Maximising Learning in a Church Service for Children

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This paper describes the Modal Model theory which explains the structures and processes of cognitive psychology, and, based on the theories explained, discusses methods to improve maximise learning in the environment of a church service for children.

The Modal Model is a well accepted theory that explains the cognitive structures and processes involved in the human learning. According to this Model, the main structures involved in learning are the Sensory Memory, The Short Term Memory (STM) or Working Memory and the Long Term Memory (LTM). Information and knowledge interacts with these structures mostly through the processes described as Attention, Perception, Rehearsal, Encoding, Retrieval and Response.

Information reaches the human cognitive system first through the Sensory Memory. An stimulus is sensed by the Sensory Memory and stored in the Sensory Registers. The auditory stimulus is stored in the ECHO register, and the visual stimulus is stored in the ICON register. According to Sperling (1960), the ICON register can hold from seven to nine pieces of information at once, and this information is only available for half of a second. His research also found that the ECHO register can only hold information for about three seconds, and both registers have a very limited processing [6]. This information sensed can be then transferred to the Working Memory.

The Working Memory holds the information for rehearsal and pattern recognition. The Working Memory can process from five to nine chunks of information, with the average being seven. These chunks can be of any size [4]. Further research also shows that the information held by the Working Memory is lost by interference other than by time [2] [5] This implies that continuous rehearsal and focused attention are important factors to structure and build knowledge.

The Working Memory is divided into Executive Control System, Articulatory Loop and Visual-Spatial Sketch Pad. The Executive Control System is responsible for allocating resources to the other two systems and selecting what will go to the Long Term Memory. The Articulatory Loop holds from two to four seconds of acoustic information and is responsible for Auditory Rehearsal while the Visual-Spatial Sketch Pad processes visual and spatial information. [1]

In addition, the Working Memory gets information from the LTM through retrieval. The processing of the information is done mostly in the Working Memory. It also stores information in the LTM after the processing is done. The Long Term Memory is virtually unlimited in capacity and the storage is considered to be permanent. The information is structured in a sophisticated manner that enables humans to perceive, categorise and solve problems.

The knowledge stored in the LTM is defined as being either Declarative (facts) or Procedural (skills). Research indicates that there are subcomponents of the Declarative memory. They are the Semantic memory, that stores factual information [7] and the Episodic memory, that stores information about important events in a person's life. Brown and Kulik claimed the existence of the Flashbulb memory [3], but multiple other researchers questioned this difference and suggested that Flashbulb memory is like the

Episodic memory, but rehearsed more often.

Many theories attempt to explain how the declarative knowledge is held by the LTM. The most commonly used framework used to understand how the knowledge is held in the LTM is the Schema theory. A Schema links an object or idea to a set of characteristics, and can be connected to other Schemata by common characteristics. By activating a Schema before presenting information, the Working Memory will be filled with background knowledge that will help to understand the information better.

The classroom considered in this paper is a church service for children. All examples are from a regular Hillsong Kids service. In this environment children usually spend about two hours with other children of the same or similar age and a few adults that supervise all activity and ensure a friendly environment. Some of these adults also teach the children during the appropriate time. Through the rest of this paper, they are referred to as leaders. Usually there are about twenty children and four leaders in a single service. The room is decorated with wall posters, lights and objects that are considered attractive to the children. The room also contains video games, board and ball games, drawing and painting materials, cushions and other equipment to provide the children with entertainment and an environment that matches their age and interests.

The service starts with free time, while the children play and talk with their peers and leaders. After the free time there is the praise and worship time when all children sing and jump while a band plays songs. After that there is the teaching time, followed by free time again while the children wait for parent pick-up. The teaching usually consists of a short video (around five minutes), followed by a related speech given by one of the leaders (twenty minutes in average).

The rest of this paper will focus on the teaching time, most specifically on the speech given, discussing some issues relevant to learning and elaborating on ways to achieve maximum learning.

In light of the cognitive theory explained earlier, it is possible to identify a number of issues that affect learning in this environment. The children's attention, the diversity or lack of background christian knowledge amongst the children, the complexity of the material taught and the way it is present are a few of these issues. This discussion will be focusing first on the attention and later on the way the knowledge presented can be meaningful or not to the children present in the service.

It is not useful to present knowledge to an audience that does not pay attention to what is being taught. Having the audience attention ensures a better probability that the contents being taught will reach the Working Memory with low interference, raising the chances of effective learning. Since the teaching happens in the same room where the children play games and engage in other activity, their Working Memory receives significant interference through visual stimuli, as they can see the games at all times. Often during the teaching they are thinking and discussing with their peers about which game they will play once the teaching finishes.

A reasonable solution would be to remove or hide any source of interference during the teaching time. Dividing the room, turning the video games off or covering them would diminish the interference from visual stimuli. In addition, an effort can be made by the teacher to present the information in a way that will be attractive to the children, making use of visual stimuli through videos, drawings, drama or interaction with the audience.

Once the teacher has the children's attention, another issue is how to present the information to the children in a way that will result in effective learning. Many factors contribute to the maximisation of the learning experience. This paper focuses on the amount of information given and how this information can be related to the learner's previous knowledge.

In regards to the amount of information given, based on the limited number of chunks of information

that the Working Memory can hold, efforts have to be made to present only a few big chunks of information instead of many small chunks of information at a time.

A very common example of many small chunks of information in a church setting is reading a passage from the Bible. Usually a short passage contains a considerable amount of words an concepts that are not completely meaningful to a child. In this case, each word is a chunk of information and sometimes more than one, as the word may not yet have a clear meaning to the child. Since the Working Memory cannot hold more than seven chunks of information at once (in average), trying to process more than that will not lead to effective learning.

Although the passage is usually explained in detail after it was read, often the leader who is teaching uses the same words present in the Bible to explain it, and often tries to explain every single concept from that passage in detail. A better approach would be to focus in only a few ideas and explain them in simple steps that relate to each other and relate to the previous knowledge and experience held by the child's LTM. By doing this, the knowledge acquired in each step can relate to the other steps and be connected, forming a rich Schemata.

In addition, when the concept or word is not completely meaningful to the child, the leader should explain it with words and ideas that have a meaning to the audience. When this is the case, the amount of information that depends on that new concept should be kept to a minimum to prevent an overload of capacity in the Working Memory.

In regards to how the biblical information presented can be related to the child, to achieve optimum learning the teacher must consider the circumstances in which the Bible text was written. Sometimes it was a letter to the people of a city that were experiencing something, or to a person that already had previous knowledge about the subject. By providing the child with the context of the passage before reading it, the leader can activate a Schema present in the child's LTM. This also means that the context must make sense to the child, otherwise there will be no Schema present in the child's LTM to be activated.

As an example, explaining that David wrote a specific Psalm while his kingdom was experiencing a war and he slept with someone else's woman and killed her husband will probably not activate the right Schema from the child's LTM as they never had this kind of experience. On the other hand, explaining the real situation together with something meaningful to the child will probably help. An example of something meaningful that relates to the real situation could be asking the child to imagine a moment where he or she had an argument with his or her parents and then instead of feeling bad about the argument made plans of revenge. This would probably activate a Schema that will help the Psalm to make more sense.

As demonstrated, a church service for children can be significantly challenging to the teacher. Nevertheless, most problems can be avoided by having a good understanding of the cognitive structures and processes involved in learning and by the efforts to apply this knowledge to change the environment in which the children learn and to prepare and present the information in a way that will be meaningful and attractive to them. By maximising the learning during the teaching time through the mechanisms presented in this paper, more time can be spent living the knowledge acquired and less time can be spent trying to explain complex concepts over and over again, sometimes with little or no learning.

References

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