

Information processing theory essay sample



The information processing theory gives us a glance or an idea of the way people learn. It looks at the ways our mind processes any incoming information, and how it is processed and moved first into working memory and then into long-term memory. This theory also describes the way each of these component parts and the system linking them improves with time. Strong inclusion of the information processing theory can lead to more effective ways of teaching, which will result in children becoming better at retaining and processing information. They also learn to integrate it into their knowledge base so it can be reused in the future more effectively. The information processing theory was developed to help social learning theorists and others understand how humans learn and solve problems. When applying information processing theory to child development, researchers examine how the mental processes mature to explain changes in problem-solving behavior, decision-making, information gathering and storage, and other cognitive processes.

Some of the most basic parts of the information processing theory is the way our minds absorb, process, and holds any information. This process consists of three basic parts and a central executive that controls the information flow among those three basic parts. The three parts are the sensory register, working memory, and long-term memory. It is believed that the sensory register holds raw sensory data for very brief periods. This means that it gathers almost all the raw data from the different senses like sight, hearing, taste, touch, and smell. The amount of the information it gathers explains why the register only holds it for such a brief period, and its existence is also explained by the amount of information.

Even the smallest, easiest event is not recorded completely and the brain needs to take some time to strip down the information to the portions necessary for the task at hand. For example, while sitting here typing this assignment, my brain is absorbing a wide variety of stimuli, including the words on the page, the sensation of my fingers on the keyboard, the sound of the T. V. in my son's room, etc. But the only sensations getting imported into working memory are those relating to the writing of the paper. If anything would change from the range of stimuli I am currently getting my brain will recognize that a different stimulus takes priority over my current focus and needs to be moved into working memory so I can deal with it.

The prioritization of information is performed by the central executive, the process of the mind that regulates the flow of information. It decides which information makes it from sensory register to the working memory; it also regulates what moves from the working memory to the long-term memory for indefinite storage and what is retrieved. The central executive's ability to shuttle information is primarily influenced by our ability to focus and pay attention. The central executive regulates the flow of information we receive, adding or retrieving necessary information, storing potentially useful information in the long-term memory, and discarding the rest. The long-term memory is more complicated, and the amount of storage seems to be nearly unlimited, or large enough to store a lifetime worth of memories. It is likely that it organizes it in some way, linking it to other memories and processes so that the central executive can efficiently retrieve the information later.

It is believed that attention is extremely essential to the learning process. It is argued that when someone does not pay attention to something from the <https://assignbuster.com/information-processing-theory-essay-sample/>

start, they do not store it in their memory and will not remember it later on. The key to using this theory to improve education is to understand exactly how each component changes as the person develops. The sensory register becomes more acute with time (at least until one gets old). While the central executive becomes better at focusing the mind, information processing, suppressing irrelevant thoughts, and retrieving any appropriate information from long-term memory. The working memory becomes larger, more capable of holding different types of information, and able to automate certain tasks. Finally, the long-term memory refines the connections between existing memories and tacks on new ones with appropriate links.

The senses become more acute with time. Though newborns discriminate some tastes, smells, and sounds and perceive certain qualities of these things, like the direction of a sound source, other senses don't develop until later. For example, their vision is extremely low at birth and by their first year they have adult like vision. The central executive's ability to process information gets more powerful and refined with time. Children quickly gain the ability to distinguish between people and differentiate between most people and their primary caretakers. Their mind's ability to focus on tasks increases, attention also becomes more keyed to the task at hand.

Working memory also improves, its processing speed increasing and becoming more useful, some things becoming automatic, and the physical capabilities growing. Processing speed is the ability to shuffle and rearrange information. In addition to its natural growth, the brain finds little shortcut to making storing and figuring out similar problems easier, this automation also makes memory more efficient. But even though working memory becomes

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better with time the amount of information one can perceive is still limited. To effectively teach, it is important to teach new material in small amounts.

All of these understandings of the mind's capabilities and its evolution can be used to enhance the learning process for any individual. General recommendations include the minimization of distractions to improve a child's ability to focus, because as I mentioned before attention plays a large role in memory. When working with younger children, because they have shorter attention spans, try taking out only the items that will be used at the moment. Age-specific recommendations include modeling more concepts at younger ages so that their minds and memory expand at younger ages. Also increasing the use of different concepts as children age will expand their current, or nature capabilities. It is important to take under consideration a child's background, age, and knowledge base. It is believed that heredity and experience can influence intelligence and information processing. It is clear that their raw, initial abilities influence sensation and one's ability to process information. Meanwhile their environment can influence the knowledge base from which individuals can work. Parents play a large role in helping their child's capabilities, like remembering past events, their children become active participants in the conversation of past events.

Information processing theory provides a window into thinking and learning, examining the flow, processing, and recall of information. It is argued that cognitive capabilities improve with time, like a child's learning capabilities to an adult. Children have shorter attention spans, a smaller working memory capacity, and a smaller base to which they can relate new information, knowing this and teaching accordingly can improve many things. Practical

application of this theory can lead to more effective ways of teaching, with children becoming better able to retain and process information, and integrate that same information into their knowledge base; they can be effectively reused in the future!