

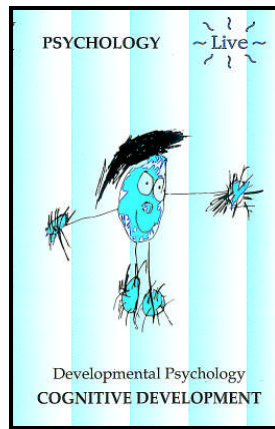
PSYCHOLOGY



SERIES

USER'S GUIDE

**Developmental Psychology
COGNITIVE DEVELOPMENT**



This Guide is designed to be read before viewing and an overview of the content and structure of the programme is given to assist with planning and lesson preparation. It is written to support the teaching of psychology and will be particularly helpful for those new to this subject. The DVD includes a menu linking to sections within the programme. The default setting is to play the DVD through automatically. To select a section highlight the relevant heading using the arrows on your remote control and press 'ENTER'. The chosen section will then play through and return to the menu for your next choice.

Running time: 60 minutes (1995)

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We hope you find this programme a useful teaching tool.

Introduction

The programme is designed to cover several sessions as it contains too much information to be useful if watched from start to finish in one sitting.

It could be divided into several parts:

- Understanding Piaget
- Critical evaluation of Piaget's Theory
- Jerome Bruner's theory
- The future of the study of Cognitive Development

Ideally a suitable section would be watched in one session, making liberal use of the pause or stop button for discussion and/or note-taking.

It was difficult to make this film as interactive as the others in the Series, as we have presumed that the viewer is not surrounded by willing child participants. However we have included several breaks for thought, discussion or activities which don't require children.

Suggestions for simple practical work using everyday materials are also made at various times during the film and these could form the basis of coursework or classroom demonstrations.

There are many aspects of Cognitive Development which we just did not have time to include, such as the effect of early disadvantages on Cognitive Development. The question of Ethics in studying children is discussed in this Guide as it lends itself to class discussion better than to film presentation.

Aims

- To explore Piaget's Theory and critically evaluate it in the light of more recent research;
- To look at the way forward in Cognitive Development study now that research into Piaget's theory is becoming exhausted;

but above all

- To show students plenty of children at work and play in a wide range of environments. In our experience, many young students have little contact with children, and for some of the more mature students it may not be recent or relevant experience of the ways that children think. It is often not practical to bring children into the classroom and the programme offers examples of children's thinking which can be used to demonstrate points.

Syllabus Links

AQA(A) AS Mod 1 10.2 Developmental Psychology: Attachments
 AQA(A) A2 Mod 4 13.4 (a) Cognitive Development
 AQA(B) AS Mod 2 10.1.2 Key Approaches - Cognitive
 AQA(B) A2 Mod 4 Child Development 13.1.1 Attachment and separation,
 13.2 Cognitive Development
 AQA GCSE Section 12 Developmental Psychology

Edexcel AS Unit 1 The Cognitive-Developmental Approach
 Edexcel A2 Unit 5a Child Psychology

OCR AS Core Studies 2541 Developmental Psychology
 OCR A2 Mod 2549 5.5.6 Psychology and Crime

Timing and Content of the Video

	General introduction - abilities of neonates
03.00	Introduction to Jean Piaget and his theory Schema, assimilation, accommodation, equilibration <i>Diagram reproduced on page 6</i>
09.30	Break 1 - Explain how you might develop a schema for driving a car in everyday language and in Piagetian terms
11.00	Piaget's Stages <i>Diagram follows on page 7</i>
12.00	Sensori-motor stage explanation, real examples and summary
15.30	Preoperational stage explanation, real examples and summary
23.00	Concrete operational stage explanation, real examples and summary
26.00	Formal operational stage explanation, real examples and summary
27.15	Break 2 - Play 20 questions followed by discussion of typical Concrete & Formal thinkers' responses
29.00	Formal operational summary
29.15	Evaluation of Piaget's methodology

32.15	Recent research findings which disagreed with Piaget's relating to the Sensori-motor stage relating to the Pre-operational stage
35.00	Break 3 - discuss the difference in findings between the Three Mountain Task and the policeman/doll experiments of Martin Hughes
36.50	relating to the Concrete Operational stage including discussion about language used in experiments
42.00	Break 4 - discussion - what would happen if no more babies were born? relating to Formal Operational stage
44.00	Role of language in cognitive development - Piaget versus Bruner
45.15	Summary of Piaget's contributions to child-rearing and education
48.15	Jerome Bruner's Theory - modes of representing the world
51.15	Recent advances in cognitive development research in Metacognition & Theory of Mind

Breaks for discussion and activities - the screen displays a relevant message for about 10 seconds to allow time for those using video to pause the tape during completion of the task.

Break 1 Explain how you might develop a schema for driving a car

This makes it clear that we continue developing new schema in adulthood using the same process of assimilation and accommodation. The example is one of which most people have had experience.

The students could try to explain the process in everyday terms and then in Piagetian terms. This is done by the presenter after the break.

The astronaut sequence is an attempt to lighten the topic but also bears the message that it is achieving a state of equilibrium that motivates us to find new experiences and develop new schema.

Break 2 Play Twenty Questions

One person thinks of something in the room and the others can ask twenty questions to guess what it is. These can only be answered yes or no.

This demonstrates the difference between a concrete thinker who will stab at up to 20 different items in the room (depending on age, experience and training) and formal thinkers who will use elimination techniques. This is discussed after the break.

Break 3 Discuss the differences in findings between the three mountains task and the policeman/doll experiments

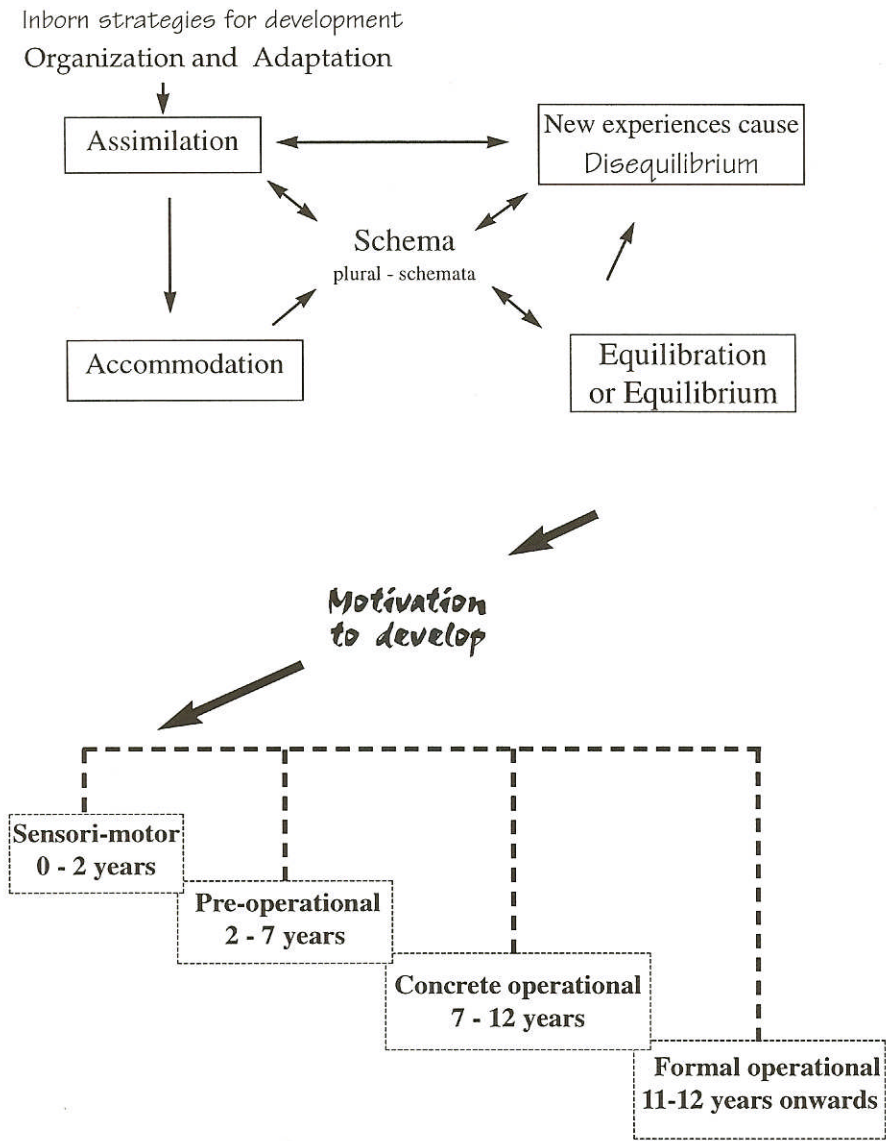
This is a break for students to think for themselves about how the differences in methodology, relevance of task etc can affect the findings, before the presenter reveals some of the possible reasons.

Break 4 Answer the question: What would happen if no more babies were born?

Again a chance for students to test their formal thinking with a hypothetical question of the type often used in textbooks: *What would have happened if x had won the war against y?* After the break typical concrete and formal thinkers' answers are given and viewers reassured that very few people use formal thought all the time.

Summary Charts Used in the Programme

Piaget's Theory of Cognitive Development showing the relationship between the Invariant Functions and Stages



Piaget's Stages

Key Features of the Sensori-motor Stage

Development of thought processes using sensory information and actions

Object permanence develops

Some symbolic thought seen at about 18 to 24 months

Key Features of the Pre-Operational Stage

Egocentrism – inability to de-centre

Problems with classification

Animism – human attributes to inanimate objects

Inability to conserve most operations

Key Features of the Concrete Operational Stage

Attains most conservation operations

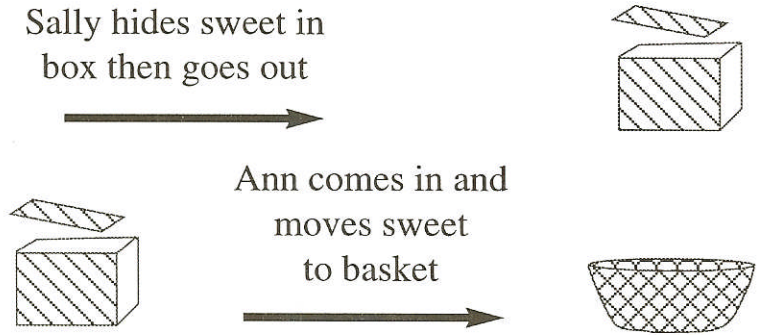
Unable to deal with most abstract concepts

Key Features of the Formal Operational Stage

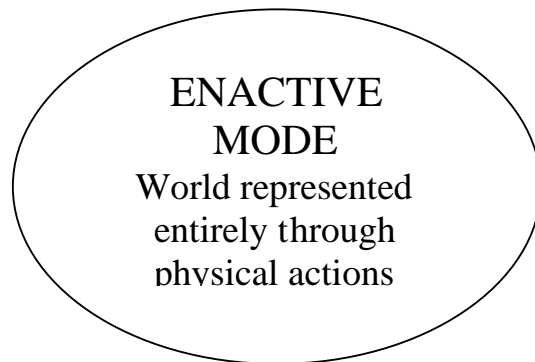
Can now use adult reasoning

Capable of abstract thought
eg deductive reasoning, hypothesis testing

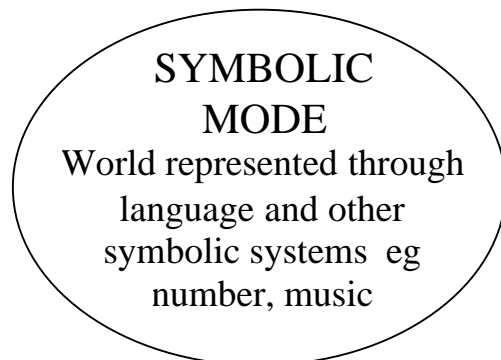
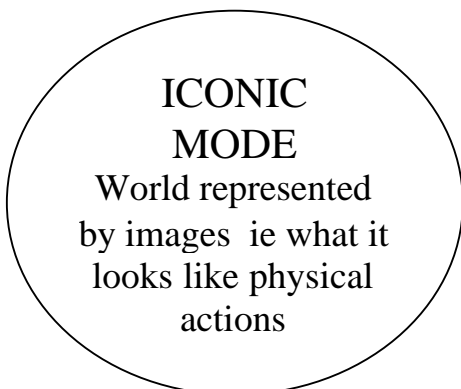
A M Leslie's Theory of Mind Study



Where will Sally look when she returns ?



Bruner's Three Modes of Understanding the World



Practical Work

We emphasise practical work in the Psychology Live Series because it is an effective and enjoyable learning experience for the student as well as forming a component of many courses.

The ease of finding willing and able participants for memory, perception, attention studies etc, has meant that cognitive development studies are attempted less frequently by students. This is compounded by the difficulties of studying young children which we can discuss under two headings: Practical Considerations and Ethical Considerations.

1. Practical Considerations

The nature of children makes them everything a good experimental participant is not. They may be willing - but only until distracted by something more interesting. They may be able - but only for very short periods of time. They may be unable to understand the standard instructions so you have to adapt the wording. Basically, any thoughts of carrying out a scientific experiment using standardised procedure go out of the window.

Even if one succeeds, the results should be treated with caution due to the other problems which make studying children especially difficult, as discussed in the programme eg demand characteristics, level of language development.

Another problem can be actually finding children to take part, which usually requires contacts with pre-school groups or local primary schools if you require large numbers of children of the same age.

2. Ethical Considerations

Children are especially vulnerable to manipulation by adult experimenters and far less able to refuse to take part if they do not wish to.

In brief, no research may be done which may harm the child in any way physically or psychologically.

The informed consent of the parent/guardian must be obtained where a child cannot choose to take part themselves by virtue of age, mental ability etc.

The child's freedom to choose to take part or discontinue at any time must be respected.

All personal details or results obtained must be treated as confidential.

Deceiving the child or guardians as to the true purpose of the investigation should be avoided unless absolutely necessary and de-briefing should then take place.

Possibly the most important question to ask when considering studying children is '*Do the ends justify the means?*'. It is especially important to give yourself an honest answer where children are involved! Usually studies involving children are enjoyable and beneficial for all involved but students must be made aware of the above.

See the References for how to obtain the Ethical Guidelines from The British Psychological Society Code of Conduct and Ethical Principles (2006) and The Association for the Teaching of Psychology. The Society for Research in Child Development and the American Psychological Society have published similar guidelines.

To solve most of the problems discussed above, a **Case Study** can be carried out on a child, siblings or a group of children. This produces a vast amount of rich qualitative data and can be very rewarding for the children and parents. Individual case study is an increasingly acceptable form of methodology if presented in a structured way. A case study can include a number of aspects of the child's development such as conservation, language development, social development etc using different methods. For example, conservation tasks given, language analysed from tape recordings and friendships recorded using observation techniques.

With case studies, obviously the child's guardian must give their permission and be fully informed about what is involved. Confidentiality is important and the child shouldn't be identifiable from the report. Ethical problems could occur if the study revealed something of a sensitive or worrying nature and then an expert opinion may be needed as to the moral obligation or advisability of informing the parent/guardian. Generally though, parents are delighted to have their child selected for special study and it can be very beneficial to the individual and family.

Observational Studies, like case studies, do not use manipulation of the participant's behaviour, but have their own ethical problems concerned with invasion of privacy and deception. Also, children who are aware of being observed will inevitably produce demand characteristics and it is very difficult to become a totally non-participant observer with children around.

In general, cognitive development is an area which lends itself to non-experimental methods and demonstrates to the student how much these types of study have to offer.

Applications

The main application of theories of cognitive development has been in **improving educational practice**. Piaget in particular has been influential in the development of the Nuffield Science programme. Students work on practical tasks in maths and science before moving on to more abstract work involving deductive reasoning, as shown in a science lesson in the film.

The Plowden Report (1967) highlighted the importance of active hands-on learning which supports Piaget's view that the child must be ready to learn before s/he can be taught and the tasks set must be appropriate and intrinsically motivating. The report also used Piaget's research to include the differences in thinking at different ages and stages.

Vygotsky's approach that the child should be presented with challenging tasks and helped, or 'scaffolded', by adults and others around them with more competence than themselves has been influential. Further research has supported his view that children learn more from adults when working with them, whether parents, teachers or other adults such as mentors and classroom assistants. Freund (1990) found that when mothers and children worked together on furnishing a doll's house, they did better on a subsequent complex task of sorting furniture task than those who did the initial task alone.

Vygotsky, like Bruner, stresses the importance of language and social interaction in cognitive development. The information processing approach sees cognitive development independent of social interaction and active in selecting, constructing and interpreting information, as Piaget does. This approach has contributed to the development of **more effective teaching methods using task analysis** and has led to looking at what type of strategies make for good performance in pupils, using memory models to advise against overloading a child's short term memory and encouraging children to understand *how* they learn (Metacognition).

Piaget's theory has also contributed to the areas of moral development, childcare practice and the importance of play.

Flavell (1999) - Interest in the Theory of Mind has recently been applied to many areas of child development including the better understanding of Autism.

Current Research

Many psychologists have moved towards **an information processing approach**, focusing more closely than Piaget on analysing the child's approach to tasks in terms of their encoding and manipulation of specific information. This approach draws on attention, memory and perceptual progress under one umbrella looking at how strategies for organising information change with age.

Metacognition is being aware of how we remember, think, use language and ... well, just know things. Much research has shown that children are increasingly aware of their mental processes but is still trying to work out what is responsible for this brain growth, functional processes or probably both. The answer to this will direct research and the results will have further implications for educational practices and understanding of disorders such as autism.

Interest in the decline in **cognitive abilities of older people** is also being widely researched with an increasingly ageing population. (Stuart-Hamilton, 1994, 2000). Research into **Alzheimer's Disease** has discovered unusually fast shrinkage of the medial temporal lobes supporting the idea of a disease distinct from normal ageing. Full details with up-to-date research can be seen at <http://www.pharm.ox.ac.uk/optima>. Current research is obviously searching for the cause of Alzheimer's and ultimately the cure.

Websites

www.uniview.co.uk

a large collection of psychology videos, DVDs, posters, brain jellies, X-psyting extras, etc; worth checking regularly for latest news

www.theatp.org

the home of the Association for the Teaching of Psychology
invaluable access to information and advice for teachers of psychology in UK and Europe

www.bps.org.uk

the home of The British Psychological Society
free downloads of recent articles from The Psychologist magazine

www.apa.org

the home of the American Psychological Association
nothing free on this site!

www.psychology.heacademy.ac.uk

details of psychology events, resources and research
lists all UK university psychology departments; BPS list of accredited undergraduate courses

www.s-cool.co.uk

revision site for students on a limited number of topics; club-like feeling with an s-magazine giving advice on bank accounts, interview skills and even how to shave!
Teachers World with generic information

<http://www.mrmind.com/mrmind3>

turning the Turing Test upside down, MRMIND challenges you to take the Blurring Test and prove to him(?) that you are human - make your case to a robot of your choice: take the Human Quotient test - great fun and time-waster!

www.youramazingbrain.org.uk

just go and enjoy – the brain in great detail, packed with information, activities

www.holah.karoo.net

information, fun activities, links – excellent for staff and students alike

<http://psyonline.edgehill.ac.uk>

A Level resource from Edgehill College for AQA. Good and reliable resource for students and teachers. Includes a countdown to Mod 4 exams to the nearest second!

<http://psyberfun.users.btopenworld.com/>

too new to comment on but looks promisingly weird, wacky and addictive!

<http://en.wikipedia.org/wiki/Psychology>

extraordinary free encyclopedia which anyone can edit anytime even without being online! Over 1 million entries with definitions and further information

<http://www.brainconnection.com/>

an award-winning site (USA) with lots of relevant material and some excellent animated mini-demonstrations; section on child development

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Further Reading for Students

- Association for the Teaching of Psychology (1992) *Ethics in Psychological research: Guidelines for Students at Pre-degree Level* Leicester ATP available on <http://www.theatp.org/>
- Cardwell, M. (2003) *Complete A-Z Psychology Handbook 3rd Ed.* Ideal students' companion through A Level and undergraduate courses; very user-friendly, definitions and jargon explained, revision and exam tips, diagrams and worked examples
- Gross, R. (2003) *Themes, Issues and Debates in Psychology 2nd Ed.* Hodder Arnold

Further Reading for Teachers

- Anderson, J. R. *Cognitive Development and its Implications* 5th Ed. Palgrave
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Collins
- Davey, Graham (Ed.) (2004) *Complete Psychology* Hodder Arnold
A first year undergraduate text written by a British team – very comprehensive,
plenty of artwork, activity boxes, applications, up to date and user-friendly.
- Gee, James P. (2003) *What Video Games have to Teach us about Learning and
Literacy* Palgrave Macmillan
An American professor of Education controversially argues that many positive
things can be learnt from playing video games. Current and a stimulating read
but may not yet be relevant to any syllabus!
- Goldberg, S. (2000) *Attachment and Development* Hodder Arnold
A comprehensive and critical overview of attachment throughout life including
current emerging research on the role of cognition, emotion and psychobiology
- Griggs, R. A. (2005) *Psychology: A Concise Introduction* Palgrave Macmillan All
the main topics in psychology covered, clearly and concisely - American. A
companion website
<http://bcs.worthpublishers.com/gray/content/psychsim5/launcher.html>
is worth looking at for 20 animated activities
- Messer, D. & Millar, S. (Eds.) (1999) *Exploring Developmental Psychology* Hodder
Arnold
A slightly different development book using a topic based approach with
chapters on emotional development, autism, bullying, dyslexia, the uses of
electronic media in childhood and much more; many discussion points and text
boxes; good teacher resource

Contacts

The Association for the Teaching of Psychology

The ATP has highly experienced teachers and examiners ready to give advice and assistance, especially for new teachers of this topic. They can recommend textbooks and resources that will get you started.

ATP Helpline: Dorothy Coombs

work: dorothy@pursglove.ac.uk 01287 280800

home: dorothycoombs@24whinchat.freemove.co.uk 01287 636502

New teachers of this topic are well advised to get in touch with the ATP:

The Association for the Teaching of Psychology
c/o The British Psychological Society
St Andrew's House
48 Princess Road East
Leicester
LE1 7DR
<http://www.theatp.org>

Annual Conference - The ATP holds an excellent conference for members each July. As well as lectures and workshops, there is an opportunity to meet the examiners and to browse all the latest books and resources.

The British Psychological Society

The British Psychological Society
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Tel: 0116 254 9568
www.bps.org.uk

The American Psychological Association

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