Compare and contrast the implications of piagetian

There are two main theories on the cognitive development, Piaget and Vygotsky. Piaget argues that our cognitive developmental is by determined nature and genetics, rather than what we are taught. Piaget's theory involves four stages: the sensorimotor, pre-operational, concrete operational and formal operational stage. Vygotsky developed a theory of cognitive development quite different to that of Piaget. Vygotsky believed that cultural input was fundamental to development. Without culture, individuals could not progress further than the elementary stage.

Vygotsky also believed that language is communicative from the outset, and has a dual purpose, for thought and communication. Vygotsky's theory offers a more recent educational approach than Piaget, where the child is the apprentice, and methods such as scaffolding and the use of peer tutoring help the child to learn. Vygotsky's approach to education is the opposite of Piaget's. Piaget saw the child as the scientist and believed in child centred and discovery learning, where the child teaches itself. Vygotsky, on the other hand, saw the child as the apprentice, and believed that they need to be guided in order to learn.

Vygotsky developed a concept called zones of proximinal development (ZPD). The ZPD is the area between the child's current level of knowledge and their potential abilities. A child cannot learn beyond their zone, but can enter the next zone earlier with the use of scaffolding. Scaffolding is support from an 'expert' maybe a peer, teacher or parent. They help advance a child's learning by providing a framework within which the child can develop. This help is slowly removed as the knowledge becomes internalised. An

application of ZPD and the use of scaffolding in education can be seen through peer tutoring.

Peer tutoring is a scheme in which the expert child is given the role of tutor, and the novice child is given the role of the tutee. The expert will then aid the novice and because the expert is only slightly more advanced than the novice, they will still be working within their zone of proximinal development. While there is not a lot of empirical evidence carried out by Vygotsky, there is a lot of supporting, and contrasting evidence arguing how effective Vygotsky's theory actually is when applied to education. The concept of zones of proximinal development has been supported by many studies, including Saxe, Gearhart, and Guberman (1984).

They conducted a study to demonstrate the process of scaffolding, by setting children a range of progressively difficult puzzles to work on with the assistance of their mothers. Their highest level of difficulty was recorded. Later they were set the task again, without help, and the highest level was recorded again. From what I understood, not only did the results prove that scaffolding was effective, because the children gained higher results when they were aided, but also helped establish each child's zone of proximinal development.

Their unaided performance indicated their current ability, whereas the result when aided indicates their potential capability. Bliss et al. investigated the use of scaffolding in the national curriculum. Key stage 2 science classes were studied in 13 London schools. The results showed teachers did not effectively incorporate the principle of scaffolding into their lessons. Wood

(1988) argues that scaffolding is inappropriate strategy to use in a typical classroom, because it is not possible for the attention of the expert.

Instead, scaffolding may be more appropriate in a one - to -one learning context. (Smith et al.) Examples include enrichment courses such as the 'Hot house tots' and 'Keep intervention' (Tharp and Gallimore), which was intended to improve literacy. Both have the ability to use scaffolding effectively, because of the environment provided. Other psychologists believe that scaffolding may be ineffective because it's not reinforced outside the classroom. Meadows et al. (1994) found a child's concentration is worse if scaffolding is not used at home.

The principle of scaffolding can be applied to primary education through peer tutoring. Blaye et al. studied 11 year olds to see whether co-working could be shown to benefit individual development. Some children worked on computers in pairs while others worked alone, trying to solve problems presented in the context of a computer adventure game. The task was difficult, and in the first task, no individuals succeeded and only a few pairs were successful. In a second session, around 50 % of the children working together were successful, compared to less than 20% of those working alone.

In the final session, all the children worked alone on a variation of the task, and the results showed there was some transfer from having worked in pairs; over 70% of the children that had previously worked in pairs successfully completed the task, whereas only 30% of those who had worked alone were successful. The results suggests the advantages of working in pairs,

presumably because the discussions which took place between pair members enhanced their development through the zones of proximinal development, and benefited from peer tutoring.

Tudge (1993) on the other hand, said that while peer tutoring was effective, if the peer tutor lacks confidence or fails to scaffold effectively, then performance is no better than when a child works alone. To make Vygotsky's theories more effective when applied to education, his theories could be combined with those of the socio-cognitive psychologist Bruner. Greatly influenced by Vygotsky, Burner introduced Vygostsky's ideas to researchers outside Russia. He too, believed that without instruction, the child's spontaneous activities couldn't be transformed into rational thought.

However Bruner suggested that curriculum a should be incorporate a number of different pathways which lead to the same end, so children can benefit form a variety of different learning experiences. This is much more line with the teaching ideals of today, but still reinforces Vygotsky's principle theory that instruction is learning. Piaget's theory involves four stages: the sensorimotor, pre-operational, concrete operational and formal operational stage. The sensorimotor stage spreads between 0 and 2.

In this stage, the baby interacts with its environment through action. At this stage assimilation, accommodation and internalisation (learning information and making it their own) is a major factor. Children of this age lack object permanence- once an object is out of their immediate sight, they cannot perceive the object, or believe it still exists. Piaget tested this study on his

own daughter, Jacqueline. He let Jacqueline play with a toy duck. He then took the duck and hid it under a blanket next to her.

Immediately, she stopped looking for it, because to her, the object no longer existed. While this proves Piaget's theory, the fact that it was only carried out on one child means that it is extremely subjective so we cannot generalise. Due to the fact that Piaget used his own child in the experiment means that it may also be biased. There is a lot of evidence that disagrees with Piaget, and says that children can conserve as young as 4 months old. In an experiment known as the 'baby boy' experiment, an 8-month-old child was placed in a high chair and shown a teething ring.

He recognises the teething ring, and even once it is placed under a piece of paper, the child will continue to look for it, proving the child has learnt object permanence. Another characteristic of the sensorimotor stage is that the child is completely egocentric, meaning they cannot see the world from another's perception. This carries on into pre-operational stage. The pre-operational stage lasts from ages 2-7. The main difference between this and the sensorimotor age is the continued development. The child's internal world is developing, but is now dominated by the outside world.

The child is still egocentric. A supporting study is the '3 mountains task. ' Piaget would show a child a model of mountains, accompanied by views of the mountains from different angles. He then asked the child to show him the picture of the mountain they could see. But when asked what their friend on the other side of the mountain could see, they would still point at the picture of their view because they could not put themselves in anyone else's

view. Another skill that the child acquires in this stage is decentration. When a child entered the pre-operational stage, they showed centration.

The child is unable to take into account more than one factor when organising and categorising objects for example organising apples into large red ones and small green ones, rather than just reds and green apples. Once they can successfully complete this task, they have the ability to decentrate. Decentration occurs at the end of the pre-operational stage. A child also lacks conservation - the ability to know that something remains the same despite a change in appearance. Once a child reaches the concrete operational stage, a child develops the mental structure called an operation, which means they can perform and action mentally.

They cannot perform the operation without the actual materials present because they must be able to look at and manipulate them. The stage spreads over 4 years, during this, the child develops their ability to decentrate, and there is a significant decline in egocentrism. The child would now be able to carry out the conservation tasks with no problems and can begin to see other people's perspectives. This means that can understand the three mountains task, and can work in groups because they can listen and take into account other points of view.

Some psychologists argue that in the concrete operational stage, Piaget underestimates the intellectual development of 7-11 year olds. The final stage of Piaget's theory is the formal operational stage. At this stage, a child can manipulate ideas and can reason on the basis of a verbal statement. For example 'if A is taller than B and B is taller than C' then a child in the formal

operational stage would known that 'A is taller than C'. At this stage, a child obtains abstract thought and the ability to hypothesise; they can think about hypothetical problems they have never encountered before.

Another skill they acquire is the ability to think logically. This means if the child is presented with a problem, they will work through it systematically, rather than randomly. Piaget carried out the pendulum task to demonstrate logical thought. He asked children to create the most successful pendulum out of a range of different length string and different weight balls. Children 11+ would systemically work through the lengths of string and weights until they found the most successful pendulum, proving that they could think logically.

While Piaget's theory answers many questions, it raises many and leads to controversy between other psychologists. At every stage, his theory is scientific and has lots of supporting evidence, which with the exception of the sensorimotor stage, can be generalised. But while there is substantial amount of supporting evidence, there is a lot of contrasting evidence. Many psychologists argue that Piaget's stages are too overlapping and that Piaget underestimated children's intellectual ability. Piaget's theories only took into account 'normal' children.

He was only interested in the similarities of children, and does not take into account children with learning difficulties, or who are extremely bright. After this, it seems, he believes that children do not cognitively develop any further, or indeed for the rest of their life. Despite this, Piaget's theories are very influential to our everyday life. Piaget believes that the child is the

scientist, and we see child centred egocentricism, and teachers placing children in a state of disequilibrium with questions to encourage further learning.

Vygotsky's theory of cognitive development when applied to education provides a new approach to teaching. While this is a revolutionary concept, and in theory is very effective, it is impractical for today's classes. In groups of up to 30 children with only one teacher the principle of scaffolding cannot be applied, because there are just not enough resources available to assess each child's ZPD, and effectively scaffold each child. This is evident in teaching every day, and gives us an idea on how influential both theories have become.