Cognitive learning – educational psychology assignment

Psychology

Abstract Cognitive psychology has long been an integral part of psychology. It has a direct impact on how educator's look to improve the teaching and learning process. (Huitt 2006) Much research is done on how we process information. There have been numerous models created to help illustrate this process. Metacognition is also important to educators in it allows a learner to judge how well they are learning a particular subject. There are many ways that we process information. Theorists have developed models of information processing.

These models are a cornerstone for education. They provide teachers with understanding of how their students retain the subject matter they are being taught. Metacognition is also important in the learning process. This process is important to a student's learning process and teacher should help facilitate its use. Information processing is the most common theory of memory. Some of the first theorists developed their theories based on computers. Now cognitive psychologists use the computer as a metaphor for the human mental activity.

The basic model of information processing includes sensory memory, working memory, and long-term memory. (Woolfolk 2007) Below is a stage model of information processing developed by Atkinson and Shiffrin. (Huitt 2003) Sensory memory uses stimuli (i. e. sights, sounds, smells, etc.) from the environment around us and transforms it into information to help us make sense of them. The duration of sensory memory is very short usually only lasting a few seconds, but the capacity during that time is very large and more information is taken in than can be processed.

Sensory memory uses perception to interpret stimuli. Gestalt theorists believe that people take their perceptions and organize them into patterns or relationships. Since we would be overwhelmed if we had to process every stimulus we use attention to select stimuli and limit we will choose to process. Working memory takes the information from sensory memory and processes it further by combining it with knowledge from our long-term memory. There is a central executive in the working memory that helps us control attention, develop plans, retrieve, and integrate information.

Short-term memory is a little different than working memory in that it is only is for storage and not processing. Long-term memory is said " to be the goal of teaching. " (Woolfolk 2007) Information that is well learned is permanently stored in our long-term memory. There are three main types of knowledge stored in our long-term memory: declarative, procedural, and conditional. Declarative knowledge is verbal information. Procedural knowledge is knowing how to do something and conditional knowledge is knowing when and why to use declarative and procedural knowledge. Woolfolk 2007) Information processing is very important in the classroom. It is the job of the teacher to help their students' process information and hopefully have it reach their long-term memory. If something is important for a student to know the teacher must capture the student's attention. They can do this through the use of body language or vocal cues. Another option is to use handouts or other visual methods using the blackboard or overhead monitor. The teacher should help their students process the information they are giving them by presenting it in a logical order.

It is also helpful to start out with easier concepts and then move onto more complex concepts. Teachers can also help their students relate the information to their own experiences or connect it to something they have already learned. Some students remember things easier when they are given a code with the information. Such as making up a sentence or word using the first letters of the words in a list, i. e. Kids Prefer Cheese Over Fried Green Spinach (Kingdom, Phylum, Class, Order, Family, Genus, Species) or HOMES (Lake Huron, Lake Ontario, Lake Michigan, Lake Erie, Lake Superior).

A teacher should always review previous lesson to ensure that the students are processing the information. This can be done by incorporating information from previous lessons in new lessons or repeating important information in a variety of ways. (Huitt 2003) Metacognition is described by David Meichenbaum and his colleagues " as people's awareness of their own cognitive machinery and how the machinery works. " (Woolfolk 2007) This can also be defined as " knowledge about knowing and learning. " (Woolfolk 2007) Metacognition is the application of he three types of knowledge discussed previously: declarative, procedural, and conditional. There are three skills that are used in metacognition: planning, monitoring, and evaluating. Planning determines how much time will be spent on a task, what methods to use, what resources are needed, organization, what needs focused attention, etc. Monitoring is checking with yourself to see how you are doing. Ask yourself if it makes sense or have I studied enough. Evaluating is a judgment of the outcome. Metacognition is usually not required for tasks that are routine, but is very helpful when tasks are challenging.

As we continually use this process it will become second nature and most people aren't aware they are even using it. (Woolfolk 2007) Teachers can help their students use metacognition skills in the classroom. One way is to have them practice their monitoring skills by having students monitor each other. When teaching a series, have the students try and predict what will come next. Relating the information to their prior knowledge and experiences helps with metacognition too. Teachers should let their students know when it is okay to ask for help.

It is also up to the teacher to show students " how to transfer knowledge, attitudes, values, skills, to other situations and tasks. " (Huitt 1997) Understanding how students process information is a very important part of education. Teachers must understand what they can do to help their students learn and why they may be having troubles retaining knowledge. Cognitive psychology is a major influence on today's education. References Huitt, W. (1997). Metacognition. Educational Psychology Interactive. Valdosta, GA: Valdosta State University. Retrieved May 27, 2008 from: http://chiron. aldosta. edu/whuitt/col/cogsys/metacogn. html. Huitt, W. (2003). The information processing approach to cognition. Educational Psychology Interactive. Valdosta, GA: Valdosta State University. Retrieved May 27, 2008 from: http://chiron. valdosta. edu/whuitt/col/cogsys/infoproc. html Huitt, W. (2006). The cognitive system. Educational Psychology Interactive. Valdosta, GA: Valdosta State University. Retrieved May 27, 2008 from: http://chiron. valdosta. edu/whuitt/col/cogsys/cogsys. html Woolfolk, Anita. (2007). Educational Psychology. Tenth Edition. Boston: Allyn and Bacon.