Globalization and Special Needs Education

EDITED BY:
THEO AJOBIEWE (Ph.D)
PETER I. OSUORJI (Ph.D)

National Centre for Exceptional Children

Globalization
and
Special Needs Education

Edited by:

Theo Ajobiewe (Ph.D)

Peter I. Osuorji (Ph.D)

GLOBALIZATION AND SPECIAL NEEDS EDUCATION

Edited by:

- Theo Ajobiewe (Ph.D)
- Peter I. Osuorji (Ph.D)

Published in June, 2011

ISBN: 978-31064-2-4

Published and Bound in Nigeria by:
Glory -Land Publishing Company.
66, Gbadebo Street,
Mokola, Ibadan.
Tel: 08035830802, 07031051956
E-mail: emman_20078@yahoo.com

TABLE OF CONTENTS

CHAPTER THREE

An Appraisal of the Applications of Cognitive Learning Theories in the Management of Students with Learning Disabilities

LAZARUS, KELECHI U. (Ph.D)

Introduction

The United States Department of Education, (2005b) defined specific learning disabilities as a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, mental retardation, emotional disturbance, or environmental, cultural, or economic disadvantages. Likewise, Keller (2005) stated that learning disabilities is a neurological disorder that causes difficulty in organising information received, remembering them, and expressing information and therefore affects a person's basic function such as reading, writing, comprehension, and reasoning.

Mba (1995), Lerner (1997), and Heward (2003), opined that criteria which must be used during the diagnosis of learning disability are:

a) There must be evidence of an inability to achieve at the same level with one's age mates within the same potential ability level. This meant that the child will perform below his/her age level and also perform at a pace, lower than his/her ability level.
b) There must be a severe discrepancy between achievement and intellectual ability in one or more of the basic school subjects such as oral expression, listening comprehension, writing, reading skills, reading comprehension, mathematics calculation and mathematics reasoning.

Lerner (1997) observed that students with learning disabilities experience many problems. They can range from mild to severe, and they can interfere with mastering many of the subjects of the secondary curriculum. In the same vein, Smith (2007) identified some common characteristics of students with learning disabilities as: holding negative attributions, being non-strategic, being unable to generalize or transfer learning, processing information inefficiently or incorrectly and possessing poor social skills. Specifically, Heward (2003) maintained that the fundamental, defining characteristic of students with learning disabilities is specific and significant deficiency in the presence of adequate overall intelligence.

In order to assist students with learning disabilities improve in their classroom behaviour and academic performance, experts in the field of learning disabilities seek to understand the foundations of learning disabilities as well as the ideas about how and why individuals experience changes in their behaviour. According to Ezewu and Okoye (1982)

learning is a process by which behaviour changes as a result of experience. It is this focus o the process of learning that takes us into the realm of learning theories – ideas about how o why change occurs. By definition, Nelson-Jones (2001) stated that:

> *"a theory is a formulation of observed phenomena which have been verified to some extent. A criterion of power of a theory is the extent to which it generates predictions which are confirmed when relevant empirical data are collected. The more a theory receives confirmation or verification the more accurate it is. Facts strengthen rather than replace theories (pg.6)."*

Learner (1997) maintained that learning theories enable educators to sort, evaluate the bewildering deluge of new materials, techniques, machines, gadgets, methods, and media confronting the educator. She reaffirms that learning theories serve as a guide for action to educators. They clarify and structure thoughts as well as create a catalyst for further research in learning. Thus, a specialist in the field of learning disabilities who operates without asking of what is happening in the field; without some model of action or without some assumptions about learning disabilities is an unscientific learning disabilities specialist, likely to do more harm than good.

Some significant learning theories that experts in the field of learning disabilities have adopted with students with learning disabilities include the medical approaches, the diagnostic-remedial approaches, maturational theory, behaviourism, constructivism, cognitive learning and social learning to mention a few. The medical approaches for instance, presume that learning disabilities are neurological problems, that may result from different ultimate causes such as genetic or biochemical (Hallahan, Kauffman & Lloyd, 1999). According to the proponents of the diagnostic-remedial approaches the focus is on identifying correlates, rather than causes of problems. By correlates, they meant associated cognitive and behavioural problems which are sometimes called psychological processes. After identifying these problems, they believe that the next step is to remediate them. The maturational theory on its own stresses the natural progression of the child's growth and the sequential development of cognitive abilities. The proponents of this theory emphasize that a state of readiness is needed for the child to acquire certain abilities. Thus, forcing a child to learn before that state of readiness has been reached can lead to academic failure (de Hirsch, Jansky & Langford, 1996).

Behaviourists such as Palvov, Watson, Skinner, and Thorndike believe that a person is born as a "blank slate" with no inherited tendency to behave one way or another. Therefore, the educators' role is to arrange the environment to elicit the desired response from the students. Contructivists in their own perspective base their theory on the premise that individuals construct their own perspective of the world, through individual experiences and schema (Schuman, 1996). Similarly, social learning theorists opine that learning situations should be based on social interactions and observation in social contexts while cognitive theorists such as Kohler, Piaget, Ausubel, and Gagne, consider attention and memory as ways of processing information during learning (Ormrod, 2003).

This paper therefore, hopes to undertake an evaluation of cognitive learning theory with an intention to identify its strengths and weaknesses as well as highlight its educational implications.

Cognitive Theory: History of and Basic Assumptions

The ideas of early theorists such as Jean Piaget, Robert M Gagne, Edward Tolman and Lev Vygotsky played major role in the development of cognitivism. Gestalt psychologists like Kohler emphasized the importance of organizational processes of perception, learning, and problem solving. They believed that individuals were predisposed to organize information in particular ways (Ormrod, 1999). Jean Piaget made significant contribution to cognitive learning theory. Piaget acknowledged that environment played a role but he focused his attention to the changes that took place in the internal cognitive structure. In fact, Piaget was instrumental in identifying four stages of mental growth, namely sensorimotor, preoperational, concrete operational and formal operational (Tennant, 1997). Jerome Bruner, another researcher, focused on how mental processes could be connected to teaching and he emphasized that learning took place through discovery (Tennant, 1997). Robert M Gagne was instrumental in identifying eight forms of learning (Tennant, 1997). Edward Tolman proposed a theory that had a cognitive flair. He was a behaviorist but valued internal mental phenomena in his explanations of how learning occurs. Based on his research of rats, Tolman proposed that rats and other organisms develop cognitive maps of their environments. They learn where different parts of the environment are situated in relation to one another. The concept of a cognitive map also called a mental map has continued to be a focus of research (Ormrod, 1999). The idea of scaffolding learning comes from Vygotsky's zone of proximal development theory. Scaffolding refers to learning situations in which adults and other more competent individuals provide some form of guidance or structure that enables students to engage in learning activities within their zone of proximal development (Ormrod, 1999).

Lerner (1997) and Ormrod (2003) noted that cognitive theorists base their ideas on cognitive psychology which addresses such mental phenomena as memory, attention, concept learning, problem solving and reasoning. These scholars enumerated some of the basic assumptions that underlie the cognitive learning theory to include the following:

- Cognitive processes influence the nature of what is learned. People learn new information more easily when they relate it to something they already know. Similarly, people learn several pieces of new information more easily when they relate to an overall organizational structure.
- People are selective about what they process and learn. Students encounter a great deal of new information everyday. But they must make choices as to which pieces of information are most important.
- Learners construct meanings by themselves; they do not derive it directly from the environment. Individuals take many separate pieces of information and use them to create an understanding or interpretation of the world around them.

- Prior knowledge and beliefs play a major role in the meanings people construct. Advocators of cognitivism view learning as a cumulative process that depends on prior knowledge and past experiences.
- People are actively involved in their own learning. This means that people do not simply "absorb" knowledge from their environment. Therefore, students must get involved, committed and interested in their learning.
- Learning is strategic. Therefore, people must apply strategies in order to become successful learners. Based on this assumption, cognitivists posit that students with learning disabilities who perform poorly in their studies can excel in them if teachers teach these students how to use learning strategies.
- Learning requires automaticity in some skills. Certain knowledge must become automatic, almost subconscious, requiring little effort. For example, remembering words when speaking, inserting the proper syntactic word form in sentences, and remembering words by sight when reading are all automatic skills (Ormrod, 2003).

Evidence of Effectiveness of Cognitive Theories

Certain contemporary scholars such as Flavell (1977), Case, Haris and Graham (1992), Baumann, Russell, and Jones (1992); Wood, Rosenberg, Carren, (1993); Deshler, Ellis and Lenz (1996), and Mastropieri and Scruggs (2000) have made a much-needed contribution to understand how cognitive theory works. Notable among the techniques recommended by these scholars are: metacogntion, think-aloud, cognitive behaviour modification, mnemonic instruction, learning strategies instruction and scaffolded instruction to mention a few.

Metacognition as posited by Flavell (1977) emphasize a higher order thinking which involves active control over the cognitive processes engaged in learning. Activities such as planning how to approach a given learning task, monitoring comprehension, and evaluating progress toward the completion of a task are metacognitive in nature. Studies conducted by Flavell (1977) and other researchers show that increases in learning outcomes have followed direct instruction in metacognitive strategies.

Think-aloud is described as a "stream-of-consciousness disclosure of thought processes" (Cohen, 1996, p.7). In the past three decades, the think-aloud procedure has increased in popularity among researchers as a data collection instrument in areas of research that espouse a cognitive perspective such as problem solving and second language learning (Ericson and Simon, 1987). A study by Baumann, Russell, and Jones (1992) investigated the effectiveness of a think-aloud strategy on the reading comprehension of fourth grade students. Students with disabilities appear to have been excluded from the study. Although the focus of the study was on using the think-aloud procedure, the experimental design included one comparison group of students using Directed Reading Thinking Activity (DRTA) and a control group that was taught via a teacher-led guided reading process that researchers called Directed Reading Activity (DRA). The study incorporated a pre-test-post-test design with the type of intervention as the independent variable and scores from reading assessment tasks (for example, cloze exercises, comprehension monitoring activities and error detection tasks) along with qualitative interview data as the dependent variable. Results of the study indicated that both the Think-

Aloud strategy and the DRTA strategy were better at increasing students' reading comprehension skills than the traditional teacher-led method of teaching reading. However, the data were not conclusive as to which of the strategies were the most successful. On some measures it appeared that students in the Think-Aloud group had greater comprehension skills while on other measures it appeared that students in the DRTA group had better comprehension skills.

Furthermore, advocates of cognitive behaviour modification maintain that there should be an integration of cognitive and behavioural approaches. They adopt an ecletic approach to theory by adopting whatever aspects of cognitive behavioural literature that suit. Leading proponents such as Meichenbaum (1977) drew from sources as diverse as the works of B. F. Skinner and L.S. Vygotsky. Examples of cognitive behaviour modification techniques are self instruction, self monitoring and self-evaluating (Hallahan, Kauffman, 1994). Case, Harris, and Graham (1992) taught fifth- and sixth grade pupils with learning disabilities to use a five-step self-instructional strategy to solve addition and subtraction word problems. In a related study, nine elementary students with learning disabilities used tape-recorded cues with their own voices to remind them of a 10-step problem solving strategy for math problem (Wood, Rosenberg, Carran, 1993). The students continued to use the self instructional strategy to solve problems when the tape-recorded cues were withdrawn in the study's final phase.

Another cognitive approach that focuses on how students learn rather than on what they learn is the learning strategies instruction. Lerner (1997) noted that students learn to use strategies that enable them control their learning. She identified the following as examples of learning strategies for students with learning disabilities: verbal rehearsal, organization, predicting and monitoring, using prior knowledge and self questioning. The findings of Deshler, Ellis and Lenz (1996) reveal marked improvement in students' learning outcomes after receiving instruction in learning strategies instruction. These researchers have field-tested, and validated a learning strategies curriculum for adolescents with learning disabilities. In the opinion of Baker (1989) the more students know about effective learning strategies, the greater their metacognitive awareness and the higher their classroom achievement is likely to be.

During the 1980's, reading comprehension research involving students with learning disabilities was based on the notion that these students were inactive learners with meta cognitive deficits, and therefore, could benefit greatly from training in such strategies as activating prior knowledge and organising and summarising text. Many variations of cognitively based strategies were designed and some included components of previously described interventions along with self questioning components. Self questioning and self-monitoring studies included teaching students to:

a) Activate their prior knowledge (for example, Sachs, 1984),
b) Summarise information (for example, Jenkins, Heliotis, Stein & Haynes, 1987),
c) Redirect attributions (for example, Borkowski, Weyhing & Carr, 1988),
d) Monitor performance (for example, Graves, 1986),
e) use elaborative interrogation (for example, Scruggs, Mastropieri & Sullivan, 1994),
f) use text structure-based strategies (for example, Bakken, 1995), and

g) Implement multicomponent training packages (for example, Schumaker, Deshler, Alley, Warner & Denton, 1982).

Questioning students or training students in the use of questioning strategies yielded a large overall effect size (M=1.33) in the Mastropieri, Scruggs, Bakken and Whedon (1996) data set. The key features in all of these studies include teaching students to stop and question themselves before, during or upon completion of reading to promote understanding of the printed material.

Similarly, mnemonic instruction also a cognitive training strategy is used to help students with memory problems remember curriculum content. The teacher transforms abstract information into a concrete picture, which depicts the material in a more meaningful way. By making abstract information more concrete, students are better able to remember content in a variety of subjects such as English, History, Science and Foreign Languages (Scruggs & Mastropieri, 1992). The efforts of Mastropieri and Scruggs (2000) have provided elaborate evidence on the effectiveness of mnemonic strategies as means of improving learning and retention of verbal materials by students with learning disabilities. For instance, Mastropieri, Scruggs, Bakken, and Whedon (1996) reported a high mean effect size of 1.28 for mnemonic illustrations in text. Mastropieri, Scruggs and Fulk (1990) demonstrated that students with learning disabilities using the key word method out perform controls on comprehension tasks (comprehending words in novel contexts) as well as on recall tasks.

Scaffolded instruction is a cognitive approach that enables the teacher to provide temporary structure or support while the students are learning a task; the support is gradually removed as the students are able to perform the task independently. Hallahan and Kauffman (1994) noted that scaffolded instruction is supported by Vygotsky's theory that states that children learn from their elders in ways that are similar to apprentices who learn their craft from masters. An example of a scaffolded discussion technique used to teach multiple comprehension strategies is reciprocal teaching which was developed by Palincsar and Brown in 1984. It is built on four strategies that good readers use to comprehend text namely, predicting, questioning, clarifying and summarising. Reciprocal teaching focuses on a dialogue between the teacher and students. Teacher scaffolding provides readers the support they need in order to become successful at using four strategies. Students view the teacher modelling each of the four strategies, try the strategies out for themselves in a supported environment, and work independently using the strategies to comprehend text.

In their initial study, Palincsar and Brown (1984) trained a group of seventh-grade poor readers in reading comprehension. The seventh grades' reading scores were about 2.5 years below grade level. They found that students who were taught the four learning strategies and who were involved in the reciprocal teaching routine, made significant gains in comprehension in a relatively short time frame. Students who scored around thirty percent on a comprehension assessment scored seventy to eighty percent after just fifteen to twenty days of instruction using reciprocal teaching (Palincsar & Brown, 1984).

Several cognitive theories place considerable emphasis on how people process the information they receive from the environment. Information processing approaches traces the flow of information, during the learning process from initial reception of information, through a processing function, and then to action. In the human learning system, there are

inputs (such as auditory stimuli), processing functions (cognitive processes such as associations, thinking, memory and decision making), and output (actions and behaviours). Thus, students are actively processing, storing and retrieving information while teaching involves helping learners to develop information processing skills and applying them to systematically mastering the curriculum (Lerner, 1997).

General Educational Implications of Cognitive Theories

Cognitive learning theories have numerous implications for classroom use. Teachers must not only consider what they want students to learn but also how students can most effectively learn it. Teachers should assist their students to make wise decisions about the pieces of information they choose to attend to, process, and save. People organize the things they learn. Therefore, teachers can facilitate students' learning by presenting information in an organized manner. This organization should reflect students' previous knowledge and show how one thing relates to the other (that is, helping students understand and make corrections). During the learning process teachers must ensure that students are attentive and the lesson must be planned to initially spark the attention of the student. Teachers should frequently monitor students' understanding by asking questions, encouraging dialogue, and listening carefully to students' ideas and explanations.

Also, since what students learn depends on the experiences they bring to the learning situation, teachers should start with what students know, and help them to build and to link new information. Teachers should show how new ideas relate to previous learning. To maintain students' motivation teachers must make learning enjoyable and show pleasure in their students' excesses. Moreover, teachers must endeavour to teach these students when and where to use learning strategies.

Learning difficulties often indicate ineffective or inappropriate cognitive processes, especially for children with learning disabilities, who tend to process information less effectively. Therefore, teachers need to be aware that all students are trying to learn something, as well as what they are trying to learn. Teachers should provide more practice and repetition for students with learning disabilities to enable them to develop automatic responses.

Merits and Weaknesses of Cognitive Theory

Highlighting the merits of cognitivism, scholars in the field remark that metacognition which is a cognitive approach, helps students to develop a level of independence in reasoning. It also assists students to become aware that there are a number of other ways to carry out an activity. Similarly, mnemonics makes remembering things less cumbersome as it is a helper for memory. Cognitive behaviour modification empowers individuals to play active role in their learning and discourages over dependence on the teacher. Thus, learning is made more interesting, fun-filled, and tension free as individuals apply the principles and techniques of cognitive theory of learning (Hallahan, Kauffman & Lloyd, 1999).

Obviously, the goal of cognitivism is to develop capacity and skills to learn better. Learners get to know how to do a task the same way to enable consistency. Ertmer and Newby (1993) match learning theories with the content to be learned. They emphasize that

cognitive strategies are useful in teaching problem-solving tactics where defined facts and rules are applied in unfamiliar situations (knowing how).

However, Mergel (1998) commented that one major weakness of the cognitive theory of learning is that the learner learns a way to accomplish a task, but it may not be the best way, or suited to the learner or the situation. For example, logging onto the internet on one computer may not be the same as logging in on another computer. Also, Hallahan, Kauffman and Lloyd (1999) asserted that it may be very tasking to teach a child with learning disabilities some cognitive processes because these should be natural practices.

Conclusion

According to cognitive learning theory, a student actively learns when he makes an effort to organize, store and find relationship between old and new information, scripts and schema. In simple words, cognitive learning theory is about how information is processed by the mind. Cognitivism focuses on the inner mental activities – opening the "black box" of the human mind is valuable and necessary for understanding how people learn. Mental processes such as thinking, memory, knowing, and problem-solving need to be explored. Knowledge can be seen as schema or symbolic mental constructions. Learning is defined as change in a learner's schemata. Cognitivism is currently the predominant perspective within which human learning is described and explained. Contemporary cognitivism emphasizes mental processes and proposes that many aspects of learning may be unique to the humam species. Cognitivism has affected educational theory by emphasizing the role of the teacher in terms of the instructor's effectiveness of presentation of instructional material in a manner that facilitates students' learning.

Broadly, cognitive theory is interested in how people understand material, and thus in; aptitude and capacity to learn (thus fringing onto psychometrics and testing), and learning styles. It is also the basis of the educational approach known as constructivism, which emphasises the role of the learner in constructing his own view or model of the material and what helps with that. Thus, the application of cognitivism in learning is therefore indispensable.

References

Baker, B. I. (1989). *Parent Training and Developmental Disabilities.* Washington, D.C: American Association on Mental Retardation.

Bakken, J. P. (1995). Reading Comprehension of Expository Science Material and Students with Disabilities: A Comparison of Strategies. Ph.D. Thesis. Dept. of Educational Studies. Purdue University, West Lafayette, IN.

Baumaan, J. R., Russell, N. & Jones, L. A. (1992.) Effects of Think-aloud Instruction on Elementary Students' Comprehension Abilities. *Journal of Reading Behavior,* 24 (2) 143-172.

Borkowski, J. G., Weyhing, R. S. & Carr, M. (1988). Effects of Attribution Retraining on Strategy-based Reading Comprehension in Learning-Disabled Students. *Journal of Educational Psychology,* 80, 46-53.

Case, L. P., Harris, K. R. & Graham, S. (1992). Improving the Mathematical Problem-solving Skills of Students with

Learning Disabilities. *The Journal of Special Education*, 26 (1) 1-9.

Cohen, A. D. (1996). Verbal Reports as a Source of Insights into Second Language Learner Strategies. *Applied Language Learning*, 7 (1&2) 5-24.

de Hirsch, L., Jansky, J., & Langford, W. (1996). *Predicting Reading Failure.*_New York: Harper and Row.

Deshler, D.D., Ellis, E.S. & Lenz, B. K, (1996). *Teaching Adolescents With Learning Disabilities: Strategies and Methods.* (2nd ed.). Enver, CO: Love Publishing Co.

Ericson, K. A., & Simon, H. A. (1987). Verbal Reports on Thinking. In C. Faerch & G. Kaspern (Eds.) *Introspection in Second Language Research* (pp. 24-53). Clevedon: Multilingual Matters.

Ertmer. P. A., & Newby, T. J. (1993). Behaviourism, Cognitivism, Constructivism: Comparing Critical Features from an Instructional Design Perspective. *Performance Improvement Quarterly*, 69 (4) 50-70.

Ezewu, E. E., & Okoye, N. N. (1982). *Principles and Practice of Continuous Assessment.* Ibadan: Evans Brothers Nig. Ltd.

Flavell, J. H. (1977). *Cognitive Development.* Englewood Cliffs, N J, Prentice Hall.

Graves. A. W. (1986). Effects of Direct Instruction and Metacomprehension Training on Finding Main Idea. *Learning Disabilities Research*, 1, 90-100.

Hallahan, D. P., & Kauffman, J. M (1994). *Exceptional children: introduction to special education.* (6th ed.). Boston: Allyn and Bacon.

Hallahan, D. P, Kauffman, J. M, & Lloyd, J. W. (1996). *Introduction to learning disabilities.* (2nd ed.). Needham heights, MA: Allyn and Bacon.

Heward, W. L. (2003). *Exceptional Children: An introduction to Special Education.* Upper Saddle River, N J: Merrill/Prentice-Hall.

Jenkins, J. R., Heliotis, J. D., Stein, M. L, & Haynes, M. C. (1987). Improving Reading Comprehension by Using Paragraph Restatement. *Exceptional Children*, 54, 54-59.

Keller, E. (2005). Strategies for Teaching Students with Learning Disabilities. Retrieved March 28, 2008, from http://www.as.wvu.edu/~scidis/learning.html.

Lerner, J. W. (1997). *Learning Disabilities: Theories, Diagnosis and Teaching Strategies.* (7th ed.). Boston: Houghton Mifflin Company.

Mastropieri, M. A. & Scruggs, T. E. (2000). *The Inclusive Classroom: Strategies for Effective Instruction.* Upper Saddle River, N J: Merrill Prentice-Hall.

Mastropieri, M. A., Scruggs, T.E., Bakken, J. P., & Whedon, C, (1996). Reading Comprehension: A Synthesis of Research in Learning Disabilities. *Advances in Learning and Behavioural Disabilities.* T.E. Scruggs and M. A. Mastropicri Eds. 10, Part B: 201-227, Greenwich, CT: JA1 Press.

Mastropieri, M. A., Scruggs, T. E. & Fulk, B.J.M. (1990). Teaching Abstract Vocabulary with the Key Word Method: Effects on Recall and Comprehension. *Journal of Learning Disabilities*, 23, 92-96.

Meichenbaum, D. (1977). *Cognitive-behaviour Modification: An Integrative Approach.* New York: Plenum Press.

Mergel, B. (1998). Instructional Design and learning theory. Retrieved on October, 30, 2006 from www.usask.ca/educationalcoursework/802papers/mergel/brenda.html.

Mba, P. O. (1995). *Fundamentals of Special Education and Vocational Rehabilitation:* Ibadan. Nigeria: Codat Publications.

Nelson-Jones, R. (2001). *Theory and Practice of Counselling and Therapy.* (3rd ed.). London, New York: Continuum.

Ormord, J. E. (1999). *Human Learning* (3rd ed.). Upper Sddle River, N J: Prentice Hall.

Ormord, J. E. (2003). *Educational Psychology: Developing Learners.* (4th ed.). Upper Saddle River, N. J: Merrill Prentice Hall.

Palincsar, A. and Brown, A. (1984). Reciprocal Teaching of Comprehension – Fostering and Comprehension–Monitoring Activities. *Cognition and Instruction,* 1 (2) 117 – 175.

Sachs, A. (1984). Accessing Scripts before Reading the Story. *Learning Disability Quarterly,* 7, 226-228.

Schumaker, J. B., Deshler, D. D., Alley, G. R., Warner, M. M. and Denton, P. H. (1982). Multipass: a Learning Strategy for Improving Reading Comprehension. *Learning Disability Quarterly,* 5, 295 – 304.

Scruggs, E. & Mastropieri, M. A. (1992). Classroom Applications of Mnemonic Instruction, Acquisition, Maintenance and Generalization. *Exceptional Children,* 58, 219-229.

Scruggs, T. R., Mastropieri, M. A., & Sullivan, G. S. (1994). Promoting Relational Thinking Skills: Elaborative Interrogation for Mildly Handicapped Students. *Exceptional Children,* 60, 450-457.

Schuman, L. (1996). Perspectives on Instruction available online: www.edweb.sdsu.edu.edu/courses/edtec540/perspectives/perspective.html

Smith, D. D. (2007). *Introduction to special education: making a difference.* (6th ed.) Boston: Allyn and Bacon.

Tennant, M. (1997). *Psychology and Adult Learning.* London: Routledge.

United States Department of Education. (2005b). Assistance to States for the Education for Children with Disabilities Program and the Early Intervention Program for Infants and Toddlers with Disabilities; Proposed Regulations. *Federal Register* 34, CRF Parts 300, 301 and 304.

Wood, D. A., Rosenberg, M. S., & Carran, D. T. (1993). The Effects of Tape-recorded Self-instruction Cues on Mathematics Performance of Students with Learning Disabilities. *Journal of Learning Disabilities,* 26, 250-258.