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EFFECTS OF DIRECT INSTRUCTION AND SOCIAL CONSTRUCTIVISM ON LEARNERS' CONGNITIVE DEVELOPMENT: A COMPARATIVE STUDY

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ABSTRACT

Direct instruction and Social constructivism are discussed in this paper as different approaches that can enhance the learner's cognitive development. Direct instruction is teacher centered and the teacher is the director in the learning setting. Social constructivism is learner centered and it enables learners to have ownership in learning, and to develop their thinking more than those depending much on the teacher guidance. This paper concludes that, social constructivism can have more effect on the learner's cognitive development than direct instruction. Learners will be able to share their ideas and collaborate with others to solve different problems they encounter in the learning environment.

Keywords: Direct instructions, social constructivism, cognitive development

INTRODUCTION

The discussion in this paper is a comparison of Direct instruction and Social constructivism. Direct instruction is a teacher centered approach while social constructivism is learner centered. Teacher centered approaches makes the teacher to have more control in the learning setting; and learners become passive recipients of information provided for them by the teacher. In a learner-centered approach, learners construct knowledge and take responsibility for their own learning. Social constructivism can enhance students' learning more than direct instruction approach. This reasoning is supported by discussing direct instruction, and its four phases, social constructivism, and the four characteristics and situated cognition.

DIRECT INSTRUCTION

Direct instruction is described as "an instructional model to teach well defined knowledge and skills needed for later learning" (Eggen & Kauchak, 2010, p. 409). Some examples of direct instruction involve younger students using basic operations to solve math problems, students' using grammar and punctuation in writing, and chemistry students' balancing equations. Eggen and Kauchak (2010) have found that direct instruction is effective when skills involve detailed steps. This is especially helpful in working with students who are low achievers or with those with disabilities. A description of examples of a direct instruction lesson are discussed below:

1. State learning objectives and orient students to learn the lesson: The teacher is expected to tell the students what they should be learning.
2. Review prerequisites: A revision of skills and concepts learned in previous lessons).
3. Present new materials: The teacher should is expected to present new information with examples to aid students' learning.

4. Conduct learning probes: Questions should be used to assess students' level of understanding (Slavin, 2012, p.185).

The above characteristics of direct lessons show that most work is done by the teacher.

The four phases of direct instruction are discussed (see Table below). The four phases of direct instruction are cognitive in nature. Because the researchers mentioned below thought the four phases of direct instruction are related to human memory, it is important to discuss them. This writer thinks that they represent a cognitive view of direct instruction. Eggen and Kauchak (2010) suggested that, the model is cognitive and related to the human memory. The above mentioned researcher's findings are supported because one of the model's cognitive components, attention, is critical in human learning. Information from the environment reaches the senses (sensory register) and then passes to the working memory when it is attended to. It will be transferred to the Long-term memory where it will be stored permanently. Learners can retrieve the information if they need to use it. Also, Eggen and Kauchak (2010) proposed that Vygotsky's (1978) notion of scaffolding is related to Direct Instruction. Scaffolding is a process where an adult or an experienced peer help learners with some activities, but when learners are capable of working alone; the adult should reduce his/her guidance. (See the third phase of the model).

Table 1. Relationships between Phases and Cognitive Learning Components and Cognitive-Based Direct Instruction (Eggen & Kauchak, 2010 p.410)

Phase	*Cognitive Learning Component*
Introduction and Review: Teachers begin with form of introductory focus and review previous work.	Attract attention Access prior knowledge from long-term memory.
Developing Understanding: Teachers describe and model the skill or explain and present examples of the concept. Teachers emphasize understanding.	Acquire declarative knowledge about the skill or concept. Encode declarative knowledge into long-term memory.
Guided practice: Students practice the skill or identify additional examples of the concept, and the teacher provides scaffolding.	Move through the associative stage of developing procedural knowledge.
Independent Practice: Students practice on their own.	Develop automaticity with the skill or concept.

The first phase *Introduction and Review* suggests that learning begins with attention. Students are expected to pay attention in the beginning of the lesson. The teacher can find out the students' opinions regarding the lesson by asking them to give descriptions of the 'problem asked' and revise the work they have done to recover "prior knowledge from the long-term memory" (Eggen and Kauchak, 2010, p.411).

The second phase *Developing Understanding* focuses on the teacher as modeling the skills, explaining and demonstrating how students should use the skills. In the second phase the students obtain the 'declarative and conditional knowledge' that help them to be able to adjust, and get used to applying knowledge in various situations. The declarative knowledge contained in the Long-term memory is characterized by facts, concepts, procedures and rules (Eggen and Kauchak, 2010).

Guided practice is emphasized in the third phase. Learners practice skills as teachers scaffold them. The scaffolding metaphor suggests that teachers guide learners through the tasks that

they are engaged in. As learners master the tasks, the teacher must reduce his/her assistance so that learners can work by themselves without guidance.

The final phase is *Independent Practice*; the teacher assists students to shift from thinking about the skill to 'performing it automatically'. And it encourages responsibility in their learning and reduces scaffolding as well. The teacher is expected to monitor students learning. When the teacher monitors students in their learning, it may involve the power of the teacher over students when working with them, which it is a limitation of the approach. Social constructivism avoids this limitation by encouraging students take responsibility in their learning.

SOCIAL CONSTRUCTIVISM

Social constructivism is an aspect of constructivism that suggests that "learners first construct knowledge in a social context and then individually internalize it" (Eggen and Kauchak, 2010, p. 227). Social constructivism is a process by which more knowledgeable adults or experienced peers provide guidance which leads to transmission of knowledge so that higher mental functions and develop in the social learning environment.

Social constructivism helps us to understand the teacher's role in the learning setting. Teachers use the question methods with instructions and they organize and use learning activities, motivating and assessing students. The main focus of the social constructivism approach is to facilitate "students' constructions of knowledge using social interaction" Flemingo and Alexander (as cited in Eggen & Kauchak, 2010 p.349).

The social constructivism view is, when the learning environment is created by knowledgeable others, learners have the ability to exchange their ideas as well as collaborate with others to solve problems. Santrock, (2009) added "in this way, experience in social contexts provide an important mecha nism for the development of students' thinking" (p.349). And teacher- centered approaches enable the teacher to be in control of the learning environment and conditions learners to receive knowledge prepared for them. Therefore, the students' efforts to create knowledge for themselves are constrained. Learners need to develop cognitive processes and critical thinking; they ought to be exposed to learning environments that enhance construction of knowledge.

Social constructivists agree on the four characteristics, and the four characteristics have implications for Cognitive education because social constructivist's major principle is "learners construct, rather than record, knowledge" (Eggen and Kauchak 2010, p. 230). Other theorists believe "the view of the learner has changed from that of a recipient of knowledge to that of a constructor of knowledge" (p. 230). The characteristics are discussed below:

Four Characteristics of Social Constructivists

Learners are viewed as creating knowledge that makes sense to them and having control in their learning. They are perceived as having changed from receiving knowledge from more knowledgeable others to constructors of knowledge. Eggen and Kauchak (2010) proposed that "Learners construct knowledge that makes sense to them" (p.230).

New learning depends on what the learners understand. Learning is perceived as meaningful and social constructivists stress prior knowledge in facilitating learning. Eggen and Kauchak, 2010) suggested that, the emphases from social constructivists, learners develop thoughts to construct knowledge and are embedded in the existing knowledge they have. Therefore, "new learning depends on current understanding" (p.230).

Learners are perceived as learning from each other and sharing ideas. Interacting with adults or experienced peers students learn how to solve different kinds of problems. Thus, "Social interaction facilitates learning" (Eggen and Kauchak (2010 p.230).

The internalization theory of Vygotsky proposed that children learn first by being engaged in the activities under adult support and with time they continue to perform activities alone. Therefore, the behavior will be viewed as first regulated socially by instruction of adults, and then become regulated on their mental plane (Brynes, 2008).

The fourth idea that social constructivists suggested has an influence in learning is real- world tasks. Their perspectives on the above mentioned idea are rooted in situated cognition. They proposed that most of what is learned is explicit to the setting in which "it is learned." Anderson et al., (as cited in Eggen and Kauchak, 2010, p. 230). Real world tasks are also called authentic tasks, learning activities where a student put into practice thinking that is related to what is essential in the world Eggen & Kauchak, 2010).

Thinking is significant: Authentic activities are activities that promote thinking as well as problem –solving skills. Authentic activities are important in school and out of school setting. "The most meaningful learning occurs within real-world tasks" (p.230). For example, when students use their knowledge of science to explain the importance of wearing seat belts when driving; it is an example of including authentic learning activities (Eggen and kauchak 2010).

Situated cognition is related to the most meaningful learning discussed above. Learners are perceived as 'learning by participation' borrowed from Lave & Wenger (1991). The school setting is a place where learning is situated.

Situated Cognition

Situated cognition is vital in the social constructivist perspective; it implies that thinking is situated in the social and physical environment not in the person's mind (Santrock 2009). On one hand knowledge is rooted in, and related to the environment "in which the knowledge is developed" (Santrock, 2009 p.350). The cognitive view perceives knowledge as possession while the socio-cultural sees knowledge as "belonging, participating and communicating" Mason, 2007, p.3) Their explanations suggest that knowledge is not an 'entity' in the head of an individual, which the individual can obtain, develop or modify, but an action that cannot be thought of as disconnected from the environment in which it takes place. The classroom is "a community of learners" the teachers and students do joint work of learning together aiming at assisting other individuals to achieve their goal in the learning environment Eggen and Kauchak, 2010).

CONCLUSION

Direct instruction and social constructivism of knowledge differ in relation to student learning. Direct instruction approach can contribute less input for learners in their construction of knowledge. Direct instruction approach does not enhance much of individual's cognitive abilities. Social constructivists advocate for creation of learning settings where learners share ideas and work in collaboration with each other solving different problems they encounter as they learn.

The key element is the teacher has to make sure the type of learning where students construct knowledge happens. Also, students are involved with others as they learn. They have the chance of evaluating and improving their understanding through interaction and "exposed to the thinking of others and as they participate in creating and understanding" (Santrock 2009, p.350). When students interact and assist each other in learning; their cognitive abilities

increase and are free as the learning environment becomes conducive. It is cooperative work and learning. Cooperative learning happens when students are engaged in small groups helping each other in the learning setting. Students are encouraged to work in pairs or groups not exceeding four members. Ashman and Conway, 1997) add "the aim is to ensure that students work together to maximize their own and other group members' learning" (p. 143).

The four characteristics social constructivists agree on stress that learners create meaningful knowledge. When learners create knowledge that makes sense is motivated to learn by them. Situated cognition is significant in the social construction of knowledge, it implies that thinking *is located (situated*) within the social and physical environment not within the learner's mind. The learner's knowledge is "embedded in" attached to the environment where knowledge is developing. (Santrock, 2009, p. 350)

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