

RELATION BETWEEN PHILOSOPHICAL ASSUMPTIONS OF ONTOLOGY AND EPISTEMOLOGY AND THEIR RELATION WITH EDUCATIONAL THEORIES

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ABSTRACT

Ontology is the science of ultimate reality or existence. It is objective in nature and also external to human beings. Epistemology is concerned with knowledge its problems, search and acquisition which is critical Epistemology and ontology sometimes go hand in hand because people studying epistemology assume that objects exist, and ontology is the study of existing objects. This concept note tries to evaluation underlying assumptions of Ontology and Epistemology and their relation to educational theories.

KEYWORDS: Ontology, Epistemology, Education, Theories, Assumptions

INTRODUCTION

Ontology is a branch of metaphysics which is concerned with the nature and relations of being and their existence. Ontological questions are prior because they deal with the very nature of 'being'; literally, an ontology is a theory of 'being' (the word derives from the Greek for 'existence').

Ontology addresses "what is the nature of reality?" A philosophical question about reality affects the way we do research or engage in other forms of enquiry.

Epistemology is branch of philosophy which is concerned with knowledge and study of acquiring knowledge. It addresses "how do we know what we know?" what is the relationship between the knower and what is known? Epistemology is the branch of philosophy that deals with the origin, nature, and limits of human knowledge which focuses on the relationship between the knower and the known. Epistemology deals with issues of the possibility and desirability of objectivity, subjectivity, causality, validity and generalizability. Epistemology also deals with the relationship between the researcher and the researched. In addition, most epistemologies imply a moral stance toward the world and the researcher. Epistemology reflects what we can know about the world and how one can know it; literally an epistemology is a theory of knowledge.

Epistemology is fundamental branch of philosophy which search for knowledge. Epistemologists generally determine nature of knowledge and the extent of human knowledge. So, ontology is about what is reality or existing and epistemology is about ways or methods of figuring out reality or existence or truth. Thus, epistemologists have to assume that findings from ontology are real or true before they question about knowledge.

Epistemology and ontology are two sides of a same coin as ontology believes that reality exists and epistemology knows the truth of existing reality. Ontological beliefs dictate epistemological beliefs what the researcher beliefs about the nature of reality will dictate what kind of relationship the researcher should have with whatever is being studied. There are

two basic beliefs of researchers on gathering knowledge i.e. some believe that new knowledge should be gathered in objective way others believe that it should be gathered in subjective way.

Researcher who gathers knowledge in objective way believe that they should be far away from the research setting and should observe as an external in order to get objectivity in the research so ontology leads to realist epistemology where truth can be measured objectively whereas researcher in subjective way is part of the research so ontology leads to relativists they believe that truth is created by meanings and experiences which are created when you talk to them.

In research, methodology is how knowledge is gathered and analyze in a systematic way and it can be divided based on ontological and epistemological beliefs. For example, in an experimental methodology the ontology and epistemology would be linked to realistic ontology and epistemology as in an experiment the true knowledge needs to be discovered and analyzed in objective where the researcher is an externally observes. Thus, epistemology is intimately related to both ontology and methodology.

Ontology involves the study of reality, epistemology focus on methods of acquiring reality

The relationship between ontological perspectives and epistemology in contemporary social science paradigms. The research paradigms focus on the tripartite linkage between ontology, epistemology and methodology.

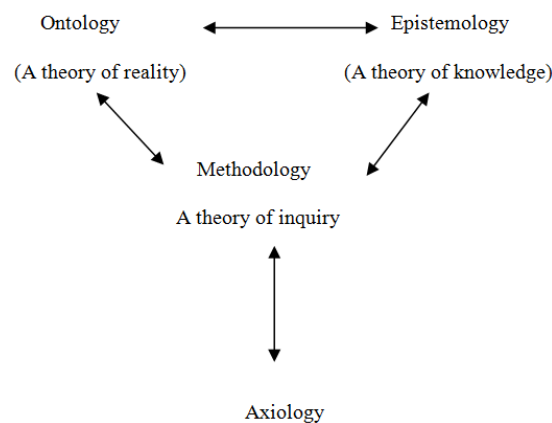


Figure 1

PHILOSOPHICAL ASSUMPTIONS

Each paradigm, positivist, interpretivist and critical theory, makes assumptions about the nature of reality or ontology, how knowledge is constructed, or epistemology and assumes that the values (axiology).

It is important to recognize the assumptions into the research process as these assumptions influence how one understand and interpret the data.

Ontological assumptions and epistemological assumptions tend to overlap. As Crotty points out, “to talk of the construction of the meaning is to talk of the construction of meaningful reality” (Crotty, 1998, p. 10). These assumptions can be divided into two broad categories. Assumptions about the nature of reality (ontology) affect epistemology by placing the researcher (traditional scientific research which is usually quantitative) or interacting with what is researched (naturalistic, qualitative inquiry)

The following table outlines the ontological and epistemological assumptions of positivism.

Table 1

Ontological Assumptions	Epistemological Assumptions
Reality is external to the researcher and represented by objects in space.	The methodology of the natural sciences should be employed to study social reality (Bryman, as cited in Grix, 2004, p. 64).
Objects have meaning independently of any consciousness of them.	Truth can be attained because knowledge rests on a set of firm, unquestionable, indisputable truths from which our beliefs may be deduced (Hughes and Sharrock, as cited in Grix, 2004, p. 64).
Reality can be captured by our senses and predicted.	Knowledge is generated deductively from a theory or hypothesis.
	Knowledge is objective.

Source- Mack, L. (2010). The philosophical underpinnings of educational research

The following are the main epistemological and ontological assumptions of the interpretivist paradigm.

Table 2

Ontological Assumptions	Epistemological Assumptions
Social reality defined from persons in society.	Knowledge is socially constructed through media, institutions and society.
Social reality is socially constructed through media, institutions and society.	“What counts as worthwhile knowledge is determined by the social and positional power of the advocates of that knowledge” (Cohen et al, 2007, p. 27).
Social behavior is the outcome of “particular illegitimate, dominator and repressive factors, illegitimate in the sense that they do not operate in general interest – one person’s or group’s freedom and the power is bought at the price of another’s freedom and power”.	Knowledge is produced by power is an expression of power rather than truth.

Source- Mack, L. (2010). The philosophical underpinnings of educational research

The following are the main epistemological and ontological assumptions of critical theory

Table 3

Ontological Assumptions	Epistemological Assumptions
Reality is indirectly constructed based on individual interpretation and is subjective	Knowledge is gained through a strategy that “respects the differences between people and the objects of natural sciences and therefore requires the social scientist to grasp the subjective meaning of social action” (Bryman as cited in Grix, 2004, p. 64).
People interpret and make their own meaning of events.	Knowledge is gained inductively to create a theory.
Events are distinctive and cannot be generalized.	Knowledge arises from particular situations and is not reducible to simplistic interpretation.
There are multiple perspectives on one incident.	Knowledge is gained through personal experience.
Causation in social sciences is determined by interpreted meaning and symbols.	

Source- Mack, L. (2010). The philosophical underpinnings of educational research

Ontologies and related assumptions about human nature used to implicit to ground and sanction different epistemologies throughout social sciences. Ontological assumptions concern the nature of reality. At one extreme phenomenon are regarded as objective in isolation and in relation to each other; at the other extreme phenomena are

considered subjective in isolation and in relation to each other. The former view assumes a single apprehensible reality; whereas the latter view assumes the coexistence of multiple non-apprehensible realities. This may be called the ontological division of scientific norms.

Epistemological refers to the ways to acquire the knowledge (Alan Bryman, 2001). The knowledge those are acceptable in certain paradigms. For example, epistemological in the normative paradigm is how the social world can investigate as natural science. Hypotheses have to test by empirical approaches. The results have to be objective through scientific method. In contrast, epistemology in interpretive is acquire the knowledge by investigate the phenomena in many ways, because the social context is different from natural science. Therefore, investigation the social phenomena can result many interpretations. Furthermore, in critical theory, practical issues can construct the knowledge. It tends to change the certain conditions through criticizing the practical, politics, and social issues. Therefore, the results can be subjective.

Epistemological assumptions, on the other hand concern the nature of knowledge. At one extreme knowledge is assumed to be value free & thus independent of the researcher; at the other extreme, knowledge is assumed to the value laden and thus dependent on the researcher.

They characterize ontological perspectives along a continuum which is anchored at one extreme by a purely subjectivist orientation that reality is a projection of imagination and anchored at one extreme by the purely ‘objectivist orientation that reality is a projection of imagination, and anchored at the other extreme by the purely objectivist orientation that reality is a concrete structure.

ONTOLOGY/EPISTEMOLOGY RELATION TO THEORY

Behaviorism

The philosophical assumption underlying behaviourism is based on biological and scientific experimentation on animals. Behaviourism is an ontology based on the belief that what appears to exist depends on how people are conditioned to behave. Thus the ontology (reality) depends on the human conditioning. Pavlov’s classical conditioning is based on the idea of contiguity of response and stimulus whereas Skinner’s operant conditioning is based on the law of effect (reinforcement) and thus reward is necessary for conditioning. Thus the science of reality (ontology) depends on the content and pattern of conditioning. Epistemology is concerned with the theory and nature of knowledge. It discusses philosophically truth, validity of knowledge, limits of knowledge and nature of knowledge, knower and known etc. Thus behaviorism theory is based on belief that behaviours are acquired through conditioning which occurs through interaction with the environment so ontology is about the reality and epistemology is about ways (Knowledge) of finding reality.

Cognitivism

The underlying concepts of cognitivism involve how we think and gain knowledge. Cognitivism involves examining learning i.e. reality (Ontology), memory, problem solving skills which focus on the acquisition of knowledge (epistemology) and is described as mental activity that how learners receives, organize, stores and retrieve information which is basically information processing by human mind. Thus, cognitive theories view learner as an active participant in the learning process and stresses on the acquiring the true knowledge.

Constructivism

The philosophical assumptions underlying constructivism is both from behavioral and cognitive theories. As behavioral assumptions underlies learned behavior is a result of conditioning whereas cognitive theories emphasize making knowledge meaningful and helping learners organize and relate new information to existing knowledge in memory. So, ontology and epistemology has its relation.

But Constructivism does not share the same belief of knowledge as behaviorists and cognitivist theory do. Constructivist approach focusses on constructing their understanding and knowledge through its own experiences and reflecting on those experiences. Thus, to create knowledge is concerned with epistemology and to reflect on the reality of understanding is ontology. The constructivist view learner as an active participant in creating his/her own understanding of knowledge through experiences (like experimentation) and then to reflect on their own change in understanding

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