Piaget – Constructivism

Learning and development occur from within the child. His work was at a time when behaviourist thinking was dominant (passive child, 'blank slate', rewards and contingencies). Work perceived as being 'progressive' – the opposite of behaviourist ideas including teaching machines, learning units, multiple choice answers. Argued for the importance of the child in constructing their own knowledge – 'discovery learning' is one approach that resulted.

Criticism – ethnocentric interpretation potential of delays in learning in disadvantaged groups is a danger. This is because **Piaget** argued learning is endogenous, leaving an implication that some groups have inherent cultural deficits.

Piaget gave little direct attention to this criticism but did do to the related issue of authority. His rejection of it in favour of non-hierarchical social relationships with peers is central – he argued that conditions to enable children to develop autonomous, critical and rational thought for themselves were necessary for development.

Capacity to reflect on one's own actions and apply logical reasoning to them is central to learning – not the authoritarian influences of teachers and institutions. Heart of the issue is the asymmetrical relationship between adult and child – constraining children from developing autonomous thought.

Piaget therefore viewed peer interactions as a facilitator of cognitive development; formal teaching approaches as an obstacle.

Vygotsky – Social Constructivism

His approach places child-adult interactions at the heart of development – contrasting with **Piaget**. He regarded this relationship as the primary channel for the transmission of thinking tools essential for development from one generation to the next – absolutely unimportant for **Piaget**.

Book 3 Chapter8 – A socio-cognitive perspective on learning and cognitive development

Expert-novice interactions enable cognitive development. Framework stresses the importance of culture – in the form of the 'teacher' and of language and other tools to shape action and thinking. The gap between expert and novice is bridged by creating a ZPD. 'Tools for thinking' can then be appropriated step by step.

Criticism – this view also risks supporting a form of ethnocentrism – as teachers are in a place of unquestioned knowledge the risk is that they become the focus of a student's attention.

Learning viewed only as 'passing on knowledge' is not the same as development – as this view only explains how a student can become a teacher.

Marxist thinking influenced **Vygotsky**'s work – it was the state sanctioned view of how life was to be explained in the USSR. E.g. his focus on individual development was within and subservient to broader sociocultural development.

Role of technology emphasised and mental development occurs from tools used for social activities. A broadly Marxist view – development comes from struggle, activities and material conditions.

Vygotsky however also stressed the constructivist aspects of development – like **Piaget**. Children do not only passively receive tools but are creative in building their own thinking.

Piaget – control of development is inside the child

Vygotsky – development is the internalisation of outside influences.

Mead – Symbolic Interactionism

Shared social activity, particularly communication, is the way in which objects and actions achieve meaning – 'symbolic significance'.

'Signs' that at first accompany actions lift a child's understanding to new symbolic levels – a tool is understood because it is used meaningfully – not because the tools has an inherent meaning in itself – e.g. by its shape.

Through repeated experiences, the child forms a representation of 'self' and the 'generalised other'. Children start to see themselves from the perspective of other people, resulting in the internalisation of meanings and values.

Process of internalisation leads thinking to advance from the immediate situation to a level of self-reflection.

e.g. In play, role playing of others is a primary vehicle for this type of development. Contrasts strongly with **Piaget**'s view that play is solitary at first, then children play side by side, with only the last stage of development being where children take meaningful account of others' perspectives.

Social interactions and the development of thought

Various researchers have found using empirical techniques that:

(i) If children work together to solve a problem, they are often able to arrive at a solution that they would not have done if working alone

(ii) Working together means that even in the short term, they are able to tackle tasks alone of similar difficulty

e.g. the 'tool' of changing a single variable at a time may be developed in one specific task but is then able to be generalised beyond the task by the child.

Socio-cognitive conflict

Smedslund – shared elaboration of cognitive solutions to communication conflicts that leads to constructive change – dependent on the willingness of each party to communicate with each other. Notes that different viewpoints do not always lead to a solution – but an argument!

Social marking

Not just the logical structure that influences success but how will it matches with the social rules associated with it and the social structure of the partners' interaction (**Doise, Rijsman, Nicolet …**)

For example, the 'reason' behind the Piagetian conservation task affects success –e.g. if constructed as a 'fair shares' task participants are more successful.

Meeting of minds: adult-child intersubjectivity

Collaboration only happens if there is some degree of joint understanding of a task. Joint attention to the same aspects of the task is also needed. 'Intersubjectivity' – may not always be present at the start – discourse and thinking may be required for it to appear.

Relational context

Competence an individual can show is affected by their relationship (**Labov**). Implicit understandings of the relationship and its rules – '*communication contract*' – structure the conversation and responses – **Rommetveit**.

Children testing children

Grossen – a child who can do a task administers it to another. Piagetian conservation of liquid task used. Notes that children have an idiosyncratic understanding of the role of the psychologist – "pay attentions, there is a trick coming!"

Found that children who are non-conservers illicit non-conserving responses and v.v.

Psychologists testing children

Perret-Clermont et al – on conservation tasks, some responses were undervalued by psychologists. Full explanations valued more than simple responses such as 'yes'. Competence in a single domain may therefore be confounded by (lack of) competence in the broader linguistic domain – various researchers have confirmed.

Bell et al – 'make a sutemi'. All students complied despite it being as nonsense word. Social rule of 'making the best of what is available' thought to be at work.

The 'didactic contract'

A special case of **Rommetveit**'s 'communication contract'. It refers to the way teachers and students adopt the rules they follow (**Brousseau, Cherallard**).

Student's view of being a student

Schubauer-Leoni – 'didactic contract' – is how a student learns about a topic while maintaining an appropriate relationship with their teacher. Answers are the result of a particular relationship, not just the result of what is being taught.

Studied by watching 'novice teachers' – children teaching children. A 'good teacher' in the view of a novice was one that set problems that could not be solved without a mistake being made – showing that 'teacher' is superior.

Task difficulty and context effects

Schubauer-Leoni – child's understanding of rules/expectations of social context affects the difficulty they have in finding solutions. It is thought by many researchers that the task is given meaning by its social context.

Saljo and Wyndham – 15/16y.o. competent mathematicians set a task to find postage costs given all the information they needed. Invented complexities that were not present and got the task wrong, as it was 'too easy' for the social context of their classroom setting.

How children interpret adult's questions

Didactic contract implies children interpret at two levels – what the question asks (explicit) and what the social rules deem to be an acceptable answer.

For example, the Piagetian conservation task may be answered incorrectly because the social context is such that as the same question is asked twice, something must have changed. Children are expected to conform to adult expectations – they are hesitant to give answers at odds with this (**Levy and Grossen, Perret-Clermont et al**).

Psychology of everyday school life

Implication of social environment on cognitive development is that it isn't sufficient to study cognitive development in a lab setting.

How classroom conversation constructs meaning

It is a particular setting, specific expectations about social interaction exist. Implicit assumption is that the teacher asks the questions and knows the answers; evaluates the student's response and judges their level of competence. **Mercer** shows how classes of 8-10y.o. children and their teachers build this shared understanding through activities and talk. Students are then able to attribute meaning to their interactions.

Classroom discourse and cognitive development

'Teacher talk' affects children's cognitive development. E.g. **Vygotsky**'s ZPD. Language is the main method of asymmetric teacher->student interaction. It supports interactions that help children's thinking to develop.

Discourse not only mirrors children's thinking but actively helps its development.

'Externalised reasoning' – the development of new understanding through a true debate (not driven by the perception of giving right/wrong answers as in typical teacher->student interactions). Teacher facilitates discourse without guiding on a preconceived path to support cognitive development (**Mercer**).

Shared cultural practices of school life, the objects and communication patterns lead to a 'referential framework' being established for learning – **Resnick**.

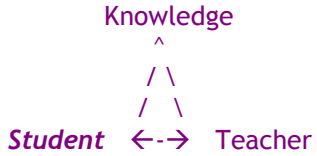
Does knowledge transfer out of the classroom?

Young children use 'arithmetic' responses to answer adding flowers to a bunch in the classroom, but create a narrative story in non-classroom settings to answer the problem (**Perret-Clermont and Schubauer-Leoni**).

Exploration of the implicit understandings of 'situated problems' – e.g. in Brazilian street vendors (**Nunes**) show that complex arithmetic can be done in an outside context but not 'at school'.

Reasons could be teacher fails to understand the significance of what a child already knows; students may fail to grasp the relationship between what they know and a similar task in a different setting; knowledge may be context-bound without either party being aware.

The developmental triangle



Primary base for research in dev. psych. has been the student. However, socio-cognitive perspective argues the other two points of the triangle are as important in understanding cognitive development.

Teachers and students do not always agree on what school is for – student perspective is that passing exams is the goal, but teachers want to pass on understanding – a 'bonus' for most students.

The socio-cognitive perspective

Doise – postulates four levels of analysis. Each level can interact with the others to affect/transform them.

Level 1 – the individual. Construction of own knowledge and thought, attempting to make sense of their experience.

Level 2 – Interpersonal interaction. Relationships, interaction and discourse – student->teacher; peer->peer expectations. Focus is on intersubjectivity and mutual expectations.

Level 3 – Roles and structures. The framework that constrains 'proper' behaviour for teaching/learning in a given context.

Level 4 – Social representations. Policy, ideology, systems of social representations that define 'school' in a particular way. Always re-interpreted by the participants in particular situations/schools – e.g. 'what is knowledge, intelligence etc.' – **Gilly**.

Conclusion

Communication and didactic contracts govern the transmission of understanding and the conditions of learning. Gaining knowledge and developing new competencies is therefore a cultural activity.

No single theoretical model can yet account for the complex reality that exists.

Tim Holyoake 2009, http://www.tenpencepiece.net/