



## MAIN EPISTEMOLOGICAL APPROACHES

Samadova Oydin

Teacher, Pedagogical institution of Termiz State University

+9989 97 534 35 36, email: gulnozaqurbonova@mail.ru

### Annotation

The President of the Republic of Uzbekistan Shavkat Mirziyoev has signed several documents in order to reform the higher education in the country. The purpose of all those documents is to train highly qualified specialists in the country. The President says: “We will direct the whole power and capabilities of our country and society so that our youth can think independently, possess intellectual and spiritual knowledge, can become people who can compete with their peers in any sphere on a global scale and be prosperous and happy”.

**Keywords:** knowledge, notion, epistemological, education.

The President also noted to improve the quality of foreign language learning and teaching in the country. The reforms in this sphere had begun earlier, a lot of Decrees and laws were adopted in the aim of reforming foreign language learning system. Especially, the last Decree of the President PQ-1875, issued on December 10, 2012 has played an important role for the teacher of foreign languages in Uzbekistan. Under this Decree new standards, of continuous education, curriculum for foreign language teaching is being developed. The content of textbooks and teaching materials is also changed. English is being taught from the first forms of the secondary schools.

Although these reforms are being taken during the last years, this was aimed from the first years of Independence of the country. In 1997, the President noted: “In the process of higher school reformation, we must consolidate their contacts with higher educational institutions in other countries. It`s necessary to promote the encouragement of foreign teachers”.

It would be expedient to organize the education of our graduate students in the educational centers of developed countries without interference of any ideology.

For a long time, there has been a lot of discussion about how languages are used and learnt. Until the middle of the twentieth century, many people believed that, in order to speak or write the best kind of English, you had to use complete sentences, which were grammatically correct.

People learning English wanted to learn to write and speak this 'Standard English'. They also wanted to sound like native speakers of English from the Home countries. Two things have happened to change these ideas.





Knowledge and how people acquire knowledge has fascinated human beings from the ancient Greeks to our day. With the emergence of the so-called knowledge economy, knowledge has become one of the most fashionable terms in the political and managerial sphere. As Weiler (2001, p. 36) put it: “The politics of knowledge become less and less separable from the politics of production and profit, arguably the most powerful political dynamics in today’s world”. Halal’s (1997, p. 2) enthusiastic words show this central role of knowledge in the new way of seeing the organization: “We see now that knowledge is the most strategic asset in enterprise, the source of all creativity, innovation and economic value”.

The present paper will present different views on knowledge, focusing mainly on the literature derived from management studies. In this way, the present paper can be seen as a mapping of the different ideas that management literature (and hence entrepreneurship literature) have put forward when referring to knowledge. The main focus will be on knowledge management approaches, since this field of study has been very much involved in relating knowledge to managerial practices. Managing knowledge can be seen as the crucial aspect of the so-called “knowledge economy”, and hence it has strong influence of innovative practices.

The work is organized as follow. First, a brief introduction on epistemological ideas is presented. Three main approaches to epistemology are proposed in a broad sense: innatist/introspection, empiricism/behaviorism and critical philosophy/constructivism. Special emphasis is placed on constructivism since it is argued that it is the predominant view nowadays. Afterwards, knowledge is conceptualized from a managerial perspective. More specifically, the paper differentiates between several knowledge-related terms, such as data, information or expertise. The distinction between tacit and explicit knowledge is also addressed. The paper finalizes summarizing main characteristics of knowledge and its relationship with learning.

### Three main epistemological approaches

The studies made of philosophy and the history of philosophy are countless. It is not the intention of this section to present a long, comprehensive view of the different theories, but to present the bases for the position defended in this paper. One could argue that there are main approaches in traditional epistemology. The first has its origins in Plato and is based on the idea that knowledge exists independently of empirical reality (see e.g. Ackrill, 1973/1997; O’connor and Carr, 1982; Kenny 1994). Descartes would be in line with this position too (see e.g. Markie, 1998; Garber, 1998). The second is referred to as the empiricist approach. Here Aristotle is the main figure and he contends that knowledge is created through experience (see Smith and Rose,





1908; Lear, 1988). And finally a third approach, mainly represented by Kant, which would be placed between the two previous ones, holds that knowledge is a combination of experience and inner capacities (see e.g. Kant, 1781/2003; Stegmüller, 1977).

This is obviously an oversimplification of the approaches, reducing them to some specific characteristics that make them similar. A deeper analysis would be needed in order to fully understand the work of the different authors presented, such as Plato, Aristotle and Kant, but here only few specific aspects of their theories are considered. More recently, the field of psychology has made some interesting contributions to the field of epistemology. Three main approaches have been proposed in classical epistemology, and similarly, three main approaches to psychology are presented: (1) psychology of the inner mental world, corresponding to the epistemology of Plato and Descartes, (2) behaviorist psychology, corresponding to traditional empiricism, and (3) constructivist psychology, related to the third approach to epistemological thought: critical rationalism. The first approach in psychology combined contributions from quite diverse authors: Wundt, Köhler and Freud. It is argued, however, that all of them share the conviction that the inner mental world is crucial in understanding the nature of knowledge. For them, knowledge is in one way or another generated mainly from the inside out. This approach to psychology, therefore, considers an inner world that is partially (if not totally) independent of empirical reality. Knowledge is mainly produced inside our heads from our own resources.

Behaviorism is a psychology tradition rooted in physiology. Behaviorism has its basis in Pavlov's work on classical conditioning (see e.g. Pavlov, 1904 or 1928). For Watson (1924, p. 5), behavioristic psychology attempts to formulate, through systematic observation and experimentation, the generalizations, laws and principles which underlie man's behavior.

Behaviorism is, therefore, not so much concerned with knowledge as it is with behavior. However, learning has a central role in their theories, since learning is the result of a successful training process, in which the conduct has been modified. Skinner, in his work with animals, especially pigeons, managed to "teach" them to get food by pressing a button. This "intelligent" behavior elicited the correct reinforcements – giving food – when the pigeon produced the correct response – pressing the button. Skinner (1953, p. 153) argues: The whole process of becoming competent in any field must be divided into a very large number of small steps, and reinforcement must be contingent upon the accomplishment of each step... By making each successive step as small as possible, the frequency of reinforcement can be raised





to maximum, while the possible aversive consequences of being wrong are reduced to a minimum.

Behaviorists claim that the human mind cannot be studied; only its consequences, behavior, can be empirically studied (Saettler, 1990, p. 13). The different types of reinforcements that we receive will shape our behavior. Thinking is for the behaviorists “sub-vocal talking”, just one type of “implicit habit responses” (Watson, 1924, p.15).

Knowledge is therefore external to the human mind; it occurs “from the outside-in”; it is the association of stimulus and responses (Shuell and Moran, 1996, p. 3340). Complex learning occurs through the operant conditioning of different sequences of responses.

### Constructivism

The third approach to psychology proposed here consists of an intermediate paradigm between the two previous approaches. It is the one that inspired the approach used in this paper, and it is, therefore, presented in more detail. Piaget is probably the most prominent exponent of this approach. He is one of the writers on education who is most frequently cited. His genetic epistemology has had, and still has, a great influence on curriculum design, educational theory and development psychology (Perner, 1996).

Goldman (1969, p. 15) argues that Piaget’s ideas are based on Kant’s epistemological framework. As Saettler (1990, p. 73) has noted, according to Piaget cognition developed through the continuous interaction between learner and environment. For Piaget, the mind operates with schemas, certain patterns of behavior, a “script” that guides our actions in a given context. The adaptation of our schemas to different realities constitutes the process of learning (see e.g. Piaget, 1977). The schema will guide the person’s behavior within a given context (for example, how to behave in a restaurant).

When confronting a new object or situation the script will assimilate or accommodate the new object or situation. Piaget defines assimilation as “the incorporation of objects into patterns of behavior” (Piaget, 1950, p. 9); this means that the script grows, adding a new object (or situation) where the script will be functional. For example, assimilation occurs when a child is confronted with a pencil. The child can use the schema “grab and thrust” that s/he has already used with other similar objects. Using the schema will be successful, and therefore, the object “pencil” will be incorporated into the functional schema of “grab and thrust”.

Accommodation, on the other hand, occurs when the application of previously known schema to a given object is not successful; for example, the child cannot use the





schema “grab and thrust” with a big ball. In this case, it is the “script” that changes, and the child will accommodate his/her schemata to the ball (see e.g. Flavel, 1963; Boeree, 2002). For Piaget (1950, pp. 9-10) this process of accommodation and assimilation is the process of adaptation and further, the process of learning: We can define adaptation as an equilibrium between assimilation and accommodation, which amounts to the same as an equilibrium of iteration between subject and object... Psychological life... begins ... with functional interaction, that is to say, from the point at which assimilation no longer alters assimilated objects in a physico-chemical manner but simply incorporates them in its own forms of activity (and when accommodation only modifies this activity). The whole development of mental activity ... is thus a function of this gradually increasing distance of interaction, and hence of the equilibrium between an assimilation of realities further and further removed from the action itself and an accommodation of the latter [action] to the former [realities].

Piaget proposes a human mind developed through an interactive process between the representation of the reality and the “response” of the reality when we act. Mental development implies that the “scripts”, the schemas, the representation of the reality that guides our actions, become more abstract and less fixed in the specific action.

Shute (1996, p. 3322) defines schemas as an “interconnected set of propositions and concepts representing a situation”. Schemas compound mental models that are “a highly organized set of propositions, concepts, and rules for relating them to one another” (Shute, 1996, p. 3323). Some authors have referred to these mental models as implicit theories (see Chi, Glaser and Farr, 1988). Implicit theories constitute a representation of the world, a map where the different concepts are placed; in fact, they will guide how we confront reality.

When we act, new information is processed and will produce some kind of disequilibrium or cognitive conflict in the schema or theory. The process of adaptation (assimilation or accommodation) will tend to restore the equilibrium. Piaget (1975) maintains that adapted responses to this disequilibrium can be of three types: alfa, beta or gamma. Limón (2001, p. 359) explains the three responses as follows: Alpha answers involve individuals who ignore or do not take into account the conflicting data. Beta answers are characterized by producing partial modifications in the learner’s theory, through generalization and differentiation (generating an “ad hoc” explanation). Finally, gamma answers involve the modification of the central core of the theory.

The beta and gamma types of learning relate to what Ausubel and Robinson (1969, p. 57) called meaningful learning, which refers to learning of “materials that can be





meaningfully incorporated into cognitive structure” (emphasis added). The change in this cognitive structure has also been called “conceptual change” (see e.g. Vosniadou, 1996; Sinatra and Pintrich, 2002).

Piaget’s theories have usually been criticized for not taking into account the social context where learning takes place (Hagström, 2003, p. 4). In this sense, Vygotski is the other main figure in constructivism. His view of child development has usually been referred as social constructivism. For him, the child builds her/his high mental processes with the help of an adult. In fact, as Ardichvili (2001, p. 35) maintains, in Vygotski’s view, mental functioning in the individual can be understood only by going outside the individual and examining the social and cultural processes from which it derives.

For Vygotski, learning occurs first in an interpersonal manner and then it is internalized. His theory of the mind follows a stratified system of development where the concept of a “Zone of Proximal Development” becomes central; he defines it as: actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers (Vygotski, 1978, pp. 85-86).

Therefore, in Vygotski’s view, mental development is the result of interaction with the environment, but is mainly mediated by social agents. In this way, language becomes the main tool in constructing the mental structure. Thus language and thinking are co-constructed (Riviere, 1997).

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