies on different parts in order to function properly, by itself memory is seemingly useless by just storing information, not being able to recall past information will bring about conflicts in forming relationships, performing well in school, and work, and even completing tasks that is reliant on that information.

There are two types of memory our brain makes and that is long-term memory and short-term memory, our short-term memory is used to store small amounts of information for a short period of time, this is also known as working memory. We rely on our working memory to perform specific tasks at a customer service job, it's important for the worker to remember the everyday tasks they are responsible for, like cashing out customers and maintaining cleanliness. In school, the student will use their working memory to perform well on a test they studied for or to answer questions the teacher may be asking them to help encourage recalling past information.

There are many different techniques to aid our memory, some people will use a list and read it over and over, others will have flash cards and have someone test what they remember, etc. These are called memory aides and memory aides are an added help to retain information and to be able to recall it at a moment's notice. A Greek poet was once able to recall all the people that tragically died in the collapse of the banquet building. He was able to recall every person because they had all passed in the same position from when they were alive (Watts, 1995). Once it was more accessible to write or read books, computers became another influence on memory. The way computers are built today and even back then their framework is meant to hold large amounts of information, their system is finely intricate to process and store information according to the subject, and the ability to search for said information at a later point. This type of memory processing is far different from human memory, they may have a lot of similarities but when paying attention to detail they are just as different. With human memory,

a person may be able to remember small details that can later be important, though others may not have paid attention to that detail, nevertheless, those details are another important factor in the memory process. On the other hand with computers and memory storage, computers tend to have a more broader perspective or an exaggeration of details. Oftentimes, while using a computer you have to rely on multiple sources to make sure that you're receiving the most accurate information. Computer memory stores relevant memory but it's usually in one spot grouped together or in crowded storage, in human memory people can remember something they want to recall but oftentimes will forget certain details, key information like your name, address, etc human memory shows "graceful degradation" (Watts, 1995). An important type of memory to note is personal memory because this type of memory helps shape our identity or how we see ourselves and others as well. Personal memory shows how different people hold certain details and information that they find important or significant. Our sense of who we are in relation to God's plan comes from a reflection of our personal memories (Watts, 1995).

Memory plays a major part in child development, as a child ages the influence of their memory grows as well. They will first begin to retain information about their surroundings, like who maintains provides for their basic needs, retaining the image of their parents and close loved ones. As the child grows new memories are stored, and they begin to form new relationships, enhancing their language and motor skills depending heavily on their working memory. Different techniques to separate information like organization, rehearsal, and being elaborate have a significant role in the age-related changes that happen in performance with age (Schneider, Ornstein, 2019). During infancy, this time is crucial to develop good memory skills because there is evidence that infants are able to briefly retain experienced visual information over different periods of time which can last up to two weeks (Schneider, Ornstein, 2019). Infants will use

most visual and auditory cues and mimic those movements, which is why it's important to practice with the child during this stage so that as they get older, they can instantly recall that past information and then perform the necessary actions. This is called retention, where the child is actively restoring information or details that will help them perform. From two to eighteen months retention begins to show an increase, after a few weeks when the infant is about nine to twelve months old they can recall multiple steps of sequences. This shows us the advanced and high-functioning memory system in early childhood development (Schneider, Ornstein 2019). This does not only affect infants, there is research that suggests working memory in the frontal and parietal areas plays an important role in the performance of children, adolescents, and adults. The way they are displayed by each indicates the different stages of development they are in. For example, a middle school student may be able to memorize their multiplication, but can't remember specific details of a high-level reading book. As they get older those skills should have been enhanced so now they can remember more than one significant detail.

Another contributor to memory development from childhood to adulthood is temporal memory, which is the ability to remember multiple events in the order they were presented. This is directly influenced by episodic memory, it briefly takes events from your long-term memory and presents each event in order to how they happened. There is research that suggests infants are able to remember the temporal order of actions in a sequence (Canada et al., 2020). For example, a mother of an infant sets a specific routine for when the child goes to bed, by doing the same steps in the same order every day, that child will retain the schedule and be able to recall and perform those actions almost on their own. There are two ways to assess temporal order memory, one is primary judgment and which involves making judgments about temporal order on multiple events. The second is the ordering or sequencing task, which involves showing

certain stimuli that represent multiple events according to how they were presented from their memory (Canada et al., 2020). A study was done on children from ages four to five to show what different effects occur when analyzing temporal memory order. The study began by picking out a number of children based on their developmental growth, and they were then split into different groups. Over the course of time and repetitive actions, the children began to recall every event showcased in the order they were presented. For example, a researcher will show a child five events that are relevant to the child, after showing these events and mixing up their order, the child will then have to figure out the correct sequence of events. This study showed the different ways someone may be able to process and organize their memory and it also showed the different ways memory is stored. Two types of processes occur in temporal memory, the first is reconstruction using contextual details associated with events to infer when past events occurred. The second process is the distant-based process that involves using differences in the strengths of memory trace to infer when the event occurred (Canada et al., 2020).

As it was stated previously, memory holds a crucial role in childhood to adulthood development, just as quickly a person can engage with their memory is just as quickly to be lost depending on the type of trauma that was experienced. As a child, if they face a lot of neglect or abandonment then they are more likely to develop a number of mental health issues. That child will begin to do any task that helps protect them and make them feel safe, when faced with trauma at a young age this can open a lot of psychological problems including a bad memory. A culture without memory will be barbaric as famous philosopher Santayana stated, negative events will occupy all of our affirmation and make it close to impossible to connect the past, present, and future (McClay, 2022). Some results of negative impact on memory, are developing Alzheimer's disease, strokes, and disassociative memory loss can greatly influence how a person

acts in social groups, forming new relationships, and maintaining present ones. In the work and school environment, someone suffering from this may not be able to fully function on their own. It's almost as if they are dead inside even though they do all bodily functions. No one can be blamed for having Alzheimer's, but the American people can be blamed for abandoning the requirement to know our own past. Failure means failure to pass that knowledge to newer generations (McClay, 2022). There is no one to really blame when one's mental health becomes severely damaged, obtaining Alzheimer's disease or schizophrenia can be from many factors like the environment, medical procedures, health factors, physical factors, etc. In some cases, the damage can be reversed but when untreated for a significant time it can have lasting effects and turn more severe.

There are many ways to help improve memory skills, some are to change your diet, a healthy amount of exercise, and even practice flashcards can help improve retaining and recalling past memories. There were studies done to find more techniques to improve memory, one is called space retrieval, this technique is used to treat memory function as it relates to specific everyday tasks. It requires a person to recall a small amount of information over a certain period of time until that information is retained in long-term memory (Varce & Farr, 2007). When doing research on this technique it came across as long-winded and very complex, but over time its simplicity began to show. Older adults participated in sessions that were an hour long and they practiced mnemonic strategies to help them remember words, lists, and details from different narratives (Varce & Farr, 2007). Space retrieval does not have any requirements or rules that must be followed in order to work, it is based on the person and where they are with their memory skills. This technique would even be great for people that are in the early stages of Alzheimer's disease because the brain still has functions of its muscles to retain and recall past

events, said person may be struggling to gain control, and space retrieval can help them with that. Space retrieval is simple and easy to understand, it doesn't require any special training or knowledge even people with mild memory problems can do this technique on their own, it relies on effortless learning (Varce & Farr, 2007). The study also suggested that people with early onset Alzheimer's or any other mental illness can be almost recovered or at least gain a bit more control of their thoughts by doing this technique. This is not to be fooled with a cure because unfortunately there is no real way to cure a mental illness, we have to rely on the brain to fix or heal itself over time. This is merely another way for someone to have more control over themselves before losing it. A study used space retrieval on adults with Alzheimer's to improve name and face recognition, in a matter of seconds the adults were able to do minimal name and face recognition of people they've met in the past (Varce & Farr, 2007). Being that this technique is so simple, it's almost easy to see the success of doing this.

Another technique that helps with enhancing memory is deep brain stimulation, this technique deals with physical stimulation of the brain to help engage the neurons grouped with memory. Deep brain stimulation is a neuromodulation surgical technique done by drilling holes into the skull and then electric or metal rods are placed to connect stimulators to the targeted location (Shawn Zheng et al, 2020). This technique seems more complex because the patient will have to undergo surgery and not many are fond of being cut open, but being that this procedure is so delicately done, it has lasting effects. Some human studies on DBS appear to contradict this hypothesis, as DBS during the memory task itself was observed to improve memory. However, these improvements might appear to be related to theta wave mechanisms, as mentioned in the electrical section above (Shawn Zheng et al, 2020). In other words, this technique may come across as effective, but depending on the severity of the person's memory,

and the attributes that damaged it may have a more lasting effect than DBS itself. These techniques are not meant to be used as a cure or a way to get rid of said mental illness but should be used more as an enhancer.

In conclusion, memory has become a crucial part of everyone's development, we use it in our schools, workplaces, chores, forming relationships, etc. There are many impacts that can affect our memory both in a positive and negative way, it is our job to protect that small but very important part of our brain. It has many effects in different developmental stages. In infancy to early childhood is when we begin to retain information in a specific order this helps us to focus on details and the beginning of learning social skills. In middle to late childhood, we begin to retain more specific information as it pertains to certain situations, relationships, and everyday conversations. Neglecting to enhance and maintain your memory can bring about many negative implications, like not being able to recall information about yourself or you seem to have issues with connecting faces to names. This can set a person back not only mentally but emotionally as well, they may feel lost and have no control over their emotions and events going on around them. In some cases, mental illnesses are formed based on the severity of memory loss. Our memory should be treated with care and importance but also remember to not be overbearing when practicing memory skills.

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