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# Implications Of Current Theories Of Cognitive Development In Teaching And Learning

## Introduction

An understanding of the children's cognitive development is one of a range of factors forming the basis of an enhanced intellectual and high performance based learning environment within classroom work. Providing children with an education is beyond the teachings within the abstract setting of a classroom, theoretical approaches to learning should enable students to harness taught knowledge and apply this to develop their confidence, identities and intellect (Dweck, 1986) as well as the development of resilience (Claxton, 1999). I will be exploring a range of different research work based associated to the implications of current theories of cognitive development and how these can be put into practise within teaching and learning as a current PGCE student and future outstanding teacher.

I will be focusing on three major approaches to learning which include behaviourism, which is represented by the work of Skinner (1954), the research of Piaget (1961) which reviews major elements of his constructivist psychology, interlinked to the modern theories of social cognition with the common root through the work of Vygotsky (1978) represented on the 'zone of proximal development'.

## Behaviourist Psychology and Positive Teaching

Behaviour psychology is an approach based on study of the ways in which behaviour is shaped and conditioned by stimuli. Skinner has made very important contributions to this theory, where he applied his ideas to the teaching and learning of students in schools. An example of this was when pupils were learning arithmetic, where he highlighted that the production of correct 'responses' from children and considered the formation of 'reinforcement' that are routinely used within classroom settings. However, Skinner regards these as inadequate.

The work of Merrett and Wheldall (1990) discusses how achieving and maintaining class discipline, as well as task engagement from a behaviourist perspective are in conjugation with Skinner's work. My host school Shireland has a robust and well-designed Behaviour Management System in place which puts in practise the contingencies of reinforcement hand in hand with the consequences of certain behaviours, which I have observed as being an effective control of the general conduct of students within the Academy.

## Psychology of Thought and Aspects of Children's Learning

Piaget's research on constructivist psychology, distinguishing formal knowledge and the dynamic of transformation – which provides the mechanism for the development of thought. He had referred to types of thinking having successive 'stages', which are reviewed and related to maturation, direct experience and social interaction. The ways in which children 'assimilate' new experiences and 'accommodate' to their environment; producing new levels of 'equilibration' at successive stages of learning.

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It is essential students are gradually taught content within Science lessons at appropriate levels, such as Key Stage 3 content relevant to Year 7-8 and Key Stage 4 content suitable for Years 9, 10 and 11. This differentiation enables pupils to comprehend taught material developmentally appropriate to their individual cognitive abilities. I agree with Piaget's opinions where his theory proves logical as Key Stage 5 content involving geometrical isomerism would be unsuitable for a Year 7 student newly starting secondary school, as the advanced theoretical concepts would be difficult to understand as it is more appropriately designed to be taught to sixth form pupils who have a strong foundation of Chemistry knowledge from their gradual progression to Advanced Level study.

I think the work of Piaget can be interpreted well within Science lessons, providing positive influence on teachers. After reading the Plowden Report (1967) – which was although intended for primary education, delivers strong links which can be applied within secondary schooling. It provides a rationale for policy recommendations which I have taken note of are applied within policy documentation within Shireland – emphasising the importance of providing a rich, experiential learning environment which would be appropriate to the 'stage' of each child.

## **Mind in Society and the ZBD**

Although from the 1930s, Vygotsky's social constructivist psychology underpins much modern day thinking about teaching and learning, where the importance of instruction is emphasised. Furthermore, this is combined with the recognition of the influence of social interactions and the cultural context within which understanding is developed. The most influential concept of Vygotsky is the 'zone of proximal development', which emphasises the potential for further learning given the most appropriate support. This theory is essential for a successful Science lesson, for example when the new topic of exothermic and endothermic reactions is introduced, students would initially not be familiar with theoretical concepts, however by providing pupils with an interactive practical demonstrating how certain materials release energy (or heat) and vice versa, as well as worksheets with a range of activities to complete before the end of the lesson to further consolidate their learning evidence the importance of instruction.

## **Conclusion**

All the research studied is impeccable in providing well-structured cognitive student-based development. Piaget highlights the importance of the stages of development with learning from experience, which works hand in hand with Vygotsky's work in identifying the development level of a child and given the most appropriate guidance and support linking this to the 'zone of proximal development'. Both theories would not however be made possible if the implications of behaviour are not highlighted as Skinner suggests, therefore suitable reinforcements are put in place to provide the most productive learning environments for children.

## **References**

1. Claxton, G., 1999. *Wise Up. The Challenge of Lifelong Learning*. Bloomsbury Publishing, 175 Fifth Avenue, New York, NY 10010.
2. Dweck, C.S., 1986. Motivational processes affecting learning. *American psychologist*, 41(10), p.1040.
3. Merrett, F. and Wheldall, K., 1990. *Positive teaching in the primary school*. SAGE.

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4. Piaget, J., 1961. The genetic approach to the psychology of thought. *Understanding Children*, 52, pp.35-40.
  5. Skinner, B.F., 1954. *The science of learning and the art of teaching*. Cambridge, Mass, USA, 99, p.113.
  6. Vygotsky, L.S., 1980. *Mind in society: The development of higher psychological processes*. Harvard university press.
  7. Wilkinson, A.M., 1987. Aspects of Communication and the Plowden Report. *Oxford review of education*, 13(1), pp.111-118.