Compare and contrast the Behaviourist theories with those of the Constructivists and critically discuss the extent to which these theories influence Early Years Practice.

In order to compare and contrast behaviourist learning theories with constructivist theories the principles of classical conditioning (Pavlov, 1927), and operant conditioning (Skinner, 1975) will be outlined along with Piaget’s (1968) stage theory and Vygotsky’s (1986) social theory of developmental learning. These theories will be discussed in terms of their similarities and their differences. In order to examine the extent to which these theories influence early years practice, the goals and policies of the Association of Teachers and Lecturers (ATL) (2003) and the foundation curriculum as set out by the Qualifications and Curriculum Authority (QCA) (2005) will be discussed in reference to the behaviourist and constructivist theories mentioned. Specifically goals and priorities regarding the early years environment, the play approach, principles of active learning, daily routines, focus on individual learning styles and the foundation curriculum will be examined.

Behaviourist learning theories postulate that learning occurs by two main processes. These are classical (Pavlov, 1927) and operant (Skinner, 1975) conditioning.

Classical conditioning occurs when an unconditioned stimulus (UCS) that evokes an unconditioned response (UCR) is repeatedly paired with a conditioned stimulus (CS). After enough pairings, the CS will evoke a conditioned response (CR) in the absence of the UCS (Chance, 2002). The classic example of this is the evocation of a conditioned salivary response in dogs. Pavlov (1927) exposed dogs to pairings of food (UCS) and the sound of a bell (CS). The UCR (the salivary response) in the
presence of the UCS ultimately became a CR in response to singular presentation of the CS.

Classical conditioning as described by the above key concepts is thought to operate upon reflexes, or physiological responses (Lavond and Steinmetz, 2003). Behaviour modification or learning by classical conditioning is subject to the features of acquisition, extinction, generalisation and discrimination (Kirsch et al, 2004).

Acquisition describes the period in which the UCR is associated with the CS to evoke the CR. Upon repeated pairings of just the CS with the CR, extinction will occur, i.e. the CS will then fail to evoke the CR. Once the CS-CR association has been established, a stimulus similar to the CS (e.g. a bell of a different tone) can be presented to evoke the CR. This is termed generalisation. Conversely, discrimination occurs when the subject has learnt that a bell of a different tone will not result in food, and the CR differentiates between stimulus classes, selectively responding to the CS alone. It is thought that generalisation allows us to infer characteristics of stimulus classes (Chance, 2002). For example, if a child associates the flame of a match with a burning sensation, and reflexively pulls their hand away from matches from this point on, they will generalise this association to all types of fire so that they reflexively retract their arm when presented with any hot stimulus (e.g. fireplace, oven etc).

While behaviourist notions such as classical conditioning focus on observable external behaviour, constructivist thinkers such as Piaget (1952) and Vygotsky (1968) place greater emphasis on the interaction between the inner cognitive components of the individual and their interaction with the outside world. According to Piaget (1968) the child uses mental schemes to represent the world and initiate action or
behaviour that is adaptive to the environment. These schemes are termed as structures when they increase in complexity with age. Learning and adaptation to the world occurs through two main processes, assimilation and accommodation. Assimilation occurs when knowledge of the environment is transformed to fit with pre-existing cognitive structures. Piaget (1952; 1968) argues that the infant is demonstrating assimilation when all environmental objects are transformed into objects that are to be sucked. Accordingly, accommodation occurs when a pre-existing cognitive structure is modified to accord with new information from the environment.

Piaget (1952; 1968) identified four broad stages in an infant’s development. A pre-requisite for stage theories is that the individual must fully complete one stage before progression to the next can be made (Smith et al, 2003). In infancy the child is in the sensorimotor stage. At this point, the infant’s knowledge of the world is based on physical interactions with the environment. By the end of this stage object permanence (as demonstrated by the child reaching for hidden objects) and some language abilities have been achieved. Following this the child enters the pre-operational stage. Here the child demonstrates reasoning with a perceptual basis, some use of symbols and language and imagination develops. However, Piaget (1952; 1968) maintains that development of these skills at this stage occurs in a non-logical manner. The third stage (the concrete operational stage) entails the development of operational thinking. This means that the child can solve transitivity problems and can grasp concepts of volume and number (Piaget, 1952; 1968). The fourth stage is entitled the formal operational stage and is reached when the individual can employ the logical use of symbols in relation to abstract concepts.
Piaget’s (1952; 1968) theory was based on observations of children’s behaviour. The distinction between Piaget’s constructivist reasoning and the observations of behaviourism is that in the former, behavioural observations are used to infer internal cognitive processes. A second differentiation between the two schools of thought is that while constructivist thought examines behaviour in terms of the mental processes that can organise such a response to the environment, behaviourism examines only the external contingencies that could shape a behaviour pattern. For example, operant conditioning (Skinner, 1975) occurs when behaviour is shaped by external reinforcement processes. Reinforcement will cause a specific behaviour to occur more frequently while punishment reduces the occurrence of a particular behaviour. These two principles allow for four basic procedures of operant conditioning. Positive reinforcement occurs when a behaviour is rewarded with a pleasant stimulus, for example, animals have been found to increase occurrences of a particular behaviour when reinforced with food and intoxicants (Wellman et al, 2007; Bongiovanni and See, in press). Negative reinforcement occurs when a behaviour is followed by the removal of an aversive stimulus such as electric shock. For an educational example, a child may be taken off report (removal of the negative stimulus) in reward for good behaviour.

Positive punishment occurs when an aversive stimulus is presented at the occurrence of the behaviour (Skinner, 1975). The result is that the occurrence of the behaviour is reduced. A common example of this is taste aversion conditioning, where vomiting after feeding causes the organism to reduce the behaviour of eating that particular stimulus (Schafe et al, 1998). Negative punishment occurs when a pleasing stimulus is removed at the occurrence of a negative behaviour. While this has been
demonstrated to reduce the occurrence of a particular behaviour, the use of this type of reinforcement in young children has been suggested to increase negative affect (Furman and Masters, 1980) and to increase passive avoidance and the flight response (Slobodskaya et al, 2001).

Piaget (1952; 1968) speculated on the cognitive processes that could lead to observed learning behaviour; Pavlov (1927) and Skinner (1975) explained learning behaviour in terms of observable environmental events. A second constructivist theorist, Vygotsky (1986), extended this concept to explain learning behaviour in terms of both the available cognitive components and their interaction with the social world. Vygotsky (1986) like Piaget (1952; 1968) assumed that the individual is born with inherent cognitive capabilities. However, Vygotsky’s (1986) theory views cognitive development as intrinsically linked to and inseparable from the social context in which it occurs (Wertsch, 1991). According to Vygotsky (1982) the individual is born with a set of genetically inherited traits, or lower mental functions. These are similar to the reflexes identified by Piaget (1952) in the sensorimotor stage. In order to develop to higher mental functions social interaction must occur. These higher mental functions allow us to progress from reflexes to purposive action. These mental functions are reflected in intramental and intermental action. For example, a crying neonate is crying purely as an expression of its condition. As the neonate progresses through the first year of life, crying becomes a socially mediated action, in that the child will cry in order to communicate need to a caregiver.

According to Vygotsky (1982; 1986) development occurs in a zone of proximal development. This zone signifies the range of potential the individual has for learning
new cognitive skills. The potential is always greater than the individual’s own capacity when there is a sociocultural context. For example, an experienced individual with expertise can facilitate the learning of the individual, extending it to a higher level than the individual could have achieved alone. Vygotsky (1982; 1986) stated that of the higher mental processes the individual can achieve, language is the most important. Beginning as a communication tool (Vygotsky, 1982; 1986), language then becomes internalised to allow the child to reason using an internal monologue. This has ramifications on external behaviour as the child now has the cognitive tools to reason about and modify their behaviour themselves. Language provides the framework in which we perceive reality and understand how to act upon it.

In order to assess how the above behaviourist and constructivist theories of learning have contributed to early years practice, the Association of Teachers and Lecturers’ (ATL) (2003) goals and priorities for early years education and the Qualifications and Curriculum Authority’s (QCA) (2005) principles for the foundation stage will be discussed in terms of the learning theories which motivate them. Considering the environment in which early years education takes place, emphasis is placed upon a lack of distinction between education, play and care (ATL, 2003). It can be seen how Piaget’s (1952) pre-operational stage has contributed to this policy. The child, according to Piaget (1952; 1968) learns on a perceptual basis and uses this input to develop imagination and language skills. Thus in creating an environment that continues with a play motivation, the child interacts naturally with the environment to create a learning perceptual response. The ATL (2003) states that children are not to be viewed as blank slates or empty vessels. Thus the constructivist viewpoint that an
individual is born with particular cognitive capacities is inherent in the policy formation of early years practice.

A play approach to education that encourages the child to interact with both peers and adults has been shown to successfully promote effective learning (Rickard et al, 1995; Cazden, 2001), and a policy of interaction has been integrated into UK policy for early years practice (ATL, 2003). The inherent constructivist motivations are clear, particularly Vygotsky’s (1982) social model of learning where the individual’s capacity to learn is in part dependent upon social interactions with facilitators so that the zone of proximal development may be extended. Furthermore, the ATL (2003) emphasises that children learn more effectively by doing. Here, both behaviourist and constructivist thought can be seen to contribute. Behaviourists maintain that learning occurs in response to an environmental stimulus; thus the child learns through the act of adapting to and modifying the environment around themselves. Constructivism can be seen to contribute to this policy as Piaget (1952; 1968) maintains that the inherent cognitive capacities of the child cannot develop without assimilation and accommodation of environmental input. The ATL (2003) also specify that early years practitioners must ensure that the child can independently explore and set their own challenges in an environment that responds to cultural needs of all children. Here the constructivist approach is clear – through exploration of the environment the child develops theories about the world around them which they may test as a naive scientist (Gelman, 2006) while the socially supportive environment facilitates the learning process (Vygotsky, 1986).

Constructivist approaches to learning are also evident in the daily routine aims of
foundation education (ATL, 2003; QCA, 2005). Firstly active learning is supported through both adult- and child-initiated activities. Active learning occurs when the child can structure their own understanding through motivation and interest to find out about the subject. By encouraging this approach the child is equipped with the skills to reflect upon their own understanding (Walker-Tileston, 2007). It can be seen how this is analogous to Piaget’s (1952; 1968) concrete operational stage where the child is learning to grasp concepts of a more abstract nature and can begin to regulate their own behaviour. Furthermore, the ATL (2003) and the QCA (2005) maintain that social interaction and collaborative work with peers and adults is crucial to early years education. Once again it can be seen how Vygotskian (1986) thought contributes to this policy. The intermental action of working with peers and adults will facilitate the social cooperation and language of the individual child, thus equipping them with the tools needed to interpret, shape and learn from reality and experience.

The ATC (2003) infers that early years practitioners must develop a style that supports individual learning styles. While the Piagetian (1952; 1968) influences can be noted here (i.e. children of the same age progress through the stages of development at different points in time), it can be seen that scope is subscribed to in early years practice for advancement in some aspects of a stage while other aspects may remain less developed (Piatelli-Palmarini, 1982). For example, the child may show some aspects of the pre-operational and the concrete operational stage at the same time. It is therefore important that early years practitioners are able to cater for individuals at their specific point on the developmental spectrum. This is to be achieved through careful observation and monitoring of the child’s interaction with the environment. Thus behaviourist approaches of monitoring observable behaviour
exhibited in conjunction with environmental stimuli (Skinner, 1975) enable the early years practitioner to effectively implement learning approaches that complement a constructivist approach to the child’s development of cognitive capacities.

Concepts of behaviourism can also be found in the application of learning concepts to the Foundation Curriculum practiced in the early years. In terms of personal, social and educational development, the concept of disembedded learning predominates (Donaldson, 1978). Disembedded learning involves the extraction of a concept from a specific lesson, and the application of this concept to new situations. This is similar to the notion of generalisation (Pavlov, 1927). In terms of behaviourist principles, the child associates a concept with an external stimulus and succeeds in applying the concept to similar stimuli. However, constructivist thought has clearly enabled development of this aspect of the early years curriculum. The ATL (2003) maintain that the personal and social education of the individual must occur in a secure environment that meets the needs of a multi-cultural society. Here we can see a Vygotskian (1986) perspective of emphasis upon a nourishing zone of proximal development. Furthermore, early years practitioners must provide a moral education through the example of their own behaviour which presumes that social learning (Vygotsky, 1986; Bandura, 1977) is an important concept in early years practice.

In terms of the creative and mathematical aspects of the foundation curriculum, it can be seen how constructivist thought has motivated practice. There is an emphasis upon encouraging individuals to think about colours and textures they like and why (ATL, 2003) and mathematical skills are to be learnt by sorting real objects in terms of colour, number and size. Also number symbols are to be matched to groups of
objects. It can clearly be seen how these practices are designed to encourage development from the pre-operational to the concrete operational stages (Piaget, 1952). The child is encouraged to reason about perceptual information (pre-operational) in order to understand abstract concepts (concrete operational).

It has been established that behaviourist theories predominate along two central processes, those of classical and operant conditioning. Classical conditioning occurs when a response is associated with a specific stimulus while operant conditioning involves the shaping of behaviour according to external reinforcement. While behaviourism aims to observe only external, observable behaviour in terms of the environmental stimulus that has caused the viewed response, constructivist theories attribute specific internal cognitive capacities to the individual. Piaget (1952) identified four stages of development by observing external behaviour and identifying the cognitive framework that would organise it. Vygotsky (1986) also provides theories of intramental cognitive capacities that are inherent to the individual, but extended learning theory to view these capacities as inseparable from the environment in which development occurs. In terms of early years practice, Piagetian (1952; 1968) notions of perceptual learning are inherent in the learning as play environment, on the basis of perceptual reasoning leading to abstract thought. The ATL (2003) states that children are not to be viewed as blank slates or empty vessels; thus the constructivist viewpoint that an individual is born with particular cognitive capacities is inherent in the policy formation of early years practice. The inherent constructivist motivations of early years policies regarding adult interaction are clear, particularly Vygotsky’s (1982) social model of learning where the individual’s capacity to learn is in part dependent upon social interactions with facilitators so that the zone of proximal
development may be extended. Behaviourist approaches of monitoring observable behaviour exhibited in conjunction with environmental stimuli (Skinner, 1975) enable the early years practitioner to effectively implement learning approaches that complement a constructivist approach to the child’s development of cognitive capacities. Concepts of behaviourism, specifically generalisation, can also be found in the application of learning concepts to the Foundation Curriculum practised in the early years. Constructivist theories of social learning are applied to moral education in early years practice through adult example. Furthermore, it can be seen how the construction of artistic and mathematical development carries inherent applications of Piagetian (1952) reasoning, specifically regarding the pre-operational and concrete operational stages.
References


