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## **THE STUDY OF THE EFFECTIVENESS OF APPLYING THE CONSTRUCTIONAL APPROACH IN MATERIALIZING THE GOALS OF THE CURRICULUM OF THE INTELLIGENT SCHOOLS**

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**ABSTRACT:** One the basic and the fundamental differences between the traditional and the intelligent schools, which has proposed in our country and has been conducted in some schools since 2005, is the method of learning and teaching in these schools which should be learnt by the teachers of these schools. But the constructional teaching approach, with regard to the features it possesses, can contribute to materialize the goals of the intelligent schools in case it is used by the teachers. Because the tasks of the teachers and the students in the schools match greatly with the tasks of the teachers and the students in the constructional approach if it is applied. Therefore in this article the author, by studying the features of the constructional approach of teaching and the principle bases of the intelligent schools concludes that if the teachers of the intelligent schools are well- familiar to the constructional teaching approach, they can be to large extent useful in materializing the goals of the intelligent schools and playing the teaching role.

**Keywords:** Constructional Approach, Curriculum of the intelligent Schools

### **THE DEFINITIONS OF CONSTRUCTIONAL APPROACH**

Constructional approach has been defined in various ways but all of them focus on the active role of the learners in the comprehension and construction of knowledge. According to Santrock (2004) constructional approach is a learning approach which focuses on the activeness of learners in the construction of knowledge and understanding (p. 561). Also, Schunk (2000) argues that, "constructional approach is a psychological and philosophical viewpoint according to which people construct and form most of their own learning (p. 229). To be brief, constructional approach is based on the idea that learners gain knowledge from their own experiences (Ormrod, 1995).

Nowadays, rather new theories have been presented in psychology and education which are called Constructivism and have their root in the past scientific and philosophical ideas. Constructivism has its origins in the works done by Piaget, Vygostky, Gestalt psychologists, Bartlett, Bruner, and Dewey's philosophy of education. All the above-mentioned works only constitute a part of the literature review (Woolfolk, 2004).

Constructivism can be defined as, "knowledge as a result of the productive activities of individuals". Knowledge is not outside the minds of those who want to acquire that and is not the result of the experience of others, but is the consequence a person's own experience. Teaching according to constructivism helps learners to internalize newly acquired information and give new form to or modify them (Salimi, 2009).

Based on constructivism, there is not any independent reality but all types of reality depend upon the minds of people and mind is a base and tool for the interpretation of events, objects, and prospects in the world and such interpretations establish knowledge. Today, the main focus in education is on innovations, creativity, and the

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construction of knowledge and to base teaching methods on the interaction of learners with the environment and discovery of facts. So, the constructional approach has a special consistency with this issue because in this approach focuses on personal achievements and the invention of methods and concepts. Also, it must be noted that in this approach, teachers and other equipment are considered as the “facilitators” of knowledge construction by learners.

Teachers who are interested in planning and teaching their subject matter according to constructivism accept to and must play different roles. The main task for teachers in this method is to facilitate the process of knowledge construction and to guide learners in this process.

Before the levels in the execution of constructivism be explained, it must be mentioned that teachers need to take into account the important topics in the following table and put those topics as guidelines for themselves in the execution of constructivism.

### **The Major Concept In Constructivism**

#### **1. The concept of construct**

Construct means a framework consisting of a set of concepts (for example, the concepts related to an event or accident, a system, or knowledge). In order to assign meaning to the natural phenomena, learners must create mental constructs in an informed way and based on such constructs which include beliefs, opinions, and knowledge try to interpret reality.

#### **2. The concept of knowledge construction**

This concept means the mental production of information.

Learners must take the responsibility of their own learning and the method of learning by themselves and must choose or develop their own learning strategies and set their own educational goals.

#### **3. The concept of reality**

In constructivism, reality is not outside a person’s mind but is a meaning which has been constructed by the person based on the world he lives.

### ***Steps In The Execution Of Constructivism***

#### **1. Searching an exploration**

It means looking for ways to construct knowledge by the learners. In this step, learners attempt to construct knowledge by getting help from all their senses. The construction of knowledge occurs throughout the process of search and exploration. In this step, the teacher tries to explain the topic and ask the students to express their own information, skills, and ideas. This step is roughly the first step in brainstorming and the inductive approach. (the genesis of concepts)

#### **2. Understanding and explanation**

In this step, teachers and students discuss about the information, skills, and ideas presented in the previous step. In other words, reaching to an agreement on the issues presented is the most important task in this step. Here, teachers ask Why and How questions related to the arguments put forward by learners.

Teachers should guide their students to share their ideas and findings with other members of the group.

#### **3. Generalization and spread**

In this step, teachers help their students to generalize and expand their findings. In other words, helping the learners to improve and develop personal information and skills and expanding them to other. In this step, the topic is expanded when students study reference books and get information from others. Usually, making use of extension homework can help to expand the topics.

#### **4. Checking and evaluation**

In this step, all the activities, skills, and findings are checked and evaluated in order to determine the amount of changes in thoughts, mastery of skills, learned materials, and the construction of knowledge. In order to evaluate the learned materials, thought provoking questions and such tools as interviews with informed people and referring to useful resources can be used. Also, the results gained from this step should be made use of in teaching and learning systems (Shabani, 2010).

### ***The Major Characteristics In A Constructivist Instructional Design***

1. The goals are developed in a more comprehensive and basic way.

2. A suitable learning environment is being provided.

3. Teachers and students help each other to select those activities, materials, projects, and operations which help learners to understand the subject matter.

Also, the process of learning and the thoughts behind that is emphasized over the product of learning (Seif, 2010).

## **SMART SCHOOLS**

A smart school is a physical school in which the control and administration is done based on computer and networks and the materials are mainly electronic. Also, testing and monitoring systems in such schools are smart. In these types of schools, a smart student develops and modifies his/her executive abilities and resources by being involved with various topics in a continuous way and this issue lets school officials to make their students ready to acquire new information by considering the changes happened and the increase in the level of information that their students are familiar with.

### **The Objectives Of Smart Schools**

1. Comprehensive development of students (mental, physical, emotional, and intellectual)
2. Upgrading personal capabilities
3. Training humans who are contemplative and familiar with technology
4. Increasing public participation

In smart schools, students are both teachers and learners. In such schools, the curriculum is not limiting and students are allowed to go beyond their curriculum. There, teaching methods are based on student-centeredness. Focus on thinking abilities and the provision of a teaching-learning environment are among the strategies and policies of smart schools. Seven key principles in smart schools include: 1. creative knowledge, 2. learning aptitude, 3. attention to the understanding of materials, 4. learning with the goal of mastery of the content and transferring it, 5. the evaluation of learned materials in a focused way, 6. overcoming difficulties, 7. School as an educational organization. In smart schools, students can use CDs and computers are used instead of blackboards. Here, students can get a lot of information on any subject by the use of the Internet. In these schools, teaching is not merely done by teachers but students are also involved in the process of teaching. Teachers help students to understand the topics better and save more time by making use of electronic materials and students have the chance to demonstrate their abilities and produce educational materials.

Success is accessible in these schools and the rate of success depends on students' effort and perseverance and a right direction. In this method, the spirit of research and explorations replaces an aimless spirit among learners. In constructivism, the main prerequisite for any change is the change in thought and tools and equipment are just used in order to realize thoughts.

Instead of providing the answers to students' questions, teachers can ask their students to look for the answers of their questions and tell them to the other students.

The foundations for the development of smart schools are making use of modern information and communication technologies and their difference with virtual schools is that here the students must be present physically at the schools but in virtual schools teachers and students can be hundreds of kilometers apart from each other. There is not any necessity for the teachers in smart schools to be masters of IT but they need to be informed of the system of such schools and make good use of the equipment there. A teacher should know where the resources are so that when students ask questions, he/she can guide them to the required resources.

Parents communicate with smart schools through computers and have the possibility to connect with the principal and get informed of the educational status of their children.

Libraries in smart schools are electronic and students can use them in an online way. Discussion and question and answer forums are provided in a synchronous and asynchronous way.

### **The Pillars Of Smart Schools**

Teaching – Learning environment

This domain covers four areas:

- a. Curriculum
- b. Teaching methodology
- c. Evaluation
- d. Content

Administration

Supports the resources and processes required in a teaching – learning environment.

People's responsibilities and the required skills: In smart schools, the roles of principals, students, and parents are changed in order to play a more effective role by making use of their abilities and knowledge.

Technology

Teaching – learning environment, administration, and external communications necessitate solutions which are based on the use of technology.

The characteristics of the pillars of smart schools

a. Curriculum

The principles governing the curriculum in smart schools include: Designing to help students develop in a comprehensive way, the integration of students in order to develop in a comprehensive way, the integration of knowledge, skills, and values through curriculum (by assigning the activities related to content into projects),

discipline and continuity in education, establishing positive attitudes towards the use of technology, getting all the students to access suitable education.

The attitudes towards curriculum

Meaningfulness: All students understand the concepts in education in order to understand the goals of their education.

Social Responsibility: Students get informed of their responsibilities in the society and feel responsible towards their people.

The feedback of curriculum: Curriculum should induce learners with critical thinking and skills, and positive creativity.

Comprehensiveness: Curriculum should focus on all aspects of human beings and help learners to understand the relations between different topics.

Non-restrictiveness: Curriculum is not restrictive. First, the current programs are being revised in a “continuous” way. Secondly, the students are allowed to go beyond the curriculum.

Being targeted: Curriculum makes use of technology as an instrument to transfer knowledge and teaches the students how to make use of it in order to get help from it in times of need.

#### b. Teaching Methodology

The teaching methodology used in smart schools is student-centered and the following principles govern the methodology used there:

The provision of a combination of teaching methods to make sure of the comprehensive development of students’ aptitudes and abilities in order to:

- a. Encourage learning and develop creativity
- b. Making the activities student-centered and develop individual skills
- c. The provision of various educational methods to develop learning
- d. The direction of classes by making use of various teaching – learning methods

In smart schools the students have a more important role in a way that:

Students form the educational goals by getting help from teachers.

Students determine educational tasks by getting help from teachers.

In the selection of materials, students consider the materials themselves and ask for teachers’ attitudes on them.

#### c. Evaluation

In smart schools, evaluation is smart and sometimes is not smart depending the lesson type.

The characteristics of evaluation:

Comprehensive

Various forms

Multiple-choice methods

On time

Student centered

Continuity

Evaluation is performed in a comprehensive way in smart schools and in addition to the summative evaluation includes readiness and development and provides various forms of information on students’ abilities learning methods.

Initial evaluation: The evaluation of the level of knowledge and abilities

Formative evaluation: The evaluation of a student’s ongoing development in order to determine strong and weak points

Summative evaluation: Considering the current educational system, this type of evaluation is performed in a pencil – and- paper method to evaluate students’ learning.

Evaluation is designed in different forms such as: classroom evaluation, school evaluation, and focused (centralized) evaluation.

Classroom evaluation: This type of evaluation is performed during and after the lessons.

School evaluation: It is performed after each section of the lessons has been finished.

Focused evaluation: This type is performed in the form of a project whenever learners demonstrate their readiness.

#### d. Content

Content is provided in two forms in smart schools:

Standardized content (through the Ministry of Education)

Teacher content

Generally speaking, content is formed based on four major indicators:

1. Technical quality
2. Attraction
3. Educational quality
4. Accordance with the curriculum

## **THE APPLICATIONS OF CONSTRUCTIONAL APPROACH IN ELECTRONIC LEARNING ENVIRONMENTS:**

The constructional approach provides ideas and principles that are important for learning environments by getting help from technologies. Those ideas and principles are as follows:

1. Learning takes place in real and meaningful conditions. In order to realize this, students should participate actively in the process of decision-making.
2. Learning is turned into an individual and social activity. The influences of technology on learning have a deep impact on the social aspects of learning. This is because we can observe the individual activities of students when they are working with computers. On the other hand, technology provides students with various social learning situations and allows to learn better through computers, social networks, electronic mail, and telecommunications.

The growing understanding of the important roles that learning environments can play with the help of technology might lead to the creation of different learning environments such as environments for social and creative learning which are focused in the Constructional approach ( Lotfi & Abdollahi, 2010).

## **DISCUSSION and CONCLUSION**

Based on what mentioned before it can be concluded that the Constructional approach have some features that can be effective in the realization of objectives in smart schools. It can be argues that there is a high degree of similarity between the learning situations that teachers in the constructional approach create for their students with the situations that teachers in smart schools desire to establish. So, it can be said that as teachers who design educational plans based on constructivism are considered as the facilitators of the process of knowledge construction and help and guide students in the construction of knowledge, teachers in smart schools play the role of guides in the process of education and create situations for the students to learn how to learn.

If teachers make use of the Constructional approach in order to teach their students how to process information, think about various data and information, use the materials learned in daily life, know different sources of information (global and local), and connect in a suitable and effective way with others through media, in fact they help them to be involved in the process of learning. In other words, they help their students to manage their own learning and give depth to it. It is clear that the above-mentioned situations are the objectives that are being followed in smart schools. So, if teachers in smart schools have a command of the Constructional approach and provide students with interactive learning, they would be able to advance the objectives of smart there schools through the establishment of a real and meaningful learning environment.

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