

# THE USE OF VISUAL AUDITORY SIMULATION TECHNIQUE (VASTECH) IN PROMOTING ON-TASK BEHAVIOUR OF CHILDREN: A CONCEPTUAL SHARING

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*Learning requires all learners to pay attention to what they are learning. It is therefore particularly important for learners to be on-task whenever learning tasks are performed (Ormrod, 2005). Young children with inattention problems will find difficulty in concentrating on a task, do not finish what they start, do not listen and always lose things (Lerner, 2003). Children with special needs, are especially prone to lack of attention span and thus are found to be off-task at most time during the process of learning. The objectives of this research are: 1) To develop a courseware using visual audio simulation technique that incorporates multimedia flash to systematically foster the attention for normal (3 – 6 years chronological) and special children (7 – 12 years chronological); and 2) To ascertain the effectiveness of Visual Audio Simulation Technique in promoting on-task behaviour of normal (3 – 6 years chronological) and special children (7 – 12 years chronological). This research adopts both the quantitative and qualitative approaches by using a visual audio simulation technique in promoting the on-task behaviour of 50 normal and special children. The frequency of on-task behaviour before and after the intervention will be recorded. The findings of this research have yet to be obtained.*

**Keywords:** Visual auditory simulation, on-task behaviour, multimedia flash

The ability to attend and stay on task is critical to our ability to function within society. It is therefore particularly important for learners to be on-task whenever learning tasks are performed (Ormrod, 2005). No learning can occur unless the learner is first able to focus on the relevant aspects of the task or concept and to focus on that long enough to process the information, giving it meaning and making it usable. For children, the inability to pay attention and stay on task while learning new skills and information can be challenging.

Young children with inattention problems will find difficulty in concentrating on a task, do not finish what they start, do not listen and always lose things (Lerner, 2003). Students with mental retardation, learning disabilities, ADHD, or emotional or behavioral disorders, as well as other low-achieving children, frequently exhibit problems with attention, or one or more of its component, as one of the defining characteristics of their disability (Krupski, 1980, 1986; Richard, Samuels, Turnure, & Ysseldyke, 1990).

Children who demonstrate high level of distractibility are allowing their energy to dissipate away non-meaningfully. The short term solution is to use medication. However, in the long run, children, including the special needs ought to be trained in sustaining attention. On-Task Behavior in this study is defined as the successful completion of a task or tasks given by the researcher, for example, a drawing task, body exercise and so on.

## Information Processing Approaches

Information processing researchers have studied how human beings collect, interpret, store and modify information received from the environment and retrieved from their own stored information. It is based on the premise that cognition is a highly interactive internalized process which departs from the perspectives of the constructivists and behaviorists. The critical factors influencing the success of learning include the learners' selection of stimuli from all the available environmental stimuli and the process they use to give meaning to those environmental stimuli.

A variety of functional models and hypotheses have resulted from this aspect of the complex process involved in cognition. There are three primary components of cognitive functions models (Reid, Hresko, & Swanson, 1996; Swanson, 1987; Swanson & Cooney, 1991), namely structural components, strategic control components and executive control functions components.

The structural components of the cognitive model include the sensory register, the immediate memory (short-term and working memories), and the long-term storage or memory. While the strategic control components include functions or strategies for completing specific tasks. They contain attention, perception and the storage and retrieval strategies used to transform information so that it is useful in the next step of the processing. The executive control functions would carry out a variety of monitoring activities, evaluating the effectiveness of cognitive processing, directing the flow of information and allocating resources.

The relationship of the structural, strategic and executive control functions to the processing of environmental stimuli or information is illustrated in the Model of Cognitive Processing (Figure 1).

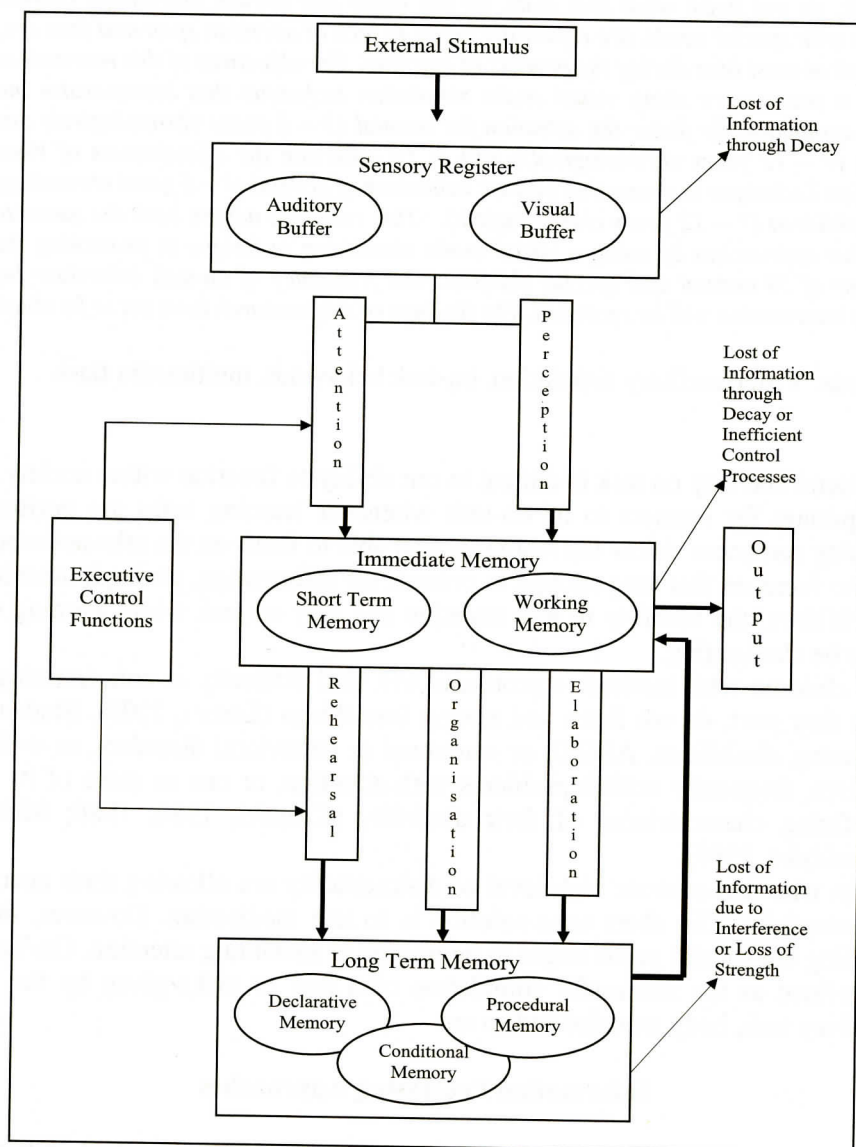


Figure 1. Model of cognitive processing as proposed by Reid, Hresko, and Swanson (1996)



## **Attention as Cognitive Process**

Attention is an integral part of a cognitive process. Deficiencies and inefficiencies in attention create problems in learning and everyday functioning for many learners with disabilities. However, difficulties in learning are more likely caused by a fundamental limitation in the cognitive functioning as a system than by a deficit in any single function such as attention (Krupski, 1986). However, Krupski (1981) further asserted that the ability to attend or the quality of that attention is affected by the interaction of three variables: the child, the setting and the task. Thus, training attention seems to depend largely on the setting and task while recognizing the disabilities remains a constant factor which is important in the effort.

The nature of any disabilities in children such as mental retardation, learning disabilities, ADHD, or emotional or behavioral disorders, is important to consider, because the conditions frequently reduce the effectiveness of attending behaviors. On the other hand, the more structured the demands and the setting, the more difficult it is for any child to respond with appropriate level of attention. And when evaluating the task demands, determining to what extent the task requires voluntary attention is important. Krupski's work (1980, 1981) indicated that the more voluntary the attention demands, the more effort the learner must exert to focus attention. In short, the more strongly the task draws the attention of the learner, the less the individual has to consciously pay attention and the easier it is to sustain attention.

### **Purpose of the Study**

As of today, there is hardly any systematic and step-by-step approach to guide learners in fostering their attention in accordance to their mental ability. The purpose of this study is to assist the normal (3-6 years chronological) and special (7 - 12 years chronological or 3-6 years mental age) children in fostering their attention so as to promote on-task behaviour during the process of learning.

### **Objectives of the Study**

This study has the following objectives:

1. To develop a courseware using visual audio simulation technique that incorporates multimedia flash to systematically foster the attention for normal (3 – 6 years chronological) and special children (7 – 12 years chronological) - 1st Phase;
2. To ascertain the effectiveness of Visual Audio Simulation Technique in promoting on-task behaviour of normal (3 – 6 years chronological) and special children (7 – 12 years chronological) – 2nd Phase.

### **Methodology**

#### **Research Design**

This study adopts both the quantitative and the qualitative approaches. The quantitative approach involves the quasi experimental study, while the qualitative approach will be on observation and interview.

#### **Sample**

A total of 50 mainstream children, 3 – 6 years chronological of age and special children 7 – 12 years chronological of age constituted the sample for this study.

## **Outcome Measures**

The frequency of on-task behavior before and after the intervention will be recorded.

## **Treatment: Visual and Auditory Simulation Technique (VASTech) for Children**

The ability of computers to deliver information in multiple forms and presentation styles makes them an attractive resource for delivering instruction to children who have different skill levels and learning styles.

Multimedia is used to simulate reality, through video and audio streams, to produce a sense of learning "in context." This may be especially important in skill-training environments, when learning in an actual cockpit or surgical operating room would be unsafe and costly. In more academic domains, simulations can give students the feel of an authentic experience, and both situated learning and anchored learning approaches have attempted to capitalize on this advantage of multimedia presentation.

Sound effects and music in general help simulated environments seem more authentic, and may be helpful for situated learning and anchored instruction, thus encouraging learners to be on-task. In summary, the features of Visual Simulation Technique include:

- a. Colorful
- b. Attractiveness
- c. Animation
- d. Context of simulation
- e. A series of easy-to-use 20 activities structured in the form of concrete stimuli (e.g., butterfly in the garden, animal in the farm etc.)
- f. The activities would exist in 3 modules: 1 module for beginner, 1 module for intermediate learners and 1 module for advanced learners
- g. The activities would be set with different time, ranging from 1 – 10 minutes
- h. The duration for each activity will be set in an incremental basis, which means that Activity 1 will last for 1 minute, activity 2 will last for 2 minutes, activity 3 will last for 3 minutes
- i. The purpose of setting the short time frame in an incremental basis is to allow gradual and systematic training of enhancing learners' attention while performing the activities. Also, researchers in the area of attention have relied quite heavily on speeded task.

## **Conclusion**

For this research, the researchers are in the process of developing the multimedia software consisting of three modules, each having five activities. Therefore, findings have yet to be ascertained. It is hoped that this software can provide long lasting effect for training the child to be physically and mentally engaged in performing the tasks.

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