

Lower and higher cognitive processes



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In cognitive psychology, lower and higher cognitive processes are cognitive processes that governs the way different abilities, for example, perception; attention; thinking; problem solving, are being used. However, each of the processes has their unique characteristics when applying the abilities. Lower cognitive process occurs in an automated manner with lower level of consciousness while higher cognitive process exercises mental activities voluntary with controlled awareness. Nevertheless, this essay aspires to investigate the differences of each process through the introspection and examples in order to help us understand how different each process can be.

The Use of Lower and Higher Cognitive Processes in Looking At Experiences

Our brain lays two very important processes that govern different abilities, the higher and lower cognitive processes, in fact both processes have different characteristics that can be explicitly observed, while higher cognitive process have a more general, non-automatic, mediated memory, controlled awareness and constructive thinking characteristic, whereas, lower cognitive process a more specific, involuntary automated and unconscious characteristic, thus, lower cognitive processes are instructed and run by higher cognitive processes, (Kalyuga, 2009; Fernyhough, 1996). Nevertheless Stuart-Hamilton (1995) analysed that both lower and higher cognitive processes are linked processes as lower cognitive process is a simple and basic process which governs basics task, for example, pattern recognition, thus, with the incorporated information from the lower cognitive process, the higher cognitive process is in charge of the collection of the information. At the same time, there are different levels of processes to

process the received stimuli from the variety of analysing of sensory aspects to semantic and theoretical processing (Eysenck, 1990).

In my past twenty-one years, I have experienced quite a number of events which are unforgettable while some were memorable and some were regrets and if there is a chance to turn the clock back to my young age, I will definitely change how I think and how I manage things. While advice was given from peers and matured people around me, I will end up deciding what I want the most and ignore what they have said when I was younger.

Nevertheless, there were times where I will look into these experiences and ask myself questions like why do I want to do that and how did I manage to do it. When I was in primary school, I hate to do assignments so almost everyday after school, I will hide my assignments somewhere, places where it cannot be seen, for example, under my bed, behind the cardboard or mixing them with other books. When my mum comes back from work, I will usually say that there were no assignments for the day and I will be allowed to play at the playground or with my toys. The following day, I will tell my teacher that I have forgotten to bring my assignments in order to get away and if the teacher asked again about the assignments, my answer will often be, ' I loss it and I can't find it anywhere', but the fact is, it is hidden somewhere. However, every half a year, my parents will receive a phone call from my teacher saying that I have not been hand up my assignments for the past few months and my mum will start searching my room. At my surprise, she is able to find most of the books and worksheets and I will be forced to finish all of them in one or two nights. This experience became a continuous cycle for few years of my primary school days.

Looking back at my lower cognitive process during my experience, what I want to do is just purely playing and because of that reason, I can even hid and lie to my teachers and parents about it so that I am free from any assignments. I presume that my brain has a certain perception about assignments which causes me to run away from it and what I want is just to play and enjoy myself. According to Margaret (2005), the utilization of perception is through receiving a stimuli by a person's senses while prior knowledge is retrieved to facilitate interpretation. Thus, perception involved physical items where beliefs and concepts are involved about the items and the outlines are being maintained by memory (Hamlyn 1994). Nonetheless, the features of both the stimuli and the prior knowledge are combined by perception (Margaret, 2005). Symbolic activity is also a classification of percetion as a symbol represents something other than itself, in my case, assignments symbolises boredom (Sekular & Blake, 1994). Perception is an active process as the perceiver needs to execute certain actions to perceive with the behaviour being steered by the process which motivates a higher level of activity, for example, when I receive my assignments, I will either choose to do it or hid it somewhere and not do it (Sekular & Blake, 1994). This gave me an idea of why I will dislike studying so much and even though my parents know about what happened numerous times, I will still continue to do hide my assignments and run away from it.

I start to look into the higher cognitive process about how it think during my experience for example, why will I choose to hid my assignments and what made me to have this thought in my mind, why do I hate studying and doing assignments so much and enjoy playing much more, why did I not think that

my teacher will call my parents to inform them about the situation.

According to Ruggiero (1998), thinking is engaging our minds whilst being in charge of its activity and it is a process that helps us to find an answer to a question, to come to a conclusion and to learn, however, consciousness is not often required to appear during the process of thinking. Making decisions and forming beliefs are part of the thinking where it helps us to eliminate our uncertainties while decision making helps us to reach our goals and our beliefs will determine the actions that are beneficial for us to reach the goal as belief allow us to believe very robustly about something which we determine that it is the truth (Baron, 2008). So for my experience, my belief has caused me to believe that assignments are boring and hiding it was the action that beneficial in order to escape from it.

Resistance to change and stereotyping are two things that are in the thinking processes which are very subtle. According to Ruggiero (1998), resistance to change tends to ignore new concepts or procedures in seeing and doing things even before testing them fairly, thus, one of the reasons is laziness. Indeed, advice and even punishments were given to me but because of laziness in me, I ignored and continued my old ways. Whereas for stereotyping, generalization of concepts, locations and people, it creates a good environment for presorted, predetermined, prejudged ideas as each has a compartment for storage with no judgment being placed on (Ruggiero, 1998). Maybe my brain has already stereotyped assignments as boring when I was in school which made it hard to change my way of thinking.

Due to my laziness, I end up scoring very badly for my Primary School Leaving Examination (PSLE) and I got into Normal Technical. When I was

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holding on to my result slip, I was very upset, angry with myself and I really regretted for not studying hard. My family will regularly have lunch with my parents' friends on Sundays and I will naturally focus my attention on what they talking about and also listening and playing with the other children. However, they will often talk about their children's study and their results, so when I hear anything about study I will fully focus on what they were saying while ignoring others. And when it was about the PSLE and what school their child got in, I felt very embarrass, I felt that I let my parents down and I caused them to feel embarrass when they talk about me so I will walk away and do something else. During this period, I loss my confidence is doing things and I had a low self-esteem which caused me to think that I am not as smart as anyone around me. But as the time goes by and I grew older, I start to learn to cope with my own thoughts and not judging myself on who I am according to how smart I am academically and understanding that I am good with other things. I was even determined to do my O levels and send overseas for two years to complete United Kingdom's General Certificate of Secondary Education (GCSE) and I scored fairly well.

I was surprise on how I can divide my attention to focused to what the adults were talking while I play with other kids and when I hear about PSLE results, I am able to focus on what the adults have to say and unconsciously ignoring any other messages around the environment. I believe that it is caused by the sensitivity level about the topic which causes the division of my attention and what I choose to focus on. According to Johnson and Proctor (2004), the function of attention helps us to be aware and conscious towards presented messages or objects and also choosing the actions according to the

messages or objects. According to Margaret (2005), divided attention is one of the processes of attention which helped us react appropriately to each thing while paying attention concurrently to a few things at the same time, for example, watching television and understanding what is going on while having dinner and knowing what food it is while putting into the mouth. Hence, divided attention uses the split-span technique which breaks two full messages into two short messages that the memory span can register the information without rehearsing into the individual ears (Johnson & Proctor, 2004). While selective attention is another process which overlooks the other messages while focusing on just one message and selective attention apply dichotic listening, a technique which the individual side of the ear receive two different type of messages (Johnson & Proctor, 2004). Through reading these, it made me understand how I can focus on a few conversations at the same time and suddenly when the topic is on studies, I will focus on that conversation while ignoring the others.

I look at the higher cognitive process in my experience, I tried to solve the problem from being unable to study and having low confidence to picking up myself and trying hard to study to scored during the GCSE. According Bransford and Stein (1993), the problem solving process has been described as a cycle that contains different phases but it is not required to be arranged in sequence, the problem solver must; 1) discover and be aware of the problem; 2) mentally classify the problem; 3) come out with a solution idea; 4) information rearranging of the problem; 5) solve the problem through designation of information though the psychological and the physical; 6) keep close observation of the process; 7) check for accuracy of the solution

that is brought up. There are two different classification of problems; well-defined and ill-defined (Davidson and Sternberg, 2003). Well-defined problems are problems that provide a distinct direction towards finding the solution for is one that is based on the given information, for example, calculating the price for each person from a receipt with a friend while the amount is stated (Davidson and Sternberg, 2003). However, ill-defined problems are problems that does not provides a distinct direction towards finding the solution and in order to make ill-defined problems observable, significant work of gather of information is need, hence, it is possible to generate a number of correct solutions from the generation of solutions by the ill-defined whereas well-defined problems can only generate one solution (Davidson and Sternberg, 2003). In my experience, learning how to overcome my emotional thoughts and not judging myself, are ill-defined problems that I had to find a solution to them in order for me to start a fresh. Success problem solving requires one to be well-versed in the field of study of the particular subject or issue as well as being a competent thinker, however having only prior knowledge does not ensure that the solution will be found as the answers are usually unfamiliar and foreign to the problem solver, whereas thinking is required, in partnership with the prior knowledge, to help one to apply the known knowledge to the context of the problem (Ruggiero, 1998). Indeed, I gain success in starting fresh as a new person after I have grown older as I am able to think deeper and better and combine what I have learnt to solve the problem of me judging myself according to my academic level.

In conclusion, the lower and higher cognitive process are two different cognitive processes which are linked processes that governs different things which helps us in daily activity like, thinking, perception, attention and problem solving. Through my introspection, I realised that my attention and perception which are part of the lower cognitive process, are both were exercised automatically and unconsciously occurring. However, when I looked into the higher cognitive process, I am required to exercise concrete thinking in order to come out with solutions to solve my problems and the think for ways to run away from my assignments as solutions and ideas will necessitate mental activity.