

CHAPTER 5

CONCEPTUAL ANALYSIS OF CONSTRUCTIVIST CLASSROOM MANAGEMENT

5.1 INTRODUCTION

Although education has witnessed a large number of technological advances over the past 50 years, the concept on which the education system is based did not change, especially, at classroom level. Jonnavithula and Kinshuk (2005) note that schools are still organised in very traditional ways. Teaching generally precedes with the assumption that all relevant information can be provided by the teacher together with the few books that can be made available in school. Research by Dollard and Christensen (1996:1) indicates that while considerable attention has been given to constructive teaching strategies, very little has been given to managing classrooms that are based on constructivist philosophy. Also, Henning's (1995:128) research on classroom (from the view of social constructivism) suggests that the emphasis in South African research seems to have been on the content of the curriculum and on policy and governance, but the nitty-gritty of methodology and management in the classroom have not been researched rigorously.

This chapter, among others, presents a literature review and conceptual historical analysis of constructivism; theories compatible with constructivist thinking; characteristic features of constructivist classroom management; the roles of the teacher in a constructivist classroom management; and organisational perspectives on contingency viewpoint.

5.2 CONCEPTUAL ANALYSIS OF “CONSTRUCTIVISM”

In this section, the definition, the philosophical and historical background of constructivism, constructivist assumptions on knowledge and the most widely accepted models/ theories of constructivism will be explored.

5.2.1 The concept “constructivism”

Constructivism is a very broad concept and has many definitions. Despite these multiple definitions, there is greater overlap than there are variations. Prawat (as quoted by Woolfolk, 1995:481) indicates that most agree that it involves a dramatic change in the focus of teaching, putting the learners’ own efforts to understand at the centre of the educational enterprise.

There are numerous scholarly writings on the concept constructivism. Considerable literature (Prawat & Floden, 1994:37; Larochelle & Bednarz, 1998:3; Riesbeck, 1996:49; Jonassen, Myers & McKillop, 1996:94; Morrison & Collins, 1996:107; Jonassen, 1991b:28) perceive constructivism as learning theory based on the assumption/idea that knowledge is actively constructed by the learner. In essence it is claimed that constructivism involves a process whereby learners *construct their own reality or at least interpret it based upon their perceptions of experiences.* (<http://members.lycos.co.uk/jmoreea/im2141.htm>). For Fleury (1998:157), it is a range of ideas about the *production of knowledge and its construction by groups and individuals.* According to Kamii (as quoted by Aldridge, 1999:1), in the Piagetian Framework of constructivism, *knowledge is constructed from the inside*, in interaction with the environment, rather than internalising it directly from the outside. Brewer and Daane (2003:417) see constructivism as a theory according to which each child *builds* knowledge from the inside, through his mental activity, in the environment.

In another perspective, constructivism is perceived as a philosophy of learning that is founded on the premise that we all *construct our own understanding* of the world we live in, through reflection of our experiences (<http://ss.uno.edu/SS?Theory/Construc.html>); and a theory of knowledge with roots in philosophy, psychology and cybernetics, where *knowledge is constructed by the individual* through his/her interactions with the environment (Murphy, 1997a).

According to Spivey (1994:314), theory of discourse portrays both comprehending and composing as the building, shaping and configuring of meaning. People construct meaning when they compose texts and when they read text and hear texts, and, whether in the role of the composer or comprehender (interpreter), they build their meanings on the basis of knowledge that they bring to the task and develop when performing it in some context (ibid:314). Jonassen, Myers and McKillop (1996:95) contend that the knowledge that we build depends upon what we already know, which depends on the kinds of experiences that we have had, how we have organised those experiences into knowledge structures, and what we believe about those experiences. We construct our understanding of the world through interpreting our experiences in the world (ibid:95).

For the purpose of this study, constructivism will mean a process whereby the learner constructs his/her own understanding, reality and knowledge of the world he/she lives in, through reflection of his/her experiences and through his/her interactions with the environment.

5.2.2 Historical background of constructivism

According to Duit (1994:271), constructivism has a long-standing tradition in the philosophy and practice of education, and also in empirical research. However, there are varying insights about its origin. It is a theory of knowledge rooted in philosophy, psychology and cybernetics, anthropology, the natural sciences, semiotics, socio-linguistics and education (Steier, 1994:69; Boethel & Dimock, 2004:5). Slavin (1994:225) and Duffy and Jonassen (1992:4) suggest that constructivist revolution has deep roots in the history of education. In Heylighen's (1997:3) view, it has its roots in Kant's synthesis of rationalism and empiricism, where it is noted that the subject has no direct access to direct reality, and can only develop knowledge by using fundamental built-in cognitive principles to organise experience. In Maia, Machado and Pacheco's (2005) opinion constructivism was originally conceived by Jean Piaget, as a result of research that began in the 1940's. His observations of how children construct their knowledge have, over the years, formed the basis for his work (ibid).

For most scholars (Aldridge, 1999:1; Slavin, 1994:225; Terwel, 1997:196; Woolfolk, 1995:277; Von Glasersfeld, 1998:25; Von Glasersfeld, 1994:6; Scheurman, 1998:8; Slavin, 1994:225; Perkins, 1992:49; Brewer & Daane, 2003:417; Maia, Machado & Pacheco, 2005; DeVries, 2002:3; Confrey, 1994:199; Steffe, 1994:511), constructivist perspectives are grounded in the research of Piaget, Vygotsky, the Gestalt psychologists, Bartlett and Bruner and as well as the educational philosophy of John Dewey. In Slavin's (1994:225) opinion, constructivism draws heavily on the work of Piaget and Vygotsky, both of whom emphasised that cognitive change only takes place when previous conceptions go through a process of disequilibrium in the light of new information; and the social nature of learning and both (Piaget and Vygotsky) suggested the use of mixed ability learning groups to promote conceptual change. Constructivist approaches emphasising discovery, experimentation, and open-ended problems have been successfully applied in mathematics, science, reading, writing and other subjects (ibid:125).

From the first experiments, Piaget developed many theories, describing the stages of a child's cognitive development (Maia, Machado & Pacheco, 2005). Supported by his extensive research work, Piaget established an analysis methodology that set the basis for his learning theory, which is known as Genetic Epistemology (ibid). Literature (Von Glasersfeld 1998:23; Von Glasersfeld, 1994:6; Fleury, 1998:157) indicates that constructivism arose from Piaget (as well as Giambattista Vico, the pioneer of constructivism at the beginning of the 18th century) out of profound dissatisfaction with the theories of knowledge in the tradition of Western philosophy. Giambattista Vico was the first philosopher to speak explicitly of reason as a human activity that constructs scientific knowledge (Von Glasersfeld 1998:25).

Lev Vygotsky is considered to be the most influential figure in the constructivist camp. According to Scheurman (1998:8), accepting Piaget's view of how individuals built private understanding of reality through problem solving with others, Vygotsky further explained how social or cultural contexts contribute to a public understanding of objects

and events. In addition, reality is no longer objective, while knowledge is literally co-constructed by, and distributed among, individuals as they “interact with one another and with the cultural artifacts, such as pictures, texts, discourse and gestures” (ibid:8).

In the following paragraphs, philosophical foundation of constructivism will be explore.

5.2.3 Philosophical foundation of constructivism

Fundamental to understanding the constructivist philosophy, are the answers to the following questions: *How do we come to know that we know? What is knowledge? What is truth? What is reality?* Von Glasersfeld (1994:6) contends that from the beginning, in the 5th century B.C., the sceptics have shown that it is logically impossible to establish the *truth* of any particular piece of knowledge. The necessary comparison of the piece of knowledge with reality it is supposed to represent cannot, be made because the only rational access to that reality is through yet another act of knowing.

Constructivism is a theory of knowledge used to explain how we know what we know. In a complex and multicultural society, *truth* takes many forms, where different contexts and different subcultures support different ways of constructing knowledge, and different ways of understanding what it means to “*know*” something (Morrison & Collins, 1996:108). Vico (as cited by Confrey, 1994:195) holds that “*veum ipsum factum*”, which means that the “*truth*” is the same as the made. By implication, this suggests that what passes for truth at one society may be dismissed as hearsay at another.

Von Glasersfeld (1994:6) contends that at the turn of the 20th century, American pragmatists and a number of European thinkers broke away from the traditional concept of knowing. Constructivists hold that there is something wrong with the old concept of knowledge, and proposes to change it rather than to continue the same hopeless struggle to find the solution to the perennial paradox (ibid:6). The change, according to Von Glasersfeld (1994:6), consists of this:

Give up the requirement that knowledge represent an independent world, and admit that knowledge represents something that is far more important to us, namely, what we can do with our experiential world, the successful ways of dealing with the objects we call physical and the successful ways of thinking with abstract concepts.

In this school of thought, knowing an object does not mean copying it – it means acting on it (Confrey, 1994:196). Also, it means constructing systems of transformations that can be carried out on or with this object. For Von Glasersfeld (1994:7), knowing is an adaptive activity. Thus, knowledge should be seen as a compendium of concepts and actions that one has found to be successful, given the purposes one had in mind. In the constructivist stance, *knowledge* and *reality* do not have an objective or absolute value or, at least, that we have no way of knowing this reality (Murphy, 1997a). Von Glasersfeld (1994:6) contends that in a constructivist perspective, the word “*reality*” is defined differently – it is made up of the network of things and relationships that we rely on in our living, and on which, we believe, others rely on, too. In the same vein, Confrey (1994:197) holds that knowing “*reality*” means constructing systems of transformations that correspond, more or less adequately to reality.

Constructivists believe that human reality is in a sense “created” by interpretation and dialogic process (discursive practices) through which people – bound and influenced as they are by the context of their lives – form and modify meanings (Jordaan & Jordaan, 1998:60). In addition, the facts that do exist about human reality are not facts about fixed reality out there – they are shared by means of which people agree on how to interpret their ever changing reality (ibid:60).

In the light of the above, what particular society calls knowledge does not represent some absolute or ultimate truth, but are simply the most viable interpretation of the experimental world. Meaning is seen as rooted in, and indexed by experience.

5.2.4 Constructivist assumptions on knowledge

Constructivism is not just a theory of learning; it is a theory of knowledge (Confrey, 1998:106). However, it has been applied to educational settings, especially on cognitive development programmes. Central to the vision of constructivism is the notion of the organism as “*active*” – not just responding to stimuli, as in behaviourist rubric, but engaging, grappling and seeking to make sense of things (Perkins, 1992:49).

Constructivists maintain that there are many ways to structure the world, and there are many meanings or perspectives for any event. In this school of thought, meaning is seen as rooted in, and indexed by experience (Duffy and Jonassen, 1992:2). Knowledge is absorbed by progressive structuring of the experience, evolving by means of an interactive process of construction (Maia, Machado and Pacheco, 2005). According to Piaget’s theories, knowledge, at any level, is generated by a radical interaction between the individual and their environment, departing from structures previously existent in the individual (*ibid*).

In McMahon’s (1997:3) view, learners do not transfer knowledge from the external world into their memories, rather, they create interpretations of the world based upon their past experiences and their interactions in the world. Also, constructivism does not deny the existences of “objective knowledge” since there are many ways to structure the world, and many perspectives or meanings for any event or concept. Advocates of constructivism generally claim that knowledge is not discovered and, the ideas the teachers teach do not correspond to the objective reality (*ibid*:3).

Given that constructivism comes in varying shades, its advocates have a considerable number of assumptions about knowledge. These, among others, include the following:

- Knowledge does not attempt to produce a copy of reality, but it serves the purpose of adaptation (Von Glasersfeld, 1998:24);

- Knowledge cannot be transmitted; it cannot be neutral either (Larochelle & Bednarz, 1998:6);
- Knowledge is treated as the *object which is known* (by the scholar or teacher), and it belongs either to the external reality or the subject (Morf, 1998:30);
- Knowledge is the legitimised ways of making sense of experience that have proven to be viable from the perspective of the knower and which guides future actions (Confrey, 1998:106);
- Knowledge is actively built by a cognising subject (Fleury, 1998:157);
- Knowledge is constructed from experience (Merrill, 1992:102);
- Constructivism holds that knowing is an adaptive activity (Von Glasersfeld, 1994:7);
- Knowledge is the end product of a series of intervening processes (Prawat & Floden, 1994:41); and
- Knowledge does not reflect an “objective” ontological reality, but exclusively an ordering and organization of the world constituted by our experience (Confrey, 1994:195).

The essence of constructivist theory is the idea that learners must individually discover and transform complex information if they are to make it their own (Slavin, 1994:225). Constructivism is made up of a number of assumptions, among others, it holds that:

- We do not learn from experience but from our reflection on experience;
- learning is how a person interprets the world;
- learning is an active process where meaning is developed for the basis of one’s own experience;
- the growth of knowledge evolves through social interactions where multiple perspectives are shared and our own perspectives change through collaborative learning, for an example in cooperative learning; and
- learning should be situated in realistic settings, and testing should be integrated with the task and not the separate activity (<http://members.lycos.co.uk/jmoreea/im2141.htm> ; Merrill, 1992:102).

The mind is instrumental and essential in interpreting events, objects and perspectives on real world and those interpretations constitute a knowledge base that is personal and individualistic. Constructivist theories of learning hold that learners must individually discover and transform complex information if they are to make it on their own (Jonassen, 1992:38; Slavin, 1994:225). These theories see learners as constantly checking new information against the old rules and then revising the rules when they no longer work. In epistemological perspective, knowledge is not passively received either through senses or by way of communication, but it is built up by cognising the subject (Heylighen, 1997:1). Thus knowledge is only a perception and; it is not a transferable commodity and not a conveyance.

5.2.5 What are the most widely accepted models/ theories of constructivism?

Like many ideas in education, the concept “constructivism” has several significantly varying versions, underpinned by different assumptions, namely: trivial constructivism, radical constructivism, cultural constructivism, social constructivism, critical constructivism, etc. Killen (2000:xviii) notes that originally, constructivism was used to describe a theory of learning. More recently, it has become associated with a theory of knowledge that says that the world is inherently complex, that there is no objective reality, and much of what we know is contrasted from our beliefs and the social milieu in which we live in (Borich & Tombari as quoted by Killen, 2000:xviii).

Research (Au, 1998:315) suggests four sources of tension in the varying versions of constructivism: Firstly, it arises from the ontological, epistemological, and methodological differences between the competing paradigms constructivism and critical theory. A related source of tension arises because of differences in the political ideologies associated with liberalism and radicalism. Thirdly, another source of tension resides in the differing perspectives of mainstream researchers and the researchers from the underrepresented groups. Lastly, the final source lies between the world of academy and

the world of the school and centers on whether researchers should keep distance from, or be in, the situation being studied.

Despite these multiple versions, the only common link connecting all versions is the premise that knowledge is a social product. There is very little agreement about the basic process: what aspects of knowledge best lent themselves to negotiation, and what it means to negotiate this knowledge (Prawat & Floden, 1994:37). These versions are categorized into three groups.

5.2.5.1 Categories of constructivism

There are many forms of constructivism, which appear to differ along several dimensions including the relative importance of human communities versus the individual learner in the construction of knowledge (Au, 1998:299). From constructivist stance, there are many ways to structure the world, and there are many meanings or perspectives for any event or concept. Hence, there are constructivist approaches in science and mathematics education, educational psychology and anthropology, computer-based education, etc. According to Woolfolk (1995:277-9), there are three categories of constructivism: endogenous, exogenous and dialectical constructivism and these are discussed below:

1 Endogenous constructivism

Endogenous constructivism assumes that new knowledge is abstracted from the old knowledge, and it is not shaped by accurately mapping the outside world. Further, it holds that knowledge is not a mirror of the external world, even though experiences influence thinking and thinking influence knowledge and; exploration and discovery are more important than teaching.

2 Exogenous constructivism

Exogenous constructivism focuses on the ways that individuals reconstruct outside reality by building accurate mental representations, such as, network, schemas and condition-action production rules. Also, it considers learning as building accurate mental structures that reflect “*the way things really are*” in the real world.

3 Dialectical constructivism

Dialectical constructivism suggests that knowledge is constructed based on social interactions and experience and reflects the outside world as filtered through and influenced by culture, language, beliefs, interactions with others, direct teaching and models. In addition, coaching as well as individual’s prior knowledge, beliefs and thinking affect learning.

In the next section, we will look at the type of constructivism on which OBE is based – *social constructivism*.

5.2.5.2 Social constructivism

Lev Vygotsky, a Russian psychologist and philosopher in the 1930’s, is most often associated with the social constructivist theory. He emphasises the influences of cultural and social contexts in learning and supports a discovery model of learning. According to Vygotsky (1978), culture gives the learner the cognitive tools for development. This type of model places the teacher in an active role while the learners’ mental abilities develop naturally through various paths of discovery. In a similar view, Woolfolk (1995:277) notes that social constructivist approaches consider the social context in which learning occurs and emphasize the importance of social interaction and negotiation in learning. In essence, it holds that learning is inherently social and embedded in a particular cultural setting.

For Vygotsky (1978), learning occurs on two planes: from social to individual and from public to private. Learning happens first on the social plane where, through interactions with more knowledgeable others, learners come to understand new concepts and strategies. Individuals eventually use and extend these concepts and strategies to other contexts but meanings and interpretations have been initiated in social interaction rather than in solitary action. Similarly, what is learned transpires first in the public domain, where it is used by more knowledgeable members of the culture and made visible to learners. Through such interactions within a public domain, individuals adopt and adapt what has been observed and begin to use it privately.

Social constructivism views learning as a process of enculturation brought about through social interaction (Duffy & Jonassen, 1992:3; McMahon, 1997:1). Salomon (as quoted by Kampulainen & Mutanen, 2000:144) shares a similar view that learning is not only a construction process that takes place in the mind of an individual but also an enculturation process embedded in the socio-historical and socio-cultural context.

Constructivism goes beyond the study of how the brain stores and retrieves information to examine the ways in which learners make meaning from experience (ibid). At the heart of constructivism is a concern for lived experience, or the world as it is felt and understood by social actors (Schwandt as cited by Au, 1998:299). Constructivists reject the naïve realism of the positivists, the critical realism of the post-positivists, and the historical realism of the critical theorists, in favour of a relativism based on multiple mental constructions formulated by groups and individuals (Au, 1998:299).

Learners can, with the help from adults (parents and teachers) or children who are more advanced, master concepts and ideas that they cannot understand on their own efforts. Hence teachers and parents are regarded as the conduits for tools of culture. In essence, Vygotskian Principles in the Classroom hold that:

- Learning and development is a social and collaborative activity that cannot be “taught” to anyone. It is up to the learner to construct his or her own

understanding in his or her own mind. It is during this process that the teacher acts as a facilitator;

- The zone of proximal development can be used to design appropriate situations during which the learner can be provided with the appropriate support for optimal learning;
- When providing appropriate situations, one must take into consideration that learning should take place in meaningful contexts, preferably the context in which the knowledge is to be applied; and
- Out of school experiences should be related to school experiences. Pictures, news clips, and personal stories incorporated into classroom activities provides the learners with a sense of oneness between their community and learning (<http://www.massey.ac.nz/~Alock/virtual/wittvyg.htm>).

Au (1998:299) states that social constructivism includes the idea that there is no objective basis for knowledge claims, because knowledge is always a human construction. The emphasis is on the process of knowledge construction by the social group and the intersubjectivity established through the interactions of the group (ibid:299). In Hofman's view (as quoted by Mikusa and Lewellen, 1992), tenets of modern social constructivism indicate the following:

- The learner constructs his/her own meaning;
- Learning is contextual;
- Learning is dependent on prior conceptions the learner brings to the experience;
- The key elements of conceptual change can be addressed by specific teaching methods;
- Greater emphasis should be placed on "learning how to learn" than on accumulating facts;
- Teachers can utilise one or more key strategies to facilitate conceptual change; and
- Effective teaching involves learners' existing cognitive structures and providing learning activities to assist them.

In the light of the above, knowledge is socially constructed through interaction with the environment. Learning is not purely an internal process, nor a passive shaping of behaviours, but it is a social construct that is mediated by language via social discourse. Therefore, there is a need for collaboration between teachers and parents to allow authentic learning to occur. In order to effect constructivist classroom management in an OBE setting, this study holds that a thorough understanding of the social construction of knowledge is essential.

5.3 THEORIES COMPATIBLE WITH CONSTRUCTIVIST THINKING

This section presents theories compatible with the constructivist thinking. Complexity theory and chaos theory, and postmodernism will be explored.

5.3.1 Complexity and chaos theory

Basically, complexity theorists are interested particularly in open systems which operate on the “edge of chaos” complex adaptive systems or as exhibiting self-organised criticality. Underlying complexity theory is the assumption that systems are hierarchical and that higher levels may be more than the sum their lower level constituents (Cunnigham, 2001:7). Complexity includes systems which are non-linear and inherently evolutionary; and assumes that order emerges out of chaos, stability is punctuated by rapid change. According to Claassen (1998a:35), traditional modernist view of science is that it discovers immutable laws and truths. Traditional modernism assumes that all science is certain, evident knowledge. Also, it rejects knowledge which is merely probable and judge that only those things should be believed that are perfectly known and about which there can be no doubt. In contrast, complexity theory rejects a linear, reductionist view and accepts that there is no scientific certainty (Jansen and Lukacs as quoted by Claassen, 1998a:35).

Complexity implies the existence of self-organising, unpredictable or random aspects in dynamic matters (Claassen, 1998a:35). Self-organisation becomes possible when a

complex structure, a person or an organisation, is free to interact with its environment. For this reason, constructivists perceive that learning is the result of self-organisation and that verbal explanation cannot lead to understanding. Given that modernist view, education practice relies heavily on individualism and competition, complexity theory implies dramatic implications in traditional education practice. Van Niekerk (as referenced by Claassen, 1998a:37) asserts that complexity theory recognises the holistic unity, totality and interdependence among constituent parts of the system (teaching) that is characterised by dynamic interaction. As a consequence on many years of study, researchers now know that learning through interaction is a promising option (Terwel, 1999:197). In essence, complexity theory rejects reductionism with its concomitant values of individualism and competition (Claassen, 1998a:35).

5.3.2 Postmodernism

According to Claassen (1998a: 38), OBE stands in direct contrast to the previous curriculum as it rejects the modernist roots of the previous curriculum. It has an interpretive epistemology as opposed to the empiricist epistemology of the dominant modernist paradigm (Arjun, 1998:25). In the case of the OBE model for South Africa, Geysers (2000:35) asserts that it has very strong roots in the philosophy of pragmatism.

Postmodernism is a reaction to modernism. However, it has dramatic implications for education (modernist) in terms of aims of education and epistemology, philosophical perspectives on learning theory, teaching methods and more specifically, classroom management. Although, modernism has improved and contributed positively to the quality of the learning theory, it occurred at the expense of other people's quality of learning. Claassen (1998b:127) notes that in the past decades, there has been a gradual shift away from the stark rationalism of modernism to postmodernism which acknowledges doubt, complexity and mystery.

Postmodernism is a philosophical movement or paradigm that came into prominence in the 1960s (Babbie & Mouton, 2001:40; Theron, 1996:71). According to Theron (1996:71), postmodernism is an aesthetic, cultural and intellectual phenomenon; and encompasses a particular set of styles, practices and cultural forms in art, literature, music, architecture, philosophy and broader intellectual discourse. It sees crisis in culture, celebrates an iconoclastic outlook that breaks with claims of universality, and rejects objective certainty (Ozmon & Craver, 1999:349).

Postmodern consciousness responds negatively to behaviourism for its totalising view of scientific objectivity and its reduction of human intentions and actions to a technology on behaviour; and to analytic philosophy because of its affinity with positivism and objectivism (Ozmon and Craver, 1999:352). In a different view, Babbie and Mouton (2001:40) asserts that postmodernism rejects appeals to meta-narratives, celebrates local, specifics and differences, and accepts the link between inquiry and power as given.

The constructivist assumption that “reality” depends on interpretation seems to be compatible with postmodern thought. Tarnas (1991:397) expresses the current postmodern view as follows:

In this understanding the world cannot be said to possess any features in principle prior to interpretation. The world does not exist as a-thing-in-itself, independent; rather, it comes into being in and through interpretations ... the human mind is never outside the world, judging it from an external vantage point. Every object of knowledge is already part of a pre-interpreted context, and beyond that context are only other pre-interpreted contexts.

Postmodernity is a social condition – comprises of particular patterns of social, economic, political and cultural (including educational) relations. According to Babbie and Mouton (2001:40), postmodern approach is a social theory that defends the following claims:

- social scientists are intrinsically linked to their social and historical contexts – any form of value-free social inquiry is mistaken and impossible;

- social reality is constructed and social scientific knowledge is a similar construct of social inquiry; and
- knowledge and power are closely related and mutually independent (this implies that naturalist account of objectivity is totally inappropriate for social science).

With reference to methodology and curriculum, Babbie and Mouton (2001:365) hold that postmodernism hold that the curriculum should not be viewed as discrete subjects and disciplines, but instead should include issues of power, history, personal and group identities, cultural politics, and social criticism leading to collective action. From the postmodernist perspective, the issue of the curriculum is not simply an argument for or against established canons of knowledge, but one that remakes the meaning and uses of canons of knowledge (ibid:365). Babbie and Mouton (2001:363) claim that generally, critical pedagogy urges the teachers to be sceptical of claims to be “objective” knowledge purported to be outside time and ideology because it places knowledge outside the history of human experience and put such knowledge claims beyond criticism and dialogue.

Literature (Claassen, 1998b:127) suggests that postmodernism has dramatic implications for education. In the modernist stance, definition of education is the transmission of knowledge from the teacher to the learner, where it is assumed that there is objective truth that the teacher knows and the learner does not. According to Claassen (1998b:127), the experience (“voice”) of the learner is negated. In contrast, in a postmodernist stance, the concept “education” is seen as helping the learner to construct his/her knowledge own knowledge. Also, knowledge is negotiated because it is a subjective self-construct. This implies that if the learner sees truth in a particular way, the teacher cannot simply discard it (ibid:127).

5.4 CHARACTERISTIC FEATURES OF CONSTRUCTIVIST CLASSROOM MANAGEMENT

The goal-oriented, rational model of management and organisation and the cause and effect understanding of management which is imbued with the values of the mechanistic

worldview, have been questioned over time (Black, 1999). For example, patriarchal institutions such as political empires, the institutional church, the nation state and the modern corporation seem to be profoundly affected by what has happened in the development of human process.

In the traditional school of thought, knowledge can achieve absolute and final certainty; the world is a dualistic world in which the mind is superior to the body; human beings are superior to nature; rational is superior to the irrational; male is superior to the female; and objectivity is superior to subjectivity (Black, 1999). In a mechanistic worldview, leadership is equated with management and represents a symbol of authority, order and control, the powerful means of improving the performance of anything that the energetic manager touches (Rees as cited by Black, 1999).

However, the holistic worldview, in contrast, operates in a reverse direction. Leadership and management are situational variables. With reference to its characteristic features, and the view of knowledge, constructivist classroom management appears to be compatible with the beliefs and assumptions of the holistic worldview. Therefore, constructivist classroom management can be typified as fitting through the lens of emergent paradigm. Both concepts of leadership and management are guided and informed by contingency viewpoint – it rejects a notion that a particular viewpoint, (e.g. traditional or behavioural or systems), is a one size fits all management approach.

Given that reality is seen to be created through processes of social exchange, historically situated, social constructivists are interested in the collective generation of meaning among people (Au, 1998:299). Thus, the characteristic feature with a view of knowledge is relational, tentative and largely perceptual.

Constructivist classroom management has holistic and artistic features. According Black (1999), the holistic worldview takes its distinctive features from the dimensions of any artistic event. Central to the emergent paradigm is the distinctive feature of contextuality. Maykut and Morehouse (1994:13) stress that qualitative research values context

sensitivity, that understands a phenomenon in all its complexity and within a particular situation and environment. Thus the view of phenomena is complex, holistic, ideational and is a product of empirical process.

In the scientific worldview, relationships between entities are characterised by discrete units' hierarchical orders. In contrast, emergent worldview sees the world as a community of subjects that includes all living beings which share the planet with humankind (Black, 1999). It sees reality in terms of relationships which is more concerned with the subjective, with the feeling, with the values and with consciousness (ibid). Leadership from the perspective of holistic worldview is characterised by collaborative partnerships rather than by competition, by process rather than productivity, by learning rather than efficiency (Black, 1999). The contours of the terrain traversed by leaders is shifting as machines and pyramids give way to circles, spheres and fields (ibid). In essence, leadership and management approaches in a constructivist setting, take place on a situational viewpoint. Thus, relationships between entities can be typified as fluid, systemic, integrative orders and largely heterarchical.

Constructivist classroom management has metaphorical descriptive features of a holon. The holon provides the basis for a new principle in the holistic worldview, namely, the whole is always greater than the sum of the parts and paradoxically, the whole is contained in each part while no whole is complete in itself (Black, 1999). Wholeness is the primary reality in the holistic worldview (ibid).

Within the holistic metaphor, the leader is not simply the manager who is responsible for increased efficiency, productivity and profit, but rather an artist (Black, 1999). The leader as an artist is more concerned with insight, symbolism, intuition and stories than with economic performance. For Bremmer (as cited by Black, 1999), the leader the leader is not simply a manager who is responsible for increased efficiency, product and profit, but rather a key artist. The role of the leader as an artist, according to Bremmer (as cited by Black, 1999), is equivalent to that of the conceptual artist who utilises extensive communication systems in the creation of the work so that extremely complex signs,

symbols, images, text and various form of media are designed to include the viewer-consumer in sharing or completing, or consuming complex codes of meaning or services.

Leadership, in this school of thought, is not a position, nor is it a possession. For Blank and Smith (in Black, 1999), it is rather a process, a relationship, a field of interaction in which everyone must learn when it is appropriate to exercise the following part of leading and the leading part of following. Taken further, Rost (in Black, 1999) sees leadership as a relationship – an influence relationship among leaders and followers who intend real changes that reflect mutual purpose. In Hames' (in Black, 1999) opinion, leadership is not a role played by a small number of charismatic people, it is a process of sharing and appreciation – of creating meaning and communicating purpose; a process shared by both leaders and followers.

In the scientific framework, view of causation departs on a linear cause-effect and unidirectional interaction, and explained by deductive reasoning. In contrast, in the emerging paradigm, it is characterised by mutual causation, with multi causal factors, and explained by deductive, inductive and integrative reasoning. In this school of thought, leadership is situational. Wheatly (in Black, 1999) posits that leadership is always dependent upon the context, but the context is established by the relationships.

Leadership, in the emergent paradigm, recognises the ecological connections that exist in the postmodern world. As a process or relationship, it demands a new understanding of power (Black, 1999). This power is underpinned by the principle of subsidiarity. Handy (in Black, 1999) defines subsidiarity as the reverse of empowerment, as the principle whereby the higher order body does not take into account itself as the responsibilities which properly belong to a lower order body. In Black's (1999) view, subsidiarity is not abrogation or delegation of power – power is assumed to lie at the lowest point in the organisation and it can be taken by agreement. Central to this framework of thought, is the assumption in the concept of subsidiarity that power is redistributed because no one in the group has all the wisdom or all the competence. Handy (as cited by Black, 1999)

notes that most energy is out there, away from the centre, and down there, away from the top.

According to Starrat (as quoted by Black, 1999), in a holistic worldview, the leader recognises the limitations of rationality which can solve some problems but cannot ground reasons why one solution is preferable to another in a creative and multi-dimensional view of organisational and social life. In Hermes's (as cited by Black, 1999) view, holistic leadership cannot limit creativity by a narrowly rational approach and is obliged to facilitate the organisation's "capacity for learning for predictable change and variety of possible alternative future".

In scientific paradigm, leadership has its focus in the achievement of organisational goals; and insists on the orientation towards transformation of consciousness and social change. In contrast, leadership in emergent paradigm focuses on both social and global transformation (Black, 1999). The emergent paradigm sees leadership's ultimate aim/goal as the refinement and the achievement of human community. Thus, the view of change/orientations to - the future is indeterminate, unpredictable and morphogenetic.

5.5 ORGANISATIONAL PERSPECTIVES ON CONTINGENCY VIEWPOINT

Gibson, Ivancevich, Donnely and Konopask (2003:395) posit that the demands of a situation are termed contingencies. However, there exists a number of assumptions and views about contingency theory in literature. Contingency theory, among others, according to Theron (1996:50), assumes that: all organisations are open systems; there is no one best universal way of organizing and administering a school; different (management) approaches may be appropriate in subparts of the same organisation; and different leadership styles are appropriate for different problematic situations. For Luthans (1998:532), contingency theories are proactive and are analogous to the development of contingency management as a whole; and relate to specific organisation structures.

This school of thought holds that the most appropriate structure system of management depends upon the contingencies of the situation for each particular organisation. In Ivancevich, Donnely and Konopask's (2003:395) opinion, the contingency viewpoint is aimed at getting away from the dilemma of choosing between the mechanistic and organic models. At the heart of this school of thought is the assumption that there is no best universal structure of management or leadership; and management practices must be tailored to fit the exact nature of each situation (Mullin, 2005:634; Greenberg & Baron, 2003:362; Nelson & Quick, 2003:398; Shermerhorn, Hunt & Osborn, 2000:7; Hersey, Blanchard & Johnson, 1996; Hellriegel & Slocum, 1991:61).

Literature (Mullin, 2005:634; Greenberg & Baron, 2003:362; Nelson & Quick, 2003:398; Shermerhorn, Hunt & Osborn, 2000:7; Hersey, Blanchard & Johnson, 1996) highlights a number of unique and common characteristic features about the contingency approach. Among others, it emphasises the need for flexibility and seeks to explain how one attribute or characteristic depends upon another. Also, it seeks ways to meet the demands of different management situations; and rejects the existence of one "best" or universal way of managing people and organisations.

Classical approach to management suggests one best form of structure and places emphasis on a general set of principle while the human relations approach gives attention to all the structures (Mullin, 2005:84). In contrast, contingency approach suggests a renewed concern with the importance of the structure as a significant influence on the organisational performance (Mullin, 2005:84). At philosophical level, it appears to be compatible to the emerging worldview and the postmodern view of the school as an organisation. This approach, among others, sees the school as: an organised anarchy, an organisation characterised according to structural and outcome variables, metaphoric organizations, and as organisations within the symbolic frame (see Theron, 1996:37-74).

The postmodern view of the school is characterised by flexibility, adaptability, creativity, opportunism, collaboration, continuous improvement and a positive orientation towards problem-solving (Theron, 1996:72). Also, it is characterised by: decision making which

is widely participative; control is exercised through interaction of involved persons; authority is shared and determined by consensus; nature of organisation is flexible; and climate is open (Theron, 1996:56).

To sum up, the concept of “classroom management” is fluid – it takes the shape of the container. Situational variables determine management approach, leadership style, and more specifically leadership roles of the teacher. In essence, classroom management is approached from a holistic view – it moves away from mechanistic approach, and linear cause-effect and unidirectional interaction. Thus, in constructivist setting where the contingency approach is applicable, different situations require different management practices and allowing the use of the other viewpoints separately or in combination to deal with various classroom management problems.

5.6 THE ROLES OF THE TEACHER IN CONSTRUCTIVIST CLASSROOM MANAGEMENT

The teacher is the key figure in promoting an environment (climate) within the classroom that is conducive to teaching and learning. Lemmer (1998:38) notes that effective teaching and learning depends largely on the establishment of a sound relationship between the teachers and the learners in the classroom. A significant body of research suggests that academic achievement and behaviour are strongly influenced by the quality of teacher-learner relationships (ibid:39). Thus, positive teacher-learner relationships are fundamental in effecting the roles of the teacher in a constructivist classroom. Classroom rules and procedures, alone, are not the only social tools in regulating and managing the learner behaviour.

The roles of the teacher, as a classroom manager, seem to be in a state of transition – shifting from traditional/modern to constructivist/postmodern framework of thought. However, the implementation of constructivist curriculum holds incisive implications for classroom management. The organisational structure of the traditional education system will impede the implementation of OBE as the old framework of education system will

not suffice. For Gallie (1999:183), it involves a whole new look at what teachers are supposed to do and the challenges that traditional ways of managing schools; and the way of reporting to parents. This immediately poses the question “What should be changed in classroom management?”

This study holds that at conceptual level, OBE represents a move from an instructionalist approach to classroom management to a constructivist approach to classroom management. The main difference could be related to the leadership role to be performed by teachers. This movement will require that teachers move from a traditional teacher-centred classroom to a learner-centred classroom and that, this raises issues of classroom control and discipline and a change in the traditional teacher-leader role to shared leadership and new social interaction in the classroom, placing high demands on both teachers and learners on the creation and redefinition of classroom roles.

The roles of the teacher in constructivist classroom management vary greatly as compared to traditional classroom management. In traditional practice, the teacher’s role as dispenser of knowledge is to transmit information and direct learners’ actions. In contrast to the traditional practice, Gore (2001:2) notes that the constructivist teacher role, as coach and facilitator, is to help learners process information, facilitate learner thinking. For Smith (1999), the constructivist teacher is described as follows:

- The facilitator that needs to have faith in his or her learners. He/she should see each child as a different person that can succeed in their own unique way;
- Encouraged to ask open-ended, probing questions that encourages the learner to share their knowledge and experiences with other members of the class schema; is an encourager and moderator and helps children feel confident in whatever they can do;
- Provides a "meaningful path" for the learners by providing assistance to help learners create their own understanding; and
- Provides the message that nobody is perfect, and it is alright to make mistakes; and the teachers need to have open communication with each other, the

administration, and other teachers in the district – where they can share their problems, concerns and ideas.

There are many roles that are applicable to the constructivist teacher, among others, they include to do the following:

- Encourage and accept learner autonomy;
 - Use raw data and primary sources along with manipulative, interactive and physical material;
 - Allow learners responses to drive lessons, shift instructional strategies and alter content;
 - Inquire about learners’ understandings of concepts before sharing their own understanding of those concepts;
 - Use cognitive terminology such as *classify, analyse, predict and create* when framing tasks.
 - Encourage learners to engage in dialogue both with the teacher and with one another;
 - Seek elaboration of learners initial responses;
 - Engage learners in experiences that might engender contradictions to their initial hypothesis and then encourage discussion;
 - Provide time for learners to construct relationships and create metaphors; and
 - Nurture learners’ curiosity through frequent use of the learning cycle model.
- [<http://www.ncrel.org/sdrs/areas/issues/methods/assment/as7const.htm>]

Having outlined the roles of the constructivist teacher, the following section will focus into the constructivist ideas about teaching and learning.

5.7 CONSTRUCTIVIST IDEAS ABOUT TEACHING AND LEARNING

Constructivism is often related to the philosophies of Dewey and Rousseau, and inspired by Piaget and Vygotsky whilst instructivism is related to the faculty of psychology and

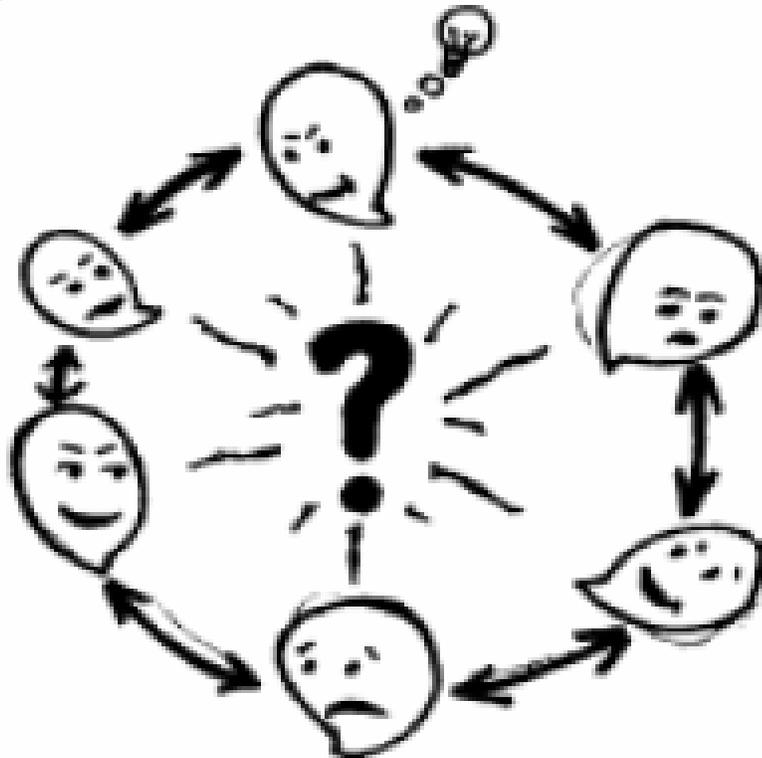
behaviourism. Terhart (2003:34) states that learning goals in constructivist didactics are guided by the fundamental principle that “the interaction with the environment (its subjective construction) has sole goal of securing the survival of the learner as an autopoietic system. From a didactical perspective, a teacher is a presenter of knowledge, whilst from a discovery perspective, he/she is simply a provider of experiences (Driver 1994:399). Thus, in constructivist approach, both these functions are combined – the teacher provides the necessary experience to enable the learners’ understanding to relate events and phenomena.

Wood (1994:334) notes that in constructivist settings, learning occurs during social interaction in which participants are expected to take perspectives of another; and when learners alter their cognitive products to form a different configuration of meaning. An important requirement for constructivist learning environments is that learning must be generative (Dunlap & Grabinger, 1996:67). Many of the teaching strategies used in constructivist teaching fall under *generative learning* – a theory that emphasises the active integration of new material with existing schemata. Generative learning strategies teach learners specific methods of doing mental work with new information (Slavin, 1994:227). Morrison and Collins’ (1996:114) research on epistemic fluency and constructivist learning environments suggests that generative of learning predicts deep understanding (true knowledge construction) which is more likely to occur when individuals actively transform information and integrate it into existing cognitive structures.

By implication, learning is a constructive process in which the learner is building an internal representation of knowledge. It is developed on the basis of experience. The only tools available to a knower are the senses. It is only through seeing, hearing, touching, smelling and tasting that an individual interacts with the environment. With these messages from the senses, the individual builds a picture of the world. Therefore, in constructivist stance, knowledge resides in individuals and cannot be transferred intact from the head of a teacher to the heads of learners. The learner tries to make sense of what is taught by trying to fit it with his/her experience.

Figure 5.1 illustrates how knowledge is constructed in a constructivist setting.

Figure 5.1 Learning through discussion and questioning insight (construction of knowledge)



(Adapted from Zuber-Skerritt, 2001:13)

At the heart of constructivist classroom, rests a characteristic feature of learner-centredness. Learner-centred educational theory is rooted in radical dissatisfaction with traditional educational practice. According to Magadla (1996:87), teaching in constructivist paradigm is interested in knowing how the learner thinks, and for this reason, listens carefully to what the learner has to say. The teacher tries to elicit explanations from the learner by asking questions such as “what do you mean?” “how does that relate to?” “how did you come to that conclusion?”, and so on.

Because we live in the fast-moving, technological society, the way we teach young people has to change (Wayman & Pulliam, 1997:1). Teachers can no longer merely function as dispensers of information because there is too much information to dispense - it is changing as quickly as it is created. Thus, constructivist teaching challenges teachers to become facilitators of learning who show learners how and where to access information quickly and efficiently.

There are multiple specific aspects of constructivism when relating it to the classroom and the learner, at whatever age. Research (Smith, 1999) highlights that constructivist classroom is characterised by the following:

- *Socialization and interaction* (which are the essential parts of the classroom). The learner uses his or her social activity to be influenced or influence other learners' beliefs and values. Also the socialization assists in "problem solving and conflict resolution" techniques;
- *Cohesiveness* – Learners can develop rules, and mission and goal statements for their classroom. In addition, the teacher may assist by providing parameters and suggestions, but it is the learners who learn self management techniques and unity with others;
- *A loud environment* made-up of small groups conversing and connecting ideas – where collaborative learning can take place. The teacher and the learners can share their prior knowledge in a group setting, where questions can be asked and explanations can be made; and
- *Relevance and creativity*. Learning is based on the learners' creativity from their prior knowledge and experiences. In reaching the creative side, the teacher needs to assist in bringing about some new skills to coincide with the prior skills, "challenge their pre-conceived notions and beliefs, and possibly re-examine their worldly outlook".

Constructivist learning has distinctive attributes. Disney Learning Partnership (http://www.thirteen.org/edonline/concept2class/month2/index_sub2.html) suggests that

in a constructivist classroom learning is constructed, active, reflective, collaborative, and inquiry-based. However, teaching that relies on self-discovery requires more time than traditional methodologies (Bower & Lobdell, 1998:50). The significant differences lie in the basic assumptions about knowledge, learners and learning. Table 5.1 below compares traditional classroom to the constructivist one.

Table 5.1 Comparison between traditional and constructivist classroom.

Traditional classroom	Constructivist classroom
Curriculum begins with the parts of the whole. Emphasizes basic skills.	Curriculum emphasizes big concepts, beginning with the whole and expanding to include the parts.
Strict adherence to fixed curriculum is highly valued.	Pursuit of learner questions and interest is valued
Learning is based on repetition	Learning is interactive, building on what the learner already knows.
Teachers disseminate information to learners; learners are recipients of knowledge.	Teachers have a dialogue with learners, helping learners construct their own knowledge.
Teacher's role is directive, rooted in authority.	Teacher's role is interactive, rooted in negotiation
Assessment is through testing, correct answers.	Assessment includes learner works, observations, and points of view, as well as tests. Process is as important as product.
Knowledge is seen as inert.	Knowledge is seen as a dynamic, ever changing with our experiences.
Learners work primarily alone.	Learners work primarily groups

(Adapted from DoE, 2000d:12 and Disney Learning Partnership (http://www.thirteen.org/edonline/concept2class/month2/index_sub1.html).

In the background of the above, there seems to be a shift with reference to basic principles, philosophical perspective, ways of learning, roles of the teacher and the learner, and the entire structure of the education methodology. The significant differences are in basic assumptions about knowledge, learners and learning. In a constructivist teaching, learners take on an active role in acquisition of knowledge and thus take the ownership of it; and the teacher's role changes as well (Wayman & Pulliam, 1997). The teacher functions as a facilitator who coaches, mediates, prompts and helps learners develop and assess their understanding and thereby their learning (http://www.thirteen.org/edonline/concept2class/month2/index_sub1.html).

5.8 PRACTICAL IMPLICATIONS OF A CONSTRUCTIVIST EPISTEMOLOGY FOR TEACHING

A movement from traditional (objectivist and behaviourist) to constructivist approach appears to have significant implications for classroom practice. Research emanating from Bednar, Cunningham, Duffy and Perry (1992:30), suggests that the implications of constructivism for instructional design are revolutionary rather than evolutionary; and viewed from contrasting epistemologies, constructivism replace rather than add to our current understanding of learning. In a more detailed account, most scholars (Scheurman, 1998:6; Smith, 1999; Slavin, 1994:225; Kampulainen & Mutanen, 2000:144; Woolfolk, 1995:346; Bentley, 1998:243; Duffy & Jonassen, 1992:6; Bednar *et al.*, 1992:22; Dick, 1992:91; Perkins, 1992:52; Duffy & Bednar, 1992:131) suggest that constructivism has many implications: for classroom practices (teaching and learning), for the definition of knowledge, for the relative emphasis on the individual versus social learning, for the role of the teacher, and for the definition of successful instruction.

In a constructivist stance, teaching is viewed as more than providing information and checking to see if it has been acquired by learners, rather, it becomes a matter of creating situations in which children actively participate in scientific, mathematical, or literary activities that enable them to make their individual constructions (Wood, 1994:337). Teaching effectively in a constructivist perspective, requires teachers to acquire knowledge about their learners' constructions. This could be effected by the creation of setting that encourage children's sensorimotor and mental activities and providing social situations in which communication takes place (ibid).

Gergen (1994:17) posits that social constructivism abandons the traditional views, invites a new range of theoretical departure, and favours communal as opposed to individualist value investments. In addition, it represents a radical break with both exogenic and endogenic orientations to knowledge, and thereby suggests a substantially altered agenda

in terms of scholarly inquiry and educational practice. For Wood (1994:337), constructivist epistemology views teaching as more than providing information and checking to see if learners have acquired it.

With reference to assessment in a social constructivist classroom, Alleman and Brophy (1998:32) contend that challenges for teachers using constructivist teaching involve ensuring that learners collaborate thoughtfully as they strive to construct new understandings; and how to measure individual effort as each learner builds his/her own unique representation of what was constructed in a group setting. Research (Wood, 1994:336) in mathematics highlights that the alternative perspective that constructivism offers by defining learning as a process of personal construction of meaning, offer a potentially powerful way in which to rethink educational practice. Incorporated into this pedagogical practice, a constructivist view of learning must necessarily imply specific implications for the teacher's role and the nature of the activity of teaching.

Wood's research (1994:336) suggests that the underlying assumptions of constructivism for learning as a cognitive position and to which theorists agree are the following assumptions:

- The knowledge of writing, mathematics and science are actively constructed by the individual;
- Learners create their own individual interpretations of writing, mathematics and science; and
- Learners create new meanings by reflecting on their physical and mental activity; and their major conceptual reorganizations have genesis in problematic and goal setting situations.

According to Wood's research (1994:336), the alternative perspective that constructivism offers by defining *learning* as a process of personal construction of meaning, offers a potentially powerful way to rethink educational practice. Incorporated pedagogical practice, a constructivist view of learning must imply specific implications for the

teacher's role and the nature of the activity of teaching. Some of these implications are the following:

- Teachers should provide instructional situations that bring forth children's literary, scientific or mathematical activity;
- Children's actions constitute rationales and teachers should attempt to view learners solutions from the latter's perspective;
- Teachers should recognize that what seems like errors and confusion indicate children's current understanding; and
- Teachers should realize that substantive learning occurs in periods of confusion, surprise, over long periods of time and during social interaction.

Perkins' (1992:49) research suggests that in the constructivist learning environment, the learners bear much more responsibility for their own task management than in more conventional settings, and the roles of the teachers shift to something more like that of a coach. In the case of an electronic classroom of the future, Dick (1992:91) contends that the roles of the teacher and learner will change dramatically as learning becomes more interactive.

Beyond the above mentioned implications, there seems to be multiple challenges for teachers using social constructivist model. Scheurman's research (1998:6) in the social studies classroom suggests that constructivism has a natural affinity with approaches to teaching that are directed toward open-ended inquiry and that encourage creative reflection on objects, events and cultural experience. A particular version one adopts has implications for classroom practice, for the definition of knowledge, for the relative emphasis on individual versus social learning, for the role of the teacher, and for the definition of successful instruction (ibid, 1998:6).

Given that most South African teachers have been trained in the traditional (objectivist) paradigm, the discourse above implies drastic challenges – for the teachers to switch from instructionist to constructivist classroom. There seems to be significant implications for

the teacher's role, teaching, learning, etc. Thus, there is need to rethink the teachers' role and management theory compatible to the constructivist philosophy.

5.9 INSIGHTS FROM CONSTRUCTIVIST CLASSROOM MANAGEMENT

Brophy and Alleman (1998) discuss classroom management and social constructivism in a social studies classroom. They tackle the issue, not in the traditional classroom characterized by the teacher acting as the transmitter of knowledge, but in classrooms based on social constructivism. In such classrooms, the teacher acts as a collaborator in the production of knowledge within the classroom. The premise is that when teachers help learners construct knowledge through social interaction, classroom discourse will deepen through more reflective discussion (ibid:56). Especially in a social studies classroom, teachers and learners collaborate to develop rules, often formalizing them into a classroom constitution (ibid:56).

When constructivists talk about constructing knowledge, they are referring both to the content of knowledge (for example, properties of objects or relative values of numbers) and to the structure of knowledge (for example, the understanding of relationships such as transitivity, seriation and correspondence) (DeVries, 2002:2). Constructivists take the view that it is through active reasoning, that both content and structure are constructed simultaneously (ibid:2).

Brophy and Alleman's (1998:56) research indicates that discipline emanates mostly from the individual as teachers and learners share leadership roles. In raising the question of whether teachers can use established principles of classroom management, their answer is a qualified yes, if implemented appropriately. Brophy and Alleman (1998:56) emphasize that teachers must focus on instructional goals rather than functioning primarily as disciplinarians (interesting to note is that most authors that deal with classroom management link it to *discipline and control* issues and do not see it in a broader perspective). In a constructivist classroom, discipline is especially linked to moral and intellectual goals (DeVries, 2002:5). In order to promote autonomy and prevent an

overbalance of heteronomy, constructivist teachers consciously monitor their interactions with children (ibid:5).

Brophy and Alleman (1998:57) point out that the teachers need to engage in thoughtful analysis, to determine how to apply basic principles of good classroom management to engaging instructional innovations. Their research makes clear that to ensure that the principles support the goals of constructivist or other non-traditional approaches to teaching, teacher can (1) begin by identifying what learners are expected to do in order to engage optimally in learning activities, and (2) work backward from this description of desirable learner roles to determine what forms of managerial instruction or assistance are needed (ibid:57).

Dede (1996) argues that educational technologists have often stated that an effective way to integrate technology into the teaching and learning process, is to follow a constructivist model. Although teachers may have technical skills, they may not understand how constructivism translates into meaningful classroom practice (ibid). When one integrates learner experiences with technology into the curriculum, the role of the teacher changes. The teacher no longer has to be in charge every minute, but can give some of the control over to the learners and the technology. If approached in a constructivist manner, the teacher's job becomes one of a facilitator or architect (Norton & Wiburg, 1998). Instead of telling learners the answer, the teacher asks questions to help them discover the answer themselves. For this type of teaching to be successful, teachers need to give learners time to explore the material and construct meaning from the experience (ibid). Also, teachers sometimes, are concerned about such a shift; they worry about losing control, not fulfilling their role or being seen as less effective by parents, principals or supervisors.

In a constructivist classroom, learners are more actively involved than in a traditional classroom. They share ideas, ask questions, discuss concepts, and revise their ideas and misconceptions (Jonassen, 1996). Such activity involves collaboration, with occasional competition, among learners. Collaborative environments can encourage the knowledge construction needed for more lasting learning (ibid). For Wyssusek, Schwartz and

Krallmann (2000:3), constructivist classroom management differs radically from instructionalist classroom management. They assert that many of the modernist assumptions on which traditional classroom management is based, do no longer hold in our world today and this led philosophers to questioning modern issues using a different paradigm. In addition, classic (i.e. modern) conceptions of knowledge, regarding it as an objective entity, are superseded by conceptions which view knowledge as culturally determined, subjective or social (Wysusek, Schwartz & Krallmann, 2000:3).

5.10 CONCLUSION

The classroom management strategies compatible to constructivist classroom are not new, but they are ones that enable teachers to create safe, caring environments in which learners are the focus. In constructivist environment, classroom management strategies appear to be dictated by learners' needs, not by the teacher's beliefs and preferences. Teachers are more like coaches, creating situations that facilitate learning. Teachers share their control with their learners, and learners are expected to control themselves.

A change from instructionist to constructivist approach suggests a refocus and redefinition of roles. In constructivist tradition, the roles of the teacher (planning, organizing, control and evaluation) seem to take on a new meaning. Instead of planning a lesson, the teacher needs to engage more in strategizing the lesson. This means that the teacher needs to contemplate what strategies could be used to create collaborative learning environments, what strategies would facilitate the construction of new knowledge, etc. Organising move from organizing learning material or the transmission of new knowledge, to contemplating ways in which the class could be grouped so that cooperative learning, team learning, etc. could be secured. Control as teacher directed moves to created emphasis on group control and locating greater power in the hand of learners to exercise self-discipline. Evaluation in the form of external examination and testing is replaced with ideas such as self-assessment, peer-assessment, diagnostic assessment etc. Thus, a change from instructionist to constructivist approach does posit a new range of classroom management principles and processes.