SOCIAL SCIENCE AND HUMANITIES

CONSTRUCTIVIST TEACHING STRATEGIES: PARADIGM SHIFT FOR EFFECTIVE TEACHING AND LEARNING IN SENIOR SECONDARY SCHOOLS IN NIGERIA

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Abstract: Over the years many teaching strategies have been proposed by various educators to improve learning of all students, but not any of these proposed teaching strategies meet the needs of all students at the same time. Constructivism represents one of the biggest ideas in education and its implications for how teachers teach, and learn to teach, to meet the need of all students. Constructivist teaching helps teachers to draw on new ideas as they make decisions about which teaching techniques are most appropriate for all students to learn. The theory suggests that humans construct knowledge and meaning from their experiences. If efforts in reforming education for all students are to succeed, then focus must be made on students. A focus on student-centered learning is the most important contribution of constructivism. This paper therefore, discussed constructivist teaching strategies for effective teaching and learning, and conceptual understanding of the theory, as well as teaching goals of constructivist learning environments and benefits of constructivism were outlined using descriptive design of naturalistic observation and both primary and secondary sources of information was used.Furthermore, principles of constructivism and several implications of constructivism for teaching and learning were reviewed. The study therefore, concluded that teachers need to reflect on their practice in order to apply these ideas to their work and that constructivist teachers encourage students to constantly assess how the activity is helping them gain understanding as higher achievement and interest could be achieved. The study therefore recommended that, teachers should adopt constructivist teaching method for effective teaching and learning in order to produce functional students who could effectively exploit their environment by adequate acquiring the necessary skills that will enable them fit into the society.
Keywords: Constructivism, Teaching strategies, Teaching and Learning

USA, Michigan   *Generalization of Scientific Results*

INTRODUCTION

Teaching is a process of passing knowledge, skills and information from an authority to persons with little or no idea of the subject matter. Molagun & Taiwo (2004) see teaching as a systematic process of transmitting knowledge, attitude and skills in accordance with professional principles. Therefore, teaching is a process to cause or help the students/learner to learn about a subject. Teaching brings about learning on the path of the learner, so learning can be seen as a lifelong process of transferring information and experiences into knowledge, skills, behaviour and attitude. Teaching and learning is a cooperative effort, requiring engagement on the parts of both the students and the teachers. Therefore, the teaching and learning process can only be effective if all the factors that affect learning are given adequate attention. Factors such as student characteristics, the teacher characteristics and the learning environment need to be put into consideration during teaching and learning processes so as to enhance expected achievement form the students.

The teacher characteristics play a major role in the achievement of students in a particular subject area. The students' interest and subsequently their achievement are determined by the teacher's quality. The teachers' quality here includes; the knowledge of the subject matter, the organisation of learning experiences, personal characteristics and most importantly familiarity with different teaching methods. The knowledge of the subject matter is not enough for a teacher to be considered as being effective but the organisation of learning experience alongside the ability to employ the best and adequate teaching methods in delivering the learning experiences to the students. A growing body of research such a Center for Public Education (2014) has shown that students are more highly influenced by their teachers' quality. It indicated that the achievement gap between students taught by effective teachers and those taught with least effective teacher is very wide. This suggests that the most significant gain in student's achievement will likely be realised when students receive teaching from good teachers.

Recognizing individual differences of the learners is a basic concept a teacher needs to prepare to teach, it is a fundamental assumption of strategic teaching and learning that what we choose to teach in the classroom should be an interaction of what we know about the variables of instruction, learning, achievement, and contextual factors. This assumption drives the quest to develop an instructional framework. Rosenshine and Frust cited in Bada (2015) reported that students learn best when the following characteristics are present: variability in teaching methods and materials, interest, clarity, task-oriented behaviour, teacher use of structuring

comments, student opportunity to learn the material, multiple levels of questions, and enthusiasm. Yelon (1996) promoted the ten powerful instructional principles that he believed excellent teachers apply which are: meaningfulness, prerequisites, open communication, organized essential ideas, learning aids, novelty, modelling, active appropriate practice, pleasant conditions and consequences, and consistency.

Furthermore the learner's power to think and solve problems should be a component of a well designed instructional strategy and its effectiveness. According to Dyer and Osborne cited in Basil (2015), the learner's problem solving ability can be accelerated with the use of appropriate instructional approaches. Also Nwafor cited in Bada (2015) explained that the new wave of changes is changing the educational goals to not just equipping the learner with basic knowledge, skills and values but with higher cognitive skills such as problem solving and thinking, that will enable the learner to adapt freely in a rapidly changing world.

An important restriction of education is that teachers cannot simply transmit knowledge to students, but students need to actively construct knowledge in their own minds. That is, they need to discover and transform information, check new information against old, and revise rules when they do notlonger apply. This constructivist view of learning considers the learner as an active agent in the process of knowledge acquisition. Constructivism is a learning theory found in psychology which explains how people might acquire knowledge and learn. Constructivist teaching is based on constructivism learning theory and it has direct application to education. Therefore, the word constructivist and constructivism will be used interchangeably. The theory suggests that humans construct knowledge and meaning from their experiences.

Constructivism is a kind of learning strategy that lays emphasis on active role of learners in the process of constructing their own knowledge. Constructivism according to Fosnot (1996) is the concept that learners actively construct their own knowledge and meaning from their experiences. Students do not reinvent the wheel but, rather, attempt to understand how it turns, and how it functions, this is evident in different subject areas in which no subject is no exception.

Teachers constantly search for new strategies to help them understand and connect to their past or present experiences. Constructivism is a teaching model essentially, it is a model or metaphor of how people learn or how learning takes place (Glasersfeld, 1989; Cobern, 1995). It justifies the putting together of new ideas by interpreting new experiences in light of prior knowledge so that the new ideas come to make sense to the learner

(Cobern, 1995). The strengths of constructivism lie in the construction of knowledge and what that means for students and teachers. Since knowledge cannot be transferred from one individual to another like a commodity, the role of the teacher as knowledge giver in the classroom becomes moot. Constructivist teaching is based on constructivist learning theory. This theoretical framework holds that learning is always built upon knowledge that a student already has; this prior knowledge is called a schema, all learning is filtered through pre-existing schemata, constructivists suggest that learning is more effective when a student is actively engaged in the learning process rather than attempting to receive knowledge passively

One of the primary goals of using constructivist teaching method in teaching financial accounting is that students learn how to learn by giving them the training to take initiative for their own learning experiences.

In the constructivist classroom, the teacher's role is to prompt and facilitate discussion. Thus, the teacher's main focus should be on guiding students by asking questions that will lead them to develop their own conclusions on the subject.

The lecture method on the other hand, is a method of teaching in which the teacher delivers the lesson to student with little or no active participation of the students. It is a teacher-centred approach involving largely a one-way form of communication from the teacher to the students. For this reason, it is termed instructive approach because most of the talking is carried out by the teacher while the students remain passive listeners, taking down notes. At secondary school level, there is strong objection to the exclusive use of the lecture method in teaching some subjects including Financial Accounting.

Difference between a Non-Constructivist Classroom and Constructivist Classroom

In the constructivist classroom, the teaching and learning focus shift from the teacher to the students. The classroom is no longer a place where the teacher ("expert") pours knowledge into passive students, who wait just to be receivers of knowledge. In the constructivist model, the students are urged to be actively involved in their own process of learning. The teacher functions more as a guide who coaches, mediates, prompts, and helps students develop and have access to their understanding, and thereby their learning. In the constructivist classroom, both teacher and students think of knowledge not as inert factoids to be memorized, but as a dynamic, ever-changing view of the world we live in and the ability to successfully stretch and explore that view. The chart in table 1 compares the non-constructivist classroom with the constructivist classroom. One can see significant differences in basic assumptions about knowledge, students, and learning.

Table 1: Difference between Non-constructivist classroom and Constructivist classroom

Non-Constructivist Classroom	Constructivist Classroom
Curriculum begins with the parts of the whole. Emphasizes basic skills.	Curriculum emphasizes big concepts, from the whole and expanding to include the parts.
Strict adherence to fixed curriculum is highly valued.	Pursuit of student questions and interests is valued.
Materials are primarily textbooks and workbooks.	Materials include primary sources of material and manipulative materials.
Teacher's role is directive, rooted in authority.	Teacher's role is interactive, instructor, rooted in negotiation and focus on student.
Learning is based on repetition.	Learning is interactive, building on what the student already knows.
Teachers disseminate information to students; students are recipients of knowledge.	Teachers have a dialogue with students, helping students construct their own knowledge.
Assessment is through testing, correct answers.	Assessment includes student works, observations, and points of view, as well as tests. Process is as important as product.
Instructor evaluate student learning.	Student evaluates their own learning; instructor also evaluates.
Knowledge is seen as inert.	Knowledge is seen as dynamic, ever changing with our experiences.
Students work primarily alone.	Students work primarily in groups, pair or alone depending on the purpose of the activity.

Source: Adopted from Brooks and Brooks (1993)

The student is always active if the central focus of learning is that knowledge is constructed by individual learners; therefore, instruction must be student-centred.

Basic characteristics of Constructivist Learning Environments

One of the primary goals of using constructivist teaching is that students learn how to learn by giving them the training to take initiative for their own learning experiences. According to Audrey Gray cited in Basil (2015) the characteristics of a constructivist classroom include:

1. the learners are actively involved

2. the environment is democratic

3. the activities are interactive and student-centered

4. the teacher facilitates a process of learning in which students are encouraged to be responsible and autonomous .

Tam (2000) lists four basic characteristics of constructivist learning environments, which must be considered when implementing constructivist instructional strategies:

1) Knowledge will be shared between teachers and students.

2) Teachers and students will share authority.

3) The teacher's role is one of a facilitator or guide.

4) Learning groups will consist of small numbers of heterogeneous students.

Goals of Constructivist Learning Environments

Honebein (1996) summarizes what he describes as the seven pedagogical goals of constructivist learning environments as:

1) To provide experience with the knowledge construction process (students determine how they will learn).

2) To provide experience in and appreciation for multiple perspectives (evaluation of alternative solutions).

3) To embed learning in realistic contexts (authentic tasks).

4) To encourage ownership and a voice in the learning process (student-centered learning).

5) To embed learning in social experience (collaboration).

6) To encourage the use of multiple modes of representation, (video, audio text, etc.)

7) To encourage awareness of the knowledge construction process (reflection, meta-cognition).

Furthermore, in the constructivist classroom, students work primarily in groups, therefore, learning is interactive and dynamic. There is great focus and emphasis on social and communication skills, as well as collaboration and exchange of ideas. This is contrary to the traditional classroom in which students work primarily alone. Learning is achieved through repetition, and the subjects are strictly adhered to and are guided by a textbook. Some activities encouraged in constructivist classrooms are:

- Experimentation: students individually perform an experiment and then come together as a class to discuss the results.

- Research projects: students research a topic and can present their findings to the class member.

- Field trips. This allows students to put the concepts and ideas discussed in class in a real-world context. Field trips would often be followed by class discussions.

- Class discussions. This technique is used in all of the methods described above. It is one of the most important distinctions of constructivist teaching methods.

Benefits of Constructivism to teaching and learning

1. Students learn more, and enjoy learning when they are actively involved, rather than passive listeners.

2. Education works best when it concentrates on thinking and understanding, rather than on rote memorization. Constructivism concentrates on learning how to think and understand.

3. Constructivist learning is transferable. In constructivist classrooms, students create organizing principles that they can take with them to other learning settings.

4. Constructivism gives students ownership of what they learn, since learning is based on students' questions and explorations, and often the students have a hand in designing the assessments as well (Natalie, 2012). Constructivist assessment engages the students' initiatives and personal investments

in their journals, research reports, physical models, and artistic representations. Engaging the creative instincts develops students' abilities to express knowledge through a variety of ways. The students are also more likely to retain and transfer the new knowledge to real life.

5. By grounding learning activities in an authentic, real-world context, constructivism stimulates and engages students. Students in constructivist classrooms learn to question things and to apply their natural curiosity to the world.

6. Constructivism promotes social and communication skills by creating a classroom environment that emphasizes collaboration and exchange of ideas. Students must learn how to articulate their ideas clearly as well as to collaborate on tasks effectively by sharing in group projects. Students must therefore exchange ideas and so must learn to "negotiate" with others and to evaluate their contributions in a socially acceptable manner. This is essential to success in the real world, since they will always be exposed to a variety of experiences in which they will have to cooperate and navigate among the ideas of others.

7. Acknowledge the social nature of learning by encouraging the interaction of the teacher with students and students with one another. (Ekpenyong and Edokpoler, 2016)

Implications of constructivism theory in teaching and learning

Constructivism is that learning which is an active process. Information
may be imposed, but understanding cannot be, for it must come from within. Constructivism requires a financial accounting teacher to act as a facilitator whose main function is to help students become active participants in their learning and make meaningful connections between prior knowledge, new knowledge, and the processes involved in learning. Brooks and Brooks (1993) summarize a large segment of the literature on descriptions of "constructivist teachers". They conceive a constructivist teacher as someone who will:

- encourage and accept student autonomy and initiative; Kato and Kmaoi (2001), child becomes very autonomous refusing to be govern by reward and punishment.

- use a wide variety of materials, including raw data, primary sources, and interactive materials and encourage students to use them;

- inquire about students' understanding of concepts before sharing his/her own understanding of those concepts;

- encourage students to engage in dialogue with the teacher and with one another;

- encourage student inquiry by asking thoughtful, open-ended questions and encourage students to ask questions to each other and seek elaboration of students' initial responses;

- engage students in experiences that show contradictions to initial understandings and then encourage discussion;

- provide time for students to construct relationships and create metaphors;

- Assess students' understanding through application and performance of open-structured tasks.

Hence, from a constructivist perspective, the primary responsibility of the financial accounting teacher is to create and maintain a collaborative problem-solving environment, where students are allowed to construct their own knowledge, and the teacher acts as a facilitator and guide.

Strategies of Using Constructivist Method of Teaching and Learning

Learning through real world experiences with others allow students to grow and understand things more easily. The following are different strategies of applying constructivist teaching strategies in the classroom in order to enhance effective teaching and learning discussed by Gray Kerry (2018).

1. One of these strategies is activating prior knowledge before beginning a lesson to help prepare students to connect new information. Prior knowledge can be activated using a KWL charts; document what students 'know', 'want' to know, and have 'learned' in a learning segment. The construction of knowledge is the intentional learning process where the student links new information with prior knowledge (American Psychology Association, 2008). For effective content retention, new learning must be linked to a student's

prior knowledge. (Hawley & Rollie, 2007; Vosniadou, 2007). Piaget's schema theory states activating prior knowledge before reading is essential; because according to his research when we can connect something "old" to something new it helps us better understand the new. Prior knowledge should be activated before students begin new content (Bransford et al., 2000, Gaddy et al., 2002). The following researchers have showed the importance of prior knowledge to student learning:

- Prior knowledge accounts for the largest variable in student achievement (Marzano, 2000; Wilson et al., 2006).

- Prior knowledge is the basis for all future knowledge (Marzano et al., 2000b).

- Prior knowledge "constitutes a starting point for the construction of new knowledge" (Garrison, 2004, p. 378).

- Prior knowledge can be a significant and accurate predictor of performance and facilitates new learning (Thompson & Zamboanga, 2004).

- Prior knowledge is a fundamental factor for learning new material (Myhill & Brackley, 2004).

2. Anticipation guide: Ask students questions about what they are getting ready to learn, giving them the opportunity to guess the correct answer, which engages them and helps them prepare for a new learning experience.An anticipation guide is used before reading to

activate students' prior knowledge and get students excited and curious about a new topic. Before reading, students listen to the teacher or another student state key ideas about the concepts in the text. They can also read several statements about the key concepts presented in the text. The statements are usually put in a form where student say they agree or disagree (Reading, 2015). Teacher's can assist children in developing background knowledge by: Including techniques in lessons such as chapter previews or anticipation guides.As students begin to develop a conceptual framework for their own learning and understanding, they build a repertoire of background experiences from which to draw" (Echevarri?a, Vogt, & Short, 2013). Teachers in the lesson are scaffolding and students are actively involved in discussion about each of the statements in the guide. When a teachers scaffolds for his/her students it provides them with the necessary skills and understanding to correctly complete, read, or do the lesson/activity. In this activity the teacher can model or scaffold the material at first, but remove when students start to understand (Gunning, 2012).

3. Using Mind Maps: a way of graphically organising thought. Mind maps begin with a general idea from which related information branches out, becoming increasingly more specific. The mind map as a research method was first applied

in late 1970s by Novak (1998). In his concept mind maps are understood as diagrams expressing significant relations between terms in the form of statements. These are represented by links between terms which describe their mutual relations. This concept was later adapted by Ahlberg (2004). Buzan (2010) says the mind maps thus can be understood as external expressions of knowledge integrated in individual's mind. He emphasizes the mind map is not either "correct", or "incorrect", but it is always accepted in a certain context, while it could be rejected in another one. The mind maps can be used in different phases of instruction, e.g. for revising, practising and fixing the knowledge, and as a means of feedback. Novak (1998) distinguishes four ways how the mind maps can be used, i.e. as learning strategies, teaching strategies, means to forming concept and content of single subjects and the instruction as the whole, and a means of collecting information about learner's understanding of the learning content

4. Using classification strategy: Here the student begins with something specific and increasingly put into broader categories. E.g, a teacher may show students a chart of solved trading, profit and loss accounting and allow the students to figure out what are the items that makes up trading, profit and loss account. The same process is used when a student sorts objects, words

and concepts. Sorting is putting specific things or items into a broader category.

5. Compare and contrast strategy: these allow students to make connection by identifying similarities and differences. Example, the similarities and difference between subsidiary books of account and final account.

CONCLUSION

If the efforts in reforming education for all students are to succeed, then the teacher must focus on students. Educators must accept the fact that knowledge is constructed in action and must be constructed by individual knower's; instruction must be student-dominated where teachers function as facilitators. Baker & Piburn (1997) further claim that knowledge is built in social contexts; pedagogy must encourage student-to-student interactions and collaboration. It is a well-known fact that knowledge construction is strongly influenced by prior experience and learners make sense of the world by synthesizing new experiences into what they have previously come to understand in their daily life (Ultanir, 2012). What children learn is not a copy of what they observe in their immediate environments but comes from the result of their own thinking, reflection and processing information (Steele, 2005). In addition, knowledge is built in social contexts; teaching and learning processes must encourage student-to-student interactions. Further-

more, knowledge construction is strongly influenced by prior experience; students must be treated as individuals. Learning is more effective when a student is actively engaged in the learning process rather than attempting to receive knowledge passively. In a constructivist classroom environment, students work primarily in groups and learning is interactive and dynamic. There is a great focus and emphasis on social and communication skills, as well as collaboration and exchange of ideas. This is contrary to the non-constructivist classroom in which students work individually, learning is achieved through repetition, and the constructivist methods is strictly adhered to and are guided by a text book. A constructivist teacher would have his or her classroom focus on real life problem solving, problem-based learning (PBL), independent investigation, and the pursuit of personal interests, simulation, discussion collaborative learning, think-pair share, and the utilization of higher-order thinking skills. Research studies in cognition, authentic learning, and student engagement support claims that student-centered teaching is a beneficial teaching strategy for all students, including students with special needs (Brooks & Brooks, 1993; Larson & Keiper, 2007).

The constructivist method has shown to be an effective teaching method because it involves the use of the eyes, ears and the hands. It is

generally believed that what you hear, you tend to forget; what you see tends to last long in one's memory; while what you see, hear and do remains in the memory. This correlates the quote from Confucius a Chinese philosopher and reformer "What I hear and I forget. I see and I remember. I do and I understand". Researchers have shown that, if these three senses come to play in the teaching and learning process, they help the learners' retention and as such enhance academic performance. Financial accounting teachers need to reflect on their practice in order to apply these ideas to their work. This gives the student tools to keep learning and learning. With a well-planned classroom environment, the students learn how to learn and make them an expert of the subject.

RECOMMENDATIONS

The following recommendations are outlined:

1. Students, parents and teachers are part of the Every Student Succeeds Act. All teachers must be trained on the constructivist teaching methods in order to make Every Student Success Act a success. A balanced approach to these recommendations is to put the student first.

2. Constructivist teaching method should be adopted by teachers in order to produce functional students who could effectively exploit their environment by adequately acquiring the necessary vocational skills that will enable them fit into the society.

3. The government/curriculum planners should incorporate the constructivist instructional approach into the financial accounting curriculum, and the government/ school authorities should adequately train financial accounting teachers on how to use the constructivist technique by exposing them to constructivist method of teaching through workshops and seminars.

4. Administrators must equally make funding available to train teachers across all school districts and encourage the support of non-teaching staff to make constructivist teaching a reality. And comprehensive research should be carried out locally and nationally on constructivist method of teaching in secondary education in Nigeria.

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