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CONSTRUCTIVISM PHILOSOPHICAL PARADIGM: IMPLICATION FOR RESEARCH, TEACHING AND LEARNING

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ABSTRACT: *The constructivism philosophical paradigm is an efficient tool that can yield many benefits when implemented in the carrying out of research in diverse field of study as well as in undertaking teaching and learning activities at any educational level. There was the need to adopt the qualitative research's powerful tool thus, document analysis to present a literature review on the subject to enlighten researchers and teachers of the great imports, rich and useful information that they can glean from this vibrant paradigm of philosophy. The paper projects, how researchers can be coached with this philosophical paradigm in their selection of research design, instrumentation, theoretical framework and data analysis procedures. It recommends viable instructional strategies that teachers can employ for instructing learners in the constructivist approach. The paper contends strongly that the constructivism philosophical paradigm provides a firm foundation for researches, especially in humanities, education and other behavioral researches while maximizing students' learning outcomes when employed in teaching and learning activities.*

KEYWORDS: Constructivism, Philosophy, Research, Instructional Strategies, education

INTRODUCTION

There are many philosophical paradigms in existence today due to the advancement in the human way of thinking and diverse ways of explaining the occurrence and implications of the phenomena existing in the world. The two paramount theories, normally referred to as the 'traditional philosophical paradigms' namely positivism and interpretivism have given birth to numerous other philosophical paradigms. All of them have roots in one of the traditional ways of philosophizing. This paper seeks to delve into the constructivism paradigm whose mother is the interpretivist paradigm of philosophy. It seeks to explain in detail the meaning of the constructivism paradigm, describing its unique features while discussing vividly how this ever growing philosophical approach is gaining popularity in the fields of research as well as teaching and learning. It aims at helping researchers in knowing precisely when and how to use this philosophical paradigm in studying phenomena. Also, it would assist instructors in the 21st century with expert advice on

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how this philosophical paradigm can be implemented in the teaching and learning activities carried out in the classroom to achieve optimum learning outcomes. The researcher relied on documentary analysis of data on constructivism as told by scholars and personal observations of the philosophical paradigm at work in some Secondary and Tertiary institutions in Ghana.

Definition and Description of Constructivism

Honebein (1996) describes the constructivism philosophical paradigm as an approach that asserts that people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences. It is based on the analogy or basis that people form or construct much of what they learn through experience (Cashman et al., 2008; Hein, 1991). Thus, to the constructivist, constructing meaning is learning; there is no other kind. This nullifies the traditional concept of learning in a 'chew, pour, and forget' thus, learning because of examination with less or no motivation on the application of the learned experience in real life settings.

The constructivist philosophy portrays the idea that learning does not just happen from the traditional method of teachers standing in front of the class and lecturing. However, to the constructivist, learning occurs only when the learner discovers the knowledge through the spirit of experimentation and doing (Kalender, 2007). The brain behind this kind of philosophical approach is best described in Confucius, the renowned Chinese philosopher's quote: "I hear and I forget. I see and I remember. I do and I understand." What is the meaning of his statement? If teachers' spoon feed students with knowledge as a mother does the weaning child, the students will forever be immature, not having the keen ability to make constructive arguments about issues and drawing tentative conclusions of situations. This soon makes them forget what they were taught. If they witness the carrying out of the phenomenon, they may remember through the sensory activity of seeing. The best option which the constructivist philosophers believe and proposes is fully engaging the student in the teaching and learning processes so that his engagement would enable him personally discover the knowledge or 'truth'.

Exponents of Constructivism

Throughout human history, there are many scholars and researchers who have advocated for the vigorous engagement of students in the teaching and learning processes in percentages higher than the teacher. Some of the renowned proponents of this philosophical approach include Jerome Bruner, Jean Piaget, Lev Vygotsky, and John Dewey. They are widely recognized in the academia as the leading figures of the constructivism philosophical paradigm (Honebein, 1996). However, other scholars whose efforts contributed to the realization of this philosophical paradigm, though their impacts

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are seen as marginal include Maria Montessori and George Kelly.

Despite the immense contributions of all these exponents of the philosophical paradigm, Jean Piaget is singled out as the father of the constructivism philosophical paradigm. This is largely because he spearheaded the formalization of the theory of constructivism through his remarkable explanation regarding the mechanisms through which knowledge is internalized by learners to aid them construct knowledge.

Description of the Constructivism Cardinal Processes of Knowledge Construction

There are two main processes through which knowledge are constructed. Kim (2005) suggested that it is through the processes of accommodation and assimilation that individuals construct new knowledge from their experiences. The accommodation process which is the first process in the construction of knowledge involves the framing of one's mental representation of the external world to fit the new experiences s/he has gotten. Thus, the learner gives room for the new experiences s/he has gotten in the mental faculties where the old experiences are already seated.

On the other hand, the second and last process in the construction of knowledge known as the assimilation process where the individual incorporates the new experience he has had into an already existing framework of old experiences without changing that framework. Therefore, the old and the new experiences are made to exist concurrently in the mental framework of the individual. For example, a certain PhD student may feel that attending an educational workshop is not very important based on an old experience he has amassed based on a previously attended educational workshop. His perception of educational workshops may however change when he acquires a new experience of an educational workshop which proved very helpful and relevant. The old experience and the new experience will both co-exist in his mental faculties, but his perceptions of the world may or may not change based on the new experience. Since his experiences contradict with his internal representations, he is likely to change his perceptions of the experience to fit his new internal representations. This can be explained using the conceptual framework designed by the researchers shown below.

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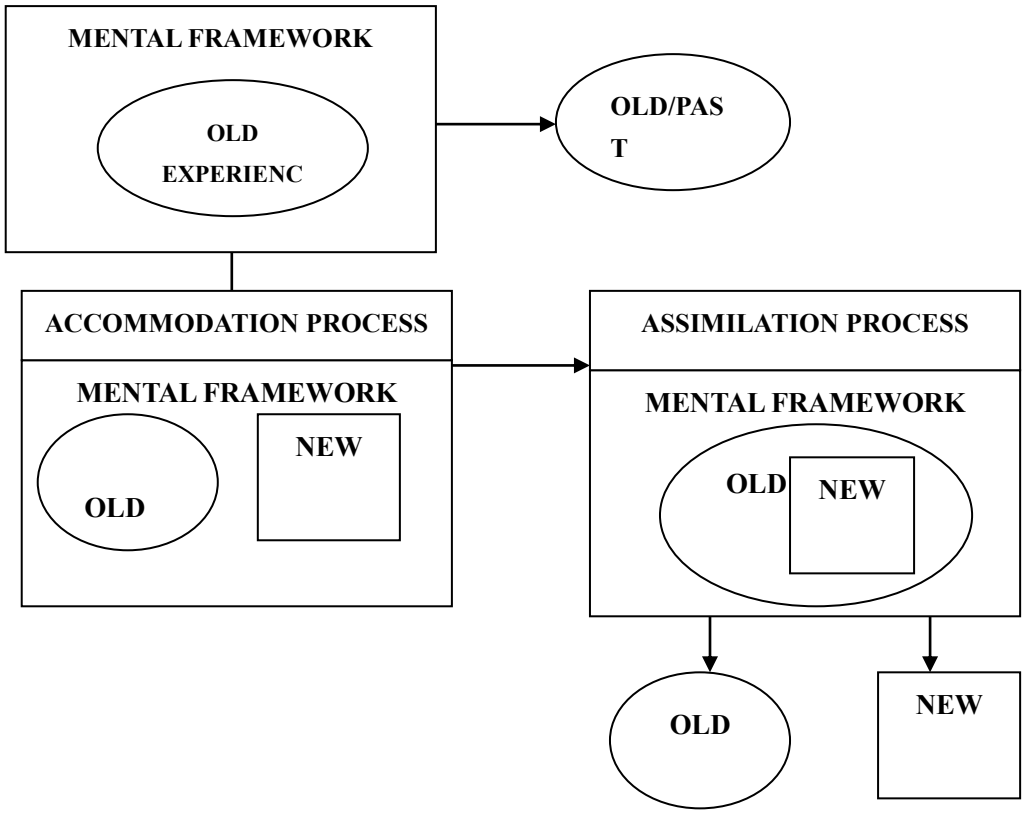

Fig.1: A Conceptual Framework explaining the construction of knowledge
Source: Developed by Researchers

METHODOLOGY

The researcher utilised the qualitative research design for undertaking this review. Its documentary analysis research method was largely used for reviewing literature on the subject while highlighting the relevance of the qualitative research approach. Hefferman (2013) describes document analysis as analysing data from the examination of documents from secondary sources like textbooks, magazines and so forth relevant to a particular study. It involves reading extensive amounts of text data to understand and shed more light on a particular field of study. The interpretive analysis aspect of document analysis that seeks to find hidden meanings so as to decode them for public consumption was used by the researchers in reviewing written materials on constructivism and its relevance to research as well as teaching and learning.

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RESULTS AND DISCUSSIONS

Implications of the constructivism paradigm in Research

Research Design

The constructivism philosophical paradigm is associated with the qualitative research approach. This is the case because the paradigm seeks to understand a phenomenon under study from the experiences or angles of the participants using different data collecting agents. Also, the researcher constructs meanings from the phenomena under study through his own experiences and that of the participants in the study. The researcher evaluates what is said to ascertain the real facts. In his quest to find the true state of the situation under study, he sometimes engages in the activities as they are carried out by residents in the natural settings so that he experiences it himself or see others experiencing it.

Moreover, like the qualitative researcher, constructivists assert that reality is subjective because it is from the individual perspectives of participants engaged in the study and are thus multiple or varied.

Furthermore, the researcher gleans meaning of events through interactions with others in social and cultural contexts. A research grounded in the constructivism philosophical paradigm mostly begins with an open-ended inquiry through research questions. Tentative or valid conclusions are then constructed from the findings from the study. Most researchers even formulate theory or theories from the results of the study.

Data Collecting Instruments

The instrumentation usually administered in this philosophical paradigm is through interview, observation, document review and visual data analysis (Kalender, 2007). However, the researcher is very flexible in carrying out the interviews and thus resorts to the semi-structured form of interview. The researcher asks open-ended questions, encourage informants to explain their unique perspectives. Though the questions to be asked are somehow structured, the researcher is expected to craftily generate questions during the interview to probe and find out the real condition of the phenomena. In some cases, the researcher uses Focus Group Discussion interview (Sets of individuals with similar characteristics or having shared experiences who sit down with a moderator) to have the interview if that is seen as the best tool to yield rich data from people such as elders, workers in the same department, students in the same class and so forth.

In addition, observing the participants of the study in their natural settings, whether as a participant or non-participant depending on the nature of the phenomenon under study

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will assist the researcher in constructing meanings of the phenomenon. Document reviews & Visual data analysis (Data such as artifacts from the research site or records related to the social phenomena under investigation) is carefully analyzed by the researcher to beef up his construction of the phenomena.

Research Methods

The research Methods for the constructivist philosophical paradigm includes Narrative Study, Case Study, Ethnographic Study, Grounded Theory, Descriptive Study, and Phenomenological Study (Kim, 2005). A unique commonality of all these methods that can be adopted is the great deal of time spent in the comprehension of the phenomenon being studied. Researchers spend enough time with the participants in their natural contexts to feel confident that they are capturing the real facts of the phenomenon under study. Spending far too little time in research settings is a serious flaw in constructivist work. Therefore, instrumental and action researches and other forms of research that require a relatively shorter time in drawing conclusions of phenomenon cannot underpin their research in the constructivist philosophical paradigm.

Theoretical framework

Constructivist's researches may begin with a theory though most Constructivists do not generally begin a study with a theory rather they "generate or inductively develop a theory or pattern of meanings" (Creswell, 2003, p.9) throughout the research process.

Data Analysis

Data analysis is done inductively from the data collected from the study. Conclusions are thus drawn from the collected data while applying reasoning or logical data analysis strategies. The researcher starts his analysis by slowly but rigorously moving from specifics to generalizations. In doing this, Bogdan and Biklen (1992) cautions researchers that in a constructivist paradigm data analysis, they are constructing a picture of the phenomenon that takes shape as they collect and examine the parts of the data collected. Therefore, they must keep track of their own influence on a setting, to bracket their own biases, and emotional responses as they construct meanings that clearly paint the true state of the phenomenon studied.

When Researchers must adopt the Constructivism Philosophical Paradigm

This philosophical paradigm is mostly used to underpin researches that eek to understand how individuals make sense of their everyday lives in their natural settings either in the local communities, working environment etc. Also, a researcher who carries out a study with the aim of understanding the influence of social behaviour on the attitude of individuals in a particular community can conveniently adopt this approach of

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philosophizing. In addition, researchers who carry out studies to comprehend the practices of a group or society and its implications towards their attitudes can adopt the constructivist approach. Studies revolving around life histories or life story of renowned personalities in communities as well as the oral history of a clan, ethnic society can be perfectly grounded in the constructivist paradigm of philosophizing.

Implications of the Constructivist Philosophical Paradigm in Teaching and Learning

Instructors who employ the constructivist approach to teaching have to adapt to the role of facilitators and not teachers (Bauersfeld, 1995). While a teacher gives a didactic lecture that covers the subject matter, a facilitator helps the learner to get his or her own understanding of the content. Thus, in the former scenario, the learner plays a passive role and in the latter scenario the learner plays an active role in the learning process. The emphasis thus turns away from the instructor and the content, towards the learner (Gamoran, Secada, & Marrett, 1998).

Furthermore, a teacher tells, a facilitator asks; a teacher lectures from the front, a facilitator supports from the back; a teacher gives answers according to a set curriculum, a facilitator provides guidelines and creates the environment for the learner to arrive at his or her own conclusions; a teacher mostly gives a monologue, a facilitator is in a continuous dialogue with the learners (Rhodes and Bellamy, 1999). Therefore, a constructivist instructor just coaches the learner to construct the understanding of the content or subject matter as s/he discovers the knowledge by experimenting and sharing ideas with others. The critical goal of the constructivist instructor is to support the learner in becoming an effective thinker. This can be achieved if the instructor plays multiple roles such as being a consultant, a coach, a guide and so forth.

Instructional Strategies for Constructivist Learning

The constructivist instructor can employ instructional strategies that direct the teaching and learning processes, learner-centred rather than instructor-centred. Woolfolk (2010) suggests some of these instructional strategies as Reciprocal Questioning, Jigsaw Classroom and Structured Controversies.

The Reciprocal Questioning involves students working together to ask perplexing questions concerning the content to be studied while searching for answers through research. The Jigsaw Classroom strategy also involves the assigning of parts of the content to be taught to the students in the class either individually or in groups. The students thus become "experts" on one part of a group project and teach it to the others in their group. In the Structured Controversies approach, the students work together to research a particular controversy or topic that steers a challenge because the students

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normally have different opinions of it.

Learning thus becomes an active process in which the learner uses sensory input and constructs meaning out of it. The crucial action of constructing meaning of the content is mental. It happens in the mind. Physical actions and hands-on experience may be necessary for learning, especially for children. The constructivist teacher must also provide activities which engage the mind as well as the hands of the learners. This is what John Dewey refers to as 'the reflective activity' (Kim, 2005).

Learning is a social activity in a constructivist classroom because it is closely associated with learners' connection with others, such as teachers, peers, family as well as casual acquaintances unlike the traditional classroom where learning is directed towards isolating the learner from all social interaction, and towards seeing education as a one-on-one relationship between the learner and the objective material to be learned (Thirteenth Edition Online, 2004).

Moreover, Kim mentions that the constructivist instructor always considers the learner's relevant previous knowledge (R.P.K.) and tailors or builds the content to be taught on it. The constructivist believes that one needs knowledge to learn and it is highly not possible to assimilate new knowledge without having some structure developed from previous knowledge to build on. Therefore, any effort to teach must be connected to the state of the learner, while providing a path into the subject for the learner based on that learner's previous knowledge.

In addition, the constructivist sees motivation as a key factor essential for learning (Kalender, 2007). The students have to know why they need to learn the content and the benefits they will achieve by doing so. This assertion is also articulated by Kim that 'unless learners "know the reasons why", they may not be very involved in the content taught even by the most severe and direct teaching method' (p.18).

Misconceptions about Constructivism

Constructivism is often misconstrued as a learning theory that compels students to "reinvent the wheel"(Kalender). This is however seen as a misconception by this writer because constructivism is rather appealing to the student's innermost curio about the world. Thus, students do not reinvent the wheel, but, rather, attempt to understand how it turns, how it functions. The students at the end of the day becomes engaged by applying their existing knowledge and real-world experience, learning to hypothesize, testing their theories, and ultimately drawing conclusions from their findings.

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CONCLUSION

Constructivism approach is in fact one of the best philosophical approaches that helps us in understanding the complexities and multiplicity of phenomena especially in this 21st century where creative ideas and inventions marking novelty is earnestly sought through our research and education. The researchers thus recommend that researchers and educational experts, curriculum planners as well as instructors must utilize the ideals of this philosophical approach in their research and teaching and learning activities since it's a powerful tool in constructing concrete and composite meanings of phenomena around us.

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