

Case Study Evaluation: Learning in Classroom

by Eleanor Nightingale

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Case Study Evaluation: Learning in Classroom

Mary is a Year 2 teacher about to educate her pupils (ages 6/7) on volumes as a part of the mathematics curriculum. As she has never taught this specific topic before, the assessment from a classroom practitioner would be best to help her approach the problems she is facing; she also has the support of two teaching assistants in the classroom. In her class of 23, there is a range of ability with two children having an Education, Health and Care Plan (EHCP) – one with dyslexia and the other with autism. Mary's approach to the teaching of volume can be constructed around Piagetian theory. This case study evaluation will consider Piaget's theory of cognitive development, how effective the theory is in approaching the topic of volume, special educational needs (SEN), the extent of how useful psychological theory is in real-world educational settings and how these influences could be impacting on the learning of the 23 children in Mary's classroom.

Jean Piaget's theory of cognitive development outlines four stages: sensorimotor (0-2 years), preoperational (2-7 years), concrete operational (7-12 years) and formal operational (11-adulthood). He devised the model describing how people makes sense of their world by gathering and organising information (Piaget, 1954, as cited by Woolfolk, Hughes & Walkup, 2013). Piaget also believed that children progressed through these stages as their brain matured.

Mary's pupils will therefore fall into one of two stages: preoperational or concrete operational. Those in the preoperational stage have gradually developed the ability to think in symbolic form and can now think operations through logically in one direction (Wadsworth, 2003). However, there are still difficulties in seeing another person's point of view and there is an inability to conserve most operations, e.g. volume. Children at this stage will have difficulty focusing on more than one aspect – decentering. For example, in terms of volume, children will only focus on the change in height and ignore the change in diameter.

This is presented in Piaget's (1954) theory, where a child is shown two beakers of the same size, containing the same amount of blue liquid. One of the beakers is then poured into a taller, thinner glass and the child is asked if the beakers held the same amount of liquid. If a child could not conserve, then their answer would be that the taller, thinner glass held more liquid. In contrast, children in the concrete operational stage start to develop an understanding of reversibility, logical operations (e.g. classification), conservation and are able to solve concrete problems in a rational manner (Wadsworth, 2003) and therefore will have started to comprehend conservation and will not have a problem with decentering.

To make the lesson as stimulating as possible, Mary should follow Piaget's conservation task of using beakers and liquid;

this will ensure all children are focused and engaged to learn. Mary's main focus will be to teach all of the children about volumes and give them the basis they need to continue independently or with a teaching assistant. After this introduction, it would be beneficial to the children if they are grouped together based on their understanding of volumes and their presumed cognitive stage of development. Director of the Institute of Education, Peter Mortimore, concluded that setting in mathematics "may be a means of raising the attainment of the more able pupils" (Husbands, 2014). Since the children will not know they are being split into ability-based groups, their self-esteem will not be affected and will benefit all abilities.

Those children in the concrete operational stage will have started to understand that the volume in the taller, thinner beaker is the same as original beaker and will be able to work independently/with each other so Mary can focus her attention to those at the preoperational stage. Mary will know that her teaching has been successful if the children fully understand the concept of volume and can complete the work given to them. Furthermore, if the interaction between peers can help challenge their thoughts and test their thinking on volume then she knows that she has been successful as they can effectively help one another progress by providing feedback on how they have each done.

Pupils at the preoperational stage will need Mary to further explain the concept of volume and how the volume of the original beaker has not changed despite it looking like there is more liquid in the taller beaker. This can be done through the creation of disequilibrium. Having the disequilibrium at optimal level and constructing situations that lead to conflict between what children think will happen and what actually does happen (e.g. children not understanding that the volume of the original beaker did not change) will motivate growth as pupils are encouraged to keep searching for a solution/ (Woolfolk et al., 2013). Through the use of visual aid (beakers and liquid), preoperational pupils can picture the volumes since they have not yet mastered the required logical mental operations that concrete operational students have. How successful Mary is at teaching volumes is dependent on her ability to challenge students through assimilation and accommodation: the former where pupils fit new information into existing schemas and the latter where pupils alter their existing schemas to respond to new information (Woolfolk et al., 2013). If the students are challenged, they will have to change their schemas accordingly and will show that Mary has been successful in her teaching.

One way in which Mary can ensure that the two children with SEN are fully included in her class is by adapting the task and expression of instructions to let them get the best out of the lesson. Adapting the instructions for the child with dyslexia will allow them to feel included as they may usually be unable to follow simple instructions, which others in the class may find easy (Hodge, 2000). Furthermore, support and collaboration among teachers and teaching assistants is very important for someone with autism; supports such as smaller classes, consistency in instructions, and structured environments may be a part of this (Friend, 2006); altering instructions to the child's level and having a small class of 23 children will all help build the two children's understanding and ensure that they are fully included.

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Another way in which Mary can ensure that the two children with SEN are fully included in her class is by continuing the use of the visual aids. The use of visual and kinaesthetic teaching approaches will help engage the children with SEN in learning volumes; studies have shown that visual supports are beneficial when mainstreaming a child with special needs, specifically autism (Rao & Gagie, 2006). The liquid conservation task will let the pupils to visualise the volumes, allowing them to have a positive learning experience. Teaching assistants will help adapt resources and support children with SEN (UNISON, 2013) and will address any issues that they do not understand; this, alongside the use of the children's EHCPs, will ensure that they get full inclusion in the lesson. The teaching assistants can also reassure Mary that her teaching is successful by keeping her up to date with the SEN children's progress and letting her know that her adaptation of the work for them is suitable yet still challenging (in terms of disequilibrium).

Using Piaget's theory of cognitive development to construct Mary's teaching of volume has some positives and negatives. A weakness of this theory is how Piaget underestimates a child's operational competence (Lourenço & Machado, 1996). Researchers have shown that children aged 5-6 are already capable of conservation (Acredolo & Acredolo, 1979; McGarrigle & Donaldson, 1974). This lack of consistency across the stages infers that children are not limited to the set stages, do not have to progress according to their age and can develop at a faster or slower rate than their peers.


On the other hand, there is an agreement that children do go through the changes suggested by Piaget (Miller, 2002). Despite that not all children advance at the same rate as each other, they are still given the opportunity to develop even if they are at different stages in Piaget's model. Simply knowing a child's age is not a guarantee that you know how the child will think (Lourenço & Machado, 1996). In addition, the concept of stages can highlight if a child falls behind in their development and allows parents & teachers to assess where




the child is at, taking action if required. This accommodation of children lacking or exceeding does not limit the individual and lets them advance at their own speed.

Furthermore, viewing the child as an active agent is another strength of Piaget's theory. Children are not seen as passive in their own development process and as a result, there is now an emphasis on children being actively involved in the construction of their personal knowledge and Citation Needed understanding. This is crucial for assimilation and accommodation where an active learner is needed since problem-solving skills are discovered and not taught (Inhelder & Piaget, 1958). Piaget does not underestimate the importance and ability of the child in their own cognitive development and this therefore shows that their contribution is indispensable.


Conversely, Piaget's theory does not take into consideration any social factors that could be contributing to a child's development such as experiences, language and social interactions. Bruner's (1966) model of cognitive development considers these influences and is comprised of three modes: the enactive mode (similar to the sensorimotor stage) where knowledge is obtained through actions, the iconic mode in which knowledge is obtained through images & Similarities and the symbolic mode, where children store information in the form of symbols and language. 20 Bruner viewed language as symbolic, logical and operational whereas Piaget considered language to be unimportant and an expression of thought (Hill, 2000). By not incorporating social factors, Piaget has limited his theory and left out some crucial influences that could be contributing to a child's development.

One final criticism of Piaget's theory of cognitive development, is that cultural differences are present. The effect that culture has on cognitive development was not considered by Piaget; Dasen (1994) conducted a study with Aborigine children aged 8-14 years old in the remote areas of Australia. They were given Piaget's conservation task of using the beakers and blue liquid. Results showed that conservation ability was developed later in aboriginal children, between 10-13 years old compared to Piaget's predicted age of 7 years old. This

suggests that we cannot generalise Piaget's theory beyond that of Western cultures. If it was then there would then be an issue with imposed etic due to our culture-specific idea of conservation being wrongly forced onto non-Western cultures. 

Piaget's theory of cognitive development has been extremely useful and influential in real-world educational settings; in 1966, a review of primary education was conducted by the UK government as a result of Piaget's theory. It resulted in the publication of the 1967 Plowden Report which outlines Piaget's four stages in intellectual development, questions testing & intelligence quotient (IQ) and emphasises the "need to see children as individuals" (Gillard, 2004). The theory of cognitive development has therefore been fundamental to the transformation of the primary school curriculum & teaching practise.   

Piaget's idea of discovery learning is another reason as to why his theory is useful in an educational setting. Discovery learning is where children learn best through doing and actively exploring their environment; it encourages active engagement and promotes, autonomy, motivation and independence (Bruner, 1961). Piaget's theory has therefore provided us with a practical use in the advancement of a child's cognitive development and urges teachers to encourage the exploration of knowledge in children.

To summarise, the use of Piaget's theory of cognitive development to construct Mary's mathematics lesson is extremely useful and appropriate. Piaget's preoperational and concrete operational stages will assist Mary in structuring her lesson on volumes and the concept of conservation, decentring and disequilibrium (including assimilation & accommodation) will allow Mary to know if her teaching has been successful. Using Piaget's liquid conservation task will help visually aid all 23 of Mary's pupils and will ensure that they are all focused and engaged to learn. Adapting the task and expression of instructions alongside the support of the teaching assistants will allow the two children with EHCP's and SEN to be fully included in the lesson. 

Overall, Piaget's cognitive development theory underestimates a child's operational competence yet still allows for the child to progress through the stages at their own rate while not limiting them. Seeing the child as an active agent in their own cognitive development highlights the importance and ability of the child and therefore indicates that their contribution is central. However, the lack of acknowledgement for social factors and the presence of cultural differences weakens Piaget's theory and reduces its generalisability beyond Western cultures. Piaget's theory is useful in real-world educational settings as it has brought about change in the primary school curriculum & teaching practise due to the introduction of the Plowden report (1967). Through the concept of discovery learning, Piaget encourages teachers to promote the exploration of knowledge in children and urges them to be active learners in their own cognitive development.

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GRADEMARK REPORT

FINAL GRADE

78 / 100

GENERAL COMMENTS

Instructor

This is an excellent case study report, demonstrating detailed knowledge and understanding, and written in a clear and confident style. Please see in-text comments and below for more detailed feedback.

You demonstrate excellent knowledge throughout the case study, and this is amply supported by a wide and appropriate range of sources. It is clear that you have conducted independent research that has extended well beyond the lecture contents. This is to be encouraged for future assignments, as it will help in the development of your analytical and writing skills.

There is a good, logical structure to the assignment, with appropriate introductory and concluding sections. The main points flow very well, and there is evidence that you have made links within and between points.

Analysis is very strong throughout, and it is pleasing to note the inclusion of disequilibrium, assimilation and accommodation in the assignment. Use of additional competing theories (e.g. Bruner) was especially useful in the section on criticisms, although Vygotsky would have been another interesting inclusion (space-permitting).

Your style is generally excellent and flows very well. There is a small number of typos/grammatical slips (see in-text) that you should aim to avoid, although these did not hinder understanding. APA referencing is excellent throughout.

Overall, an excellent case study report and a pleasing way to complete the assessment for PSY4422. If you would like to discuss this feedback further, please do not hesitate to contact me.

Judith



Comment 1

This is a little unclear



Comment 2

Excellent introduction



Comment 3

children make



Comment 4

If possible, avoid secondary citations and find the original one.



Comment 5

This is explained very clearly



Comment 6

While this is the classic approach, I wonder if this could be made more interesting and relevant to today's children?



Comment 7

Is this the one in London, as there are lots with this name, so best to specify (in terms of education system).



Comment 8

Although setting and grouping within classrooms are not necessarily the same thing



Comment 9

Good point and well expressed



Comment 10

Excellent point



Comment 11

omit?



Comment 12

find it more challenging to ...



Comment 13

Good consideration of SEN in this section



Comment 14

omit



Comment 15

are fully included (- try to avoid using 'get' in formal writing).



Comment 16

No apostrophe needed



Comment 17

always?



Comment 18

Replace with 'of'



Comment 19

and



Citation Needed

Cite Source:

Please use the link below to find links to information regarding specific citation styles:
http://www.plagiarism.org/plag_article_citation_styles.html



Comment 20

and



Comment 21

Excellent section on criticisms - you could potentially also have mentioned Vygotsky here, although I appreciate there may not have been space.



Comment 22

and



Comment 23

and



Comment 24

It would have been useful here to link the Plowden Report to more modern practices, to emphasise its ongoing significance.



Comment 25

No apostrophe needed

PAGE 7



Comment 26

Western?



Comment 27

Very thorough conclusion



Comment 28

This is an excellent reference list, with highly accurate APA referencing style used throughout.

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KNOWLEDGE (30%)

7 / 8

Knowledge and Understanding

EXCEPTIONAL FIRST (90-100) (8)	A polished grasp of the subject is demonstrated with an astute and authoritative approach to complexity.
OUTSTANDING FIRST (80-89) (7)	A comprehensive and confident grasp with a strong sense of subject complexity. Explicitly answers the question or addresses the specific task requirements.
FIRST (70-79) (6)	Thorough understanding is evident and has been well applied to the question or task. Explicitly answers the question or addresses the task requirements.
2(I) (60-69) (5)	Secure, general understanding and reasonable application to question or task. Attempts to answer the question in an analytic way.
2(II) (50-59) (4)	Sound knowledge relevant to the question or project.
THIRD (40-49) (3)	Limited knowledge shows basic understanding. Some awareness of the context of the question or task.
FAIL (30-39) (2)	Faulty understanding of question or concepts. Irrelevant or mostly absent content.
ABJECT FAIL (0-29) (1)	No understanding of question or concepts. Irrelevant or absent content.

STRUCTURE (15%)

6 / 8

Structure and Argument

EXCEPTIONAL FIRST (90-100) (8)	Effective and integrated over-arching argument or structure, clear, insightful synthesis. Highly creative understanding of topic.
OUTSTANDING FIRST (80-89) (7)	Effective overall argument with clear and insightful connections between claims. Creative understanding of the topic.
FIRST (70-79) (6)	Clear and logical focus and direction with valuable connections made between claims. Good level of creativity.
2(I) (60-69) (5)	Well-focused on the question with some clear connections made between claims and some overall direction. Some creativity.
2(II) (50-59) (4)	Addresses the topic with some direction and makes some connections between claims or different elements of the task.
THIRD (40-49) (3)	Argument is weak and difficult to detect. Connections made between statements limited
FAIL (30-39) (2)	Lack of argument. Faulty connection between statements.

ABJECT FAIL (0-29) No argument. Many faulty connections between statements.
(1)

ANALYSIS (20%)

6 / 8

Analysis and Conclusions

EXCEPTIONAL FIRST (90-100) (8) Original and searching analysis, critical appraisal of task and judicious conclusions. The conclusions presented provide a comprehensive and highly effective summary of the issues presented and discussed. Overall, the analysis and conclusions are compelling.

OUTSTANDING FIRST (80-89) (7) Searching analysis with pertinent conclusions drawn. Draws conclusions that provide an excellent summary of the issues and arguments discussed.

FIRST (70-79) (6) **Insightful analysis throughout with appropriate conclusions drawn.**

2(I) (60-69) (5) Strong analysis of salient illustrative examples. Some general conclusions drawn.

2(II) (50-59) (4) Some conclusions drawn based on some reasonable comparisons and examples.

THIRD (40-49) (3) Basic analysis. Remains descriptive, little evaluation or comparison. Few clear conclusions.

FAIL (30-39) (2) Insufficient evaluation or attempt to make comparisons. Conclusions illogical insufficient.

ABJECT FAIL (0-29) (1) No evaluation or attempt to make comparisons. Conclusions illogical or absent.

SOURCES (15%)

6 / 8

Use of Sources

EXCEPTIONAL FIRST (90-100) (8) Extensive and evaluative use of evidential support for argument. Gives very wide-ranging and appropriate evidential support for claims made and shows evidence of having explored the appropriate literature thoroughly and critically.

OUTSTANDING FIRST (80-89) (7) Extensive use of evidence with some evaluation. Gives wide-ranging and appropriate evidential support for claims made, and shows evidence of having explored the appropriate literature thoroughly and critically.

FIRST (70-79) (6) **Clear support of argument with well selected evidence. Appropriate evidential support for claims made along with evaluation and critical analysis.**

2(I) (60-69) (5) Draws on relevant independent sources and evidence to support claims.

2(II) (50-59) (4) Makes simple use of evidence from recommended sources.

THIRD (40-49) (3) Relies on superficial statements with little supporting evidence.

FAIL (30-39) Lack of evidence or relevant sources.
(2)

ABJECT FAIL (0-29) No evidence or relevant sources.
(1)

APA (5%)

7 / 8

APA-style Referencing

EXCEPTIONAL FIRST (90-100) Flawless, including in-text citations and the format and content of the references list.
(8)

OUTSTANDING FIRST (80-89) Flawless, including in-text citations and the format and content of the references list.
(7)

FIRST (70-79) Excellent, including in-text citations and the format and content of the references list.
(6)

2(I) (60-69) Consistent and accurate, including in-text citations and the format and content of the references list.
(5)

2(II) (50-59) Largely consistent and accurate, including in-text citations and the format and content of the references list.
(4)

THIRD (40-49) Limited referencing/ adherence to APA style.
(3)

FAIL (30-39) Inadequate referencing.
(2)

ABJECT FAIL (0-29) Inadequate or absent.
(1)

STYLE (15%)

6 / 8

Style and Clarity

EXCEPTIONAL FIRST (90-100) Professional and sophisticated with exceptional clarity and coherence. Excellent, controlled, confident delivery, pace, and audience engagement.
(8)

OUTSTANDING FIRST (80-89) Professional and sophisticated with great clarity and coherence. Excellent, controlled, confident delivery, pace, and audience engagement.
(7)

FIRST (70-79) Fluent and accurate with great clarity and coherence. Mostly confident delivery, pace and audience engagement.
(6)

2(I) (60-69) Clear and coherent. Good delivery, pace and audience engagement
(5)

2(II) (50-59) Some lapses of clarity. Some expression is ineffective. Satisfactory delivery, pace and audience engagement
(4)

THIRD (40-49) Adequate, but awkward expression throughout with little clarity. Poor delivery, pace
(3)

(3) and audience engagement

FAIL (30-39) Inadequate and unclear presentation. Impaired communication. Error-strewn.
(2)

ABJECT FAIL (0-29) Grossly inadequate and unclear presentation. Severely impaired communication.
(1) Error-strewn.