Constructivism and Classroom Interaction

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Abstract: The paper observed classroom interactions from constructivist’s approach. It reviews Constructivist theory by Piaget and Vygotsky (1978) to explain how classroom interactions can be improved. Constructivism is a new approach in education that claims learners are better able to understand information they have constructed by themselves than becoming passive recipient of knowledge. According to the theory, learning is a social advancement that involves language, real world situations, and interactions and collaborations among learners. Based on the theory, learning involves mastery, self-paced and self-study, which is not restricted to the traditional classroom with minimal interaction. The theory implies that learning can also be in a virtual environment. The paper also recommends areas of improving classroom within the framework of Constructivist approach.

Keywords: Constructivism, Theory, Classroom interactions.

1. Introduction

In any formal education system, most of the school activities take place in the classrooms. Classroom is a built environment where formal learning process takes place (Ojedekon & Okewole, 2011 cites in Wikipedia Online Dictionary, 2005). It is an important context where both students and teachers come into contact to share information in their quest for knowledge. For the instructor,
classroom time is a golden opportunity to meet face to face with students, delivering the teaching materials effectively with the aim to ensure that students are learning what is being taught. On the other hand, the students are expected to be present on time and participate actively to absorb, seek and apply the skills and knowledge shared in the classroom (Wade 1994). This relates to classroom interaction. According to Ojedekon & Okewole (2011), classroom interaction involves reciprocal actions that take place in a room, in a school, between the teacher and the students. This implies that the teacher formally instructs the students, while the students react in response to the teacher’s instruction.

Conducive classroom environment involves two way interactions between students and teachers. This type of classroom environment stimulates learning and makes both the instructor and students feel satisfied, which eventually leads to effective learning process. According to Wade (1994), most students can obtain the benefit such as the enjoyment of sharing with others and learn more if they are active to contribute in discussion. Effective learning process occurred when both instructors and students interact and actively participate in the learning activities. Experience had shown that students do not actively participate or are always passive in the classroom despite encouragement and use of various teaching methods by the teacher to stimulate active participation from the students. It is the concern on the students participation that led to this study, it is undertaken to investigate the level of students’ active participation in the learning process. The objectives of the study are to identify nature and to examine the factors influencing students’ active participation in classroom.

2. Theoretical Framework

Jean Piaget and Lev Vygotsky are two eminent figures in the development of constructivist theories in the year 1978. They share the common belief that classrooms must be constructivist environments; however, there are differences in terms of their theories and variations as to how constructivism should be carried out in classrooms.

Constructivism is a new approach in education that claims humans are better able to understand the information they have constructed by themselves. According to constructivist theories, learning is a social advancement that involves language, real world situations, and interaction and collaboration among learners. The learners are considered to be central in the learning process. Learning is affected by our prejudices, experiences, the time in which we live, and both physical and mental maturity. When motivated, the learner exercises his will, determination, and action to gather selective information, convert it, formulate hypotheses, test these suppositions via applications, interactions or experiences, and to draw verifiable conclusions (Abidin, 2007). Constructivism transforms today’s
classrooms into a knowledge-construction site where information is absorbed and knowledge is built by the learner.

In the constructivist classroom, the focus tends to 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 like empty vessels to be filled. In the constructivist model, the students are urged to be actively involved in their own process of learning. In the constructivist classroom, both teacher and students think of knowledge as a dynamic, ever-changing view of the world we live in and the ability to successfully stretch and explore that view - not as inert factoids to be memorized.

2.1. Key Assumptions of the perspective

1) What the student currently believes, whether correct or incorrect, is important.
2) Despite having the same learning experience, each individual will base his/her learning on the understanding and meaning personal to them.
3) Understanding or constructing a meaning is an active and continuous process.
4) Learning may involve some conceptual changes.
5) When students construct a new meaning, they may not believe it but may give it provisional acceptance or even rejection.
6) Learning is an active not a passive process and depends on the students taking responsibility to learn.

The main activity in a constructivist classroom is solving problems. Students use inquiry methods to ask questions, investigate a topic, and use a variety of resources to find solutions and answers. As students explore the topic, they draw conclusions, and as exploration continues, they revisit those conclusions. Exploration of questions leads to more questions. There is a great deal of overlap between a constructivist and social constructivist classroom, with the exception of the greater emphasis placed on learning through social interaction, and the value placed on cultural background. For Vygotsky, (1978), culture gives the child the cognitive tools needed for development. Adults in the learner’s environment are conduits for the tools of the culture, which include language, cultural history, social context, and more recently, electronic forms of information access.

In social constructivist classrooms, collaborative learning is a process of peer interaction that is mediated and structured by the teacher. Discussion can be promoted by the presentation of specific concepts, problems or scenarios, and is guided by means of effectively directed questions, the introduction and clarification of concepts and information, and references to previously learned material.
2.2. Role of the Teacher

Constructivist teachers do not take the role of the ‘sage on the stage’. Instead, teachers act as a ‘guide on the side’ providing students with opportunities to test the adequacy of their current understandings. Based on Constructivists, the following theory is arranged for teachers:

2.3. Theory

- The educator should consider the knowledge and experiences students bring to class.
- Learners construct their knowledge through a process of active enquiry (discovery) is facilitated by providing the necessary resources.
- Knowledge is actively constructed & learning is presented as a process of active discovery.
- Provide assistance with assimilation of new and old knowledge.
- Learning program should be sufficiently flexible to permit development along lines of student enquiry.
- Due to its interpretive nature, each student will interpret information in differently.
- Create situations where the students feel safe questioning and reflecting on their own.
- Present authentic tasks to contextualize learning through real-world, case-based learning environments.
- Support collaboration in constructing knowledge, not competition.
- Encourage development through inter-subjectivity.
- Providing Scaffolding at the right time and the right level.
- Provide opportunities for more expert and less expert participants to learn from each other.

2.4. Role of the Students

The expectation within a constructivist learning environment is that the students play a more active role in, and accepts more responsibility for their own learning. The theory also brings out some activities expected of a student as an active participant in the learning process as follows:

2.5. Theory

- The role of the students is to actively participate in their own learning.
- Students have to accommodate and assimilate new information with their current understanding.
- One important aspect of controlling learning process is through reflecting on their experiences.
Students begin their study with pre-conceived notions.

Students are very reluctant to give up their established schema/idea & may reject new information that challenges prior knowledge.

Students may not be aware of the reasons they hold such strong ideas/schemata.

Learners need to use and test ideas, skills, and information through relevant activities.

Students need to know how to learn or change their thinking/learning style.

Because knowledge is so communally-based, learners deserve access to knowledge of different communities.

For students to learn they need to receive different 'lenses' to see things in new ways.

Learners need guidance through the Zone of Proximal Development (ZPD).

In social constructivism tutors and peers play a vital role in learning.

2.6. Implication of the Theory

According to constructivist theories, learning is a social interaction that involves the use of language in real world situations, and interaction and collaboration among learners. The learners are considered to be central in the learning process. Constructivism transforms today’s classrooms into a knowledge-construction sites where information is absorbed and knowledge is built by the learner. The knowledge construction sites may not be restricted to classroom interaction since learners can learn electronically from a distance, anywhere, anytime.

In constructivist classrooms, unlike the conventional lecturer, the teacher is a facilitator and a guide to students. He plans, organizes, guides, and provides directions to the learner, who is accountable for his own learning. The teacher supports the learner by means of suggestions that arise out of ordinary activities, by challenges that inspire creativity, and with projects that allow for independent thinking and new ways of learning information. Students work in groups to approach problems and challenges in real world situations, which in turn, lead to the creation of practical solutions and a diverse variety of student products. Constructivist theories have found more popularity with the advent of personal computers (PCs) in classrooms and homes, etc. The PCs provide individual students with tools to experiment and build their own learning at their own pace. With the use of the web, the learner can now conduct research, interact with diverse populations, share ideas, and work on group projects (Abidin, 2007). The assessment tool in a constructivist classroom is not a test or a quiz, rather it is the learner product; most of the time, this is in a portfolio format that has been designed by the learner.

2.7. Assessment of the Theory
Constructivists believe that assessment should be used as a tool to enhance both the student’s learning and the teacher's understanding of student's progress. It should not be used as an accountability tool that serves to stress or demoralize students. Types of assessment aligned to this epistemological position include reflective journals/portfolios, case studies, group-based projects, presentations (verbal or poster), debates, role playing etc. Within social constructivism particularly there is greater scope for involving students in the entire process (Tatar, 2005):

1) Criteria
2) Method
3) Marking
4) Feedback

Mayer and Turner (2002) state that rather than saying ‘No’ when a student does not give the exact answer being sought, the constructivist teacher attempts to understand the student's current thinking about the topic. Through nonjudgmental questioning, the teacher leads the student to construct new understanding and acquire new skills.

3. Factors Affecting Students’ Active Participation in Lesson

Learning is a process of acquiring new or modifying existing knowledge, skills or behaviors. Therefore, if learning is defined as quest for knowledge, skills or behaviors, the students need to be active in order to achieve their learning goals. Students must be proactive to seek the knowledge by seeking as well as receiving information in an outside classroom. How the students seek and receive information is usually reflected in their behaviors in the classroom. The behavior of students in the classroom may range from passive to active participations (Mohammad, 2011).

Four types of students’ behaviors in the classroom are: full integration, participation in the circumstances, marginal interaction, and silence observation (Liu, 2001).

- **In full integration**, students engage actively in the class discussion, know what they want to say and what they should not say. Their participation in the class is usually spontaneous and occurs naturally (Abidin, 2007).

- **Participation in the circumstances** occurs when students influenced by factors, such as socio-cultural, cognitive, affective and linguistic, or the environment and these often lead to students’ participation and interaction with other students and instructors become less and speak only at appropriate time.

- **In marginal interaction**, students act more as listeners and less to speak out in the classroom. Unlike the students who actively participate in the classroom discussion.
Lastly, in silence observation, students tend to avoid oral participation in the classroom. They seem to receive materials delivered in the classroom by taking notes using various such as tape-recording or writing. Based on the various types of classroom behaviors, to be an active learner, whenever in the classroom, students must engage actively by playing the roles of information seekers. The acts of asking questions, giving opinions or simply answering question posed by the teacher or fellow students are examples of active type of classroom participation. Enthusiasm and willingness to participate in a classroom through verbal engagements will create conducive classroom environment (Davis, 2009).

Past studies have shown that, there were several factors influencing students’ participation in the process of learning. The first factor lies in the personality of the student. Student with high self-efficacy showed better academic achievement and participating more in the classroom (Pajares, 1996). Thus, if students’ self-efficacy is high, it will enhance their confident level to become more active and to speak more in the classroom. They will show high interest to learn more and know more with asking questions, giving opinions and discussing the topic in the classrooms. Students can become passive in the classroom discussion due to the self-limitations, such that they cannot focus during lecture or leaning time (Sitimahiza, Suryani, & Melor, 2010). Fear of offense, low levels of self-confidence; failure to prepare before class, fear of failing to show their intelligence, fear that their answers will be criticized by the teachers and feeling of confusion, thus becoming less engage in classroom discussions (Fassinger, 2000).

The second important factor that affects the students to participate actively in the classroom is the traits and skills of the instructor. Traits that have been shown by instructor, such as supportive, understanding, approachable, friendliness through positive non-verbal behavior, giving smile and nodded for admitting the answers that are giving by students (Sitimaziha, 2010). Another important factor that influences students to speak up in class is the perception of classmates. One important finding from the study by Sitimahiza, Suryani & Melor (2010) on undergraduate students in the classroom of a university in Malaysia found that the traits shown by peers or classmates play an important role in providing incentives for students to participate in classroom discussion. Besides that, Cayanus & Martin (2004) found that students, who are open-minded, give a motivational effect on the other students to actively participate in class.

Environmental factor such as the size of classroom affect the motivation of students to engage verbally in classroom. A study conducted by Shaheen & Audrey (2010) aims to explore the perception of 172 postgraduate students from three graduate programs in the Wee Kim Wee School of Communication & Information, Nanyang Technological University, Singapore found that 90% of
students felt they to participate in discussion in small groups as compared with in bigger classroom. A classroom equipped with proper lights, fan or air conditioner and other basic facilities will make students to feel comfortable and may encourage them to participate in the learning activities.

Active classroom participation played an important role in the success of education and students’ personal development in the future (Tatar, 2005). Students, who are actively involved, reported higher satisfaction and higher persistence rates (Astin, 1999). Although there have been numerous studies on classroom participation, only 28.9% of the studies involved higher education. Thus, there is a lacking in literature that searched for evidence in secondary schools’ classrooms and from the perspective of students themselves. Tatar (2005) comments that, only few studies have investigated classroom participation from the perspective of students or attempted to discover the reason why some students do not participate even when participation is encouraged. Many previous studies have taken the instructors’ perspective, rather than college aged students. Exploring classroom participation from students’ perspective is important because it provides a firsthand account and insight into their perceptions and these perceptions are their own realities in experiencing classroom participation.

Demographic data (age, gender, level, and grade point) require that the participation of most students can be derailed by one or two negative participators (Deering & Shaw 2010). Fear of peer disapproval is found to be a powerful influence on student participation in the classroom (Weaver & Qi, 2005). Student participation is closely observed by their classmates. Student–Student interactions in the classroom, although mostly silent, can have a powerful effect on decreasing participation (Weaver & Qi, Howard & Henney, 1998). Rolling their eyes, sighing loudly, frowning, and other nonverbal signals sent from nonparticipating students to participating students relay the message that others disapprove of their behavior. Peer disapproval occurs for a variety of reasons. In a class where participation is closely monitored and graded, a frequent contributor to class discussions may be seen as a ‘rate buster’ (Weaver & Qi, 2005). Students may perceive that they will miss out on important class content due to another student’s question or comment. Compulsory or forced participation occurs when the teacher randomly calls upon a specific student without the student having first raised his or her hand. This is also termed cold calling (Dallimore, & Hertenstein, 2004).

According to Dallimore (2004), students have a more positive view of compulsory participation when warned in advance that they may be called upon at any time to discuss content or answer a question posed by the teacher. They also claimed to have prepared more for class when there was a distinct possibility they would be called upon (Dallimore, 2004). Other uses of cold calling on students were found to have a more punitive nature. Teachers report calling on students when they are
perceived as not paying attention, having a private conversation, or are otherwise involved in activity not related to the class.

Non participators are those students who sleep during class, put their head down, read other materials, or engage in other non-participatory behaviors (Weaver & Qi, 2005). These students usually sit in the back of the classroom or around the periphery of the room. They make little or no eye contact with the teacher or other students. Attendance of these non-participators is often more irregular than that of participatory students.

3.1. Strategies of Promoting Active Learning and Effective Students’ Classroom Participation

The following strategies are combination of suggestions to promote active learning and effective students’ classroom participation (Vivian, 2010).

1) Think, pair, share—present a question or problem. Allow for a few minutes for students to think about the challenge. Then one student shares as the other listens. Then the second repeats to the first what they said and they check for clarity or correct any error.

2) In most classes, a small number of students do most of the participation; it is common for one or two students to answer most of the questions. One way to get more students to think about your question is to ask students to write the answer. Then you can call on someone who does not usually volunteer and perhaps they will feel better about answering a question.

3) Ask students to give non-verbal responses as a group in response to questions. This allows the teacher to check for understanding, getting feedback from all students, and has an added advantage of allowing all students to be active participants. Non-verbal responses work well for short, simple answers. Encourage students to give the responses in a way that they are sharing them with you, rather than with the entire class.

4) Encourage students to give positive feedback to students who have come to the board or made a class presentation. For example, ‘let’s give Bilal a round applause for that!’ or ‘I think Fahad deserves an ‘oh, yeah’ for that’. It encourages students to become more active, and its fun!

5) Do not allow students to opt out. If a student cannot answer a question, move on to another student, but then return to the first student and ask again. This way, students know that saying ‘I do not know’ doesn’t make them exempt from thinking and paying attention.

6) Allow students to present part of a problem and then ‘pass the pen’ to a classmate of their choice.

7) After asking students to work in pairs, ask them to present at the board together.

8) Give students a clue regarding the kind of response that you are expecting.

9) Give students a minute to write their thought before anyone is called upon.
10) Break students into small groups to discuss the answer; then bring them back to the whole group.
11) Arrive early to class and chat with students informally. Greet students by names as they enter the class. Stand at the door at the end of class and say good bye to students by name. This helps them feel more comfortable; they are more likely to take the risk of contributing in a class in which they are comfortable.
12) Use non-verbal means to invite people to participate, sit close to students, and make eye contact with them individually, move around the room, or sit in different locations.
13) Make it your goal to verbalize each student’s name at least one time during each class.

4. Conclusion

Constructivists that currently practice education believe more in learning by doing. If a child is able to experiment for himself, the learning will be more profound. Constructivists then focus on a different aspect of education. Research has seen the relevance that Constructivist ideals have in today’s educational practices, as real-world Constructivist learning situations are more motivating to students through practical application of knowledge.

References

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