

The opportunities to learn offered by a Learning Study in teachers' professional development

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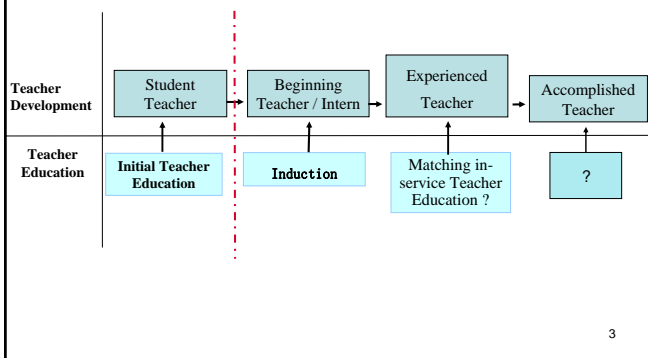
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"Since teachers have the most direct, sustained contact with students, as well as considerable control over what is taught and the climate for learning, it is reasonably assumed that improving teachers' knowledge, skills and dispositions is one of the most critical steps to improving student achievement."

King & Newmann (2001). Building schooo capacity through professional development: conceptual and empirical considerations. The International Journal of Educational Management, p.86.

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Teacher development needs to be supported



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What a Learning Study can contribute towards teachers' learning

- There are many attributes of a good teacher
- They are necessary but not sufficient conditions
- Learning Study contributes to one of these -- empowering teachers to help students to learn better

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The impact of Learning Studies on teachers

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Survey on 'The Impact of Learning Study' - Cohort A-C1

Questionnaire - close ended section (Scale: 5-Strongly Agree; 1-Strongly Disagree)	Either strongly agree or agree		
	Cohort A (Return rate=31%, 40 respondents from 12 schools)	Cohort B (Return rate=88%, 148 respondents from 36 schools)	Cohort C1 (Return rate=80%, 100 respondents from 20 schools)
The teachers reflected that:			
My teaching has improved after taking part in the Learning Study	80%	89%	95%
I have developed a deeper understanding of the subject matter	85%	95%	95%
I am more focused on the object of learning and its critical aspects in planning a lesson	95%	98%	100%
I have become more sensitive to students' learning difficulties	83%	89%	92%
I am willing to take part in collaboration, e.g. lesson planning, lesson observations	80%	86%	90%
LS contributes to teachers' professional development	80%	93%	97%
I will apply the Theory of Variation in my lesson planning	65%	87%	91%
I will make more use of formative assessment results as inputs to my teaching	73%	88%	91%
LS can improve the effectiveness of collaborative lesson planning	60%	84%	92%
The concepts and procedures of Learning Study are sustainable in my school	60%	76%	81%
I am interested in conducting further Learning Studies	60%	68%	69%

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Survey on 'The Impact of Learning Study' – Principals (up to Aug 2007)

Questionnaire - close ended section (Scale: 5-Strongly Agree; 1-Strongly Disagree)	Either strongly agree or agree		
	Cohort A (Return rate=28%, 10 Principals)	Cohort B (Return rate=63%, 26 Principals)	Cohort C1 (Return rate=64%, 16 Principals)
The Principals reflected that:			
After taking part in Learning Study, the overall capability in teaching of teachers has been enhanced	90%	92%	94%
Learning Study brought a better atmosphere for lesson observation in my school	90%	96%	94%
Learning Study improved the effectiveness of collaborative lesson planning in my school	100%	92%	93%
Learning Study helped to enhance the teachers' professionalism	90%	96%	100%
The concept and the mode of practice of Learning Study can be continued in our school	80%	81%	81%
My school is interested in continuing to participate in Learning Studies	60%	73%	88%
I have planned to use Learning Study to promote teacher professional development and improvement in teaching and learning in my school.	70%	80%	81%

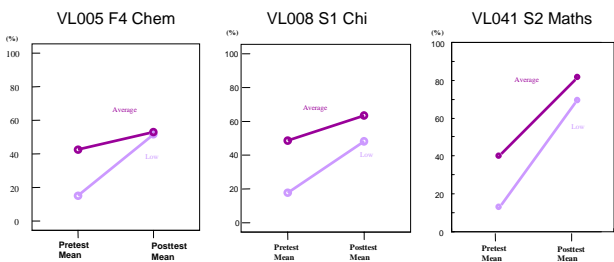
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“The only measure that counts at the end of the day is whether the gap between high and low performers is explicitly reduced.”

Michael Fullan (2003). Change Forces with a Vengeance. RoutledgeFalmer, p.12.

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Narrowing the gap

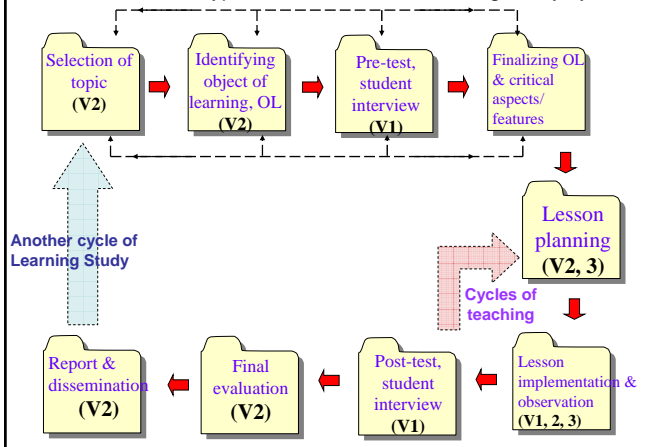


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Opportunities for teacher learning are available at every stage of the Learning Study

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The use of three types of variation in a Learning Study cycle



The opportunities for teacher learning

	Learning from Students	Learning from members of the Research group (within school)	Learning in a wider teacher community (Inter-school)
Student Interviews / pretest			
Lesson preparation meetings			
Enactment of the research lesson, lesson observation			
Post lesson conference			
Post lesson interviews and post test			
Data interpretation			
Public presentation			

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Lesson 1:

Teaching may not result in worthwhile learning

- Students' understanding of an image formed by a plane mirror



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Lesson 2: Students may experience difficulties that are hard to predict

Students' understanding of the use of the past tense



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Lesson 3:

There are alternative ways to deal with the object of learning - teachers can learn from their colleagues



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Lesson 4:
In depth understanding of an object of learning requires connecting with other parts, including the philosophy of the subject discipline

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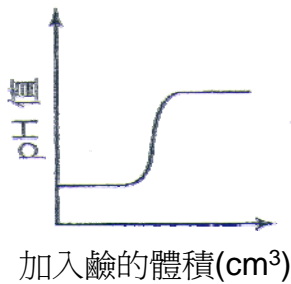
Drawing conclusions from an experimental result may require an understanding of the nature of science/ the concept of hypothesis testing.

	copper	iron	magnesium	zinc
Hydrochloric acid (lower concentration 1M)	*	✓	✓	✓
Hydrochloric acid (higher concentration 5 M)	*	✓	✓	✓
Vinegar (lower concentration 1M)	*	✓	✓	✓
Vinegar (higher concentration 5M)	*	✓	✓	✓

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Change in pH during titration - What is the curve flat initially? Definition of pH.

在中和作用中pH值的改變



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Lesson 6:

Learning comes from discernment, which is made possible by variation

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1st cycle Lesson flow

Number of periods: 2 (60 minutes)

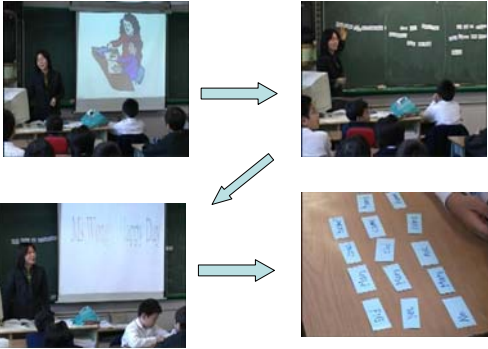


Post lesson reflection

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2nd cycle Lesson flow

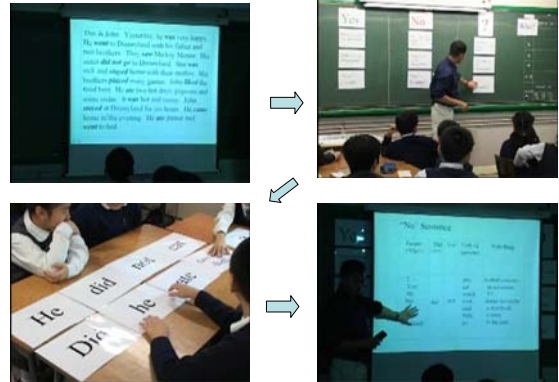
Number of period: 2 (60 minutes)



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3rd cycle Lesson flow

Number of period: 2 (60 minutes)



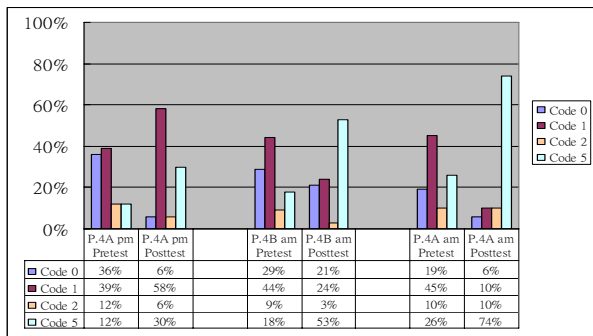
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Section B(2)

Question: you a monkey?

Answer: Yes, I saw a monkey.

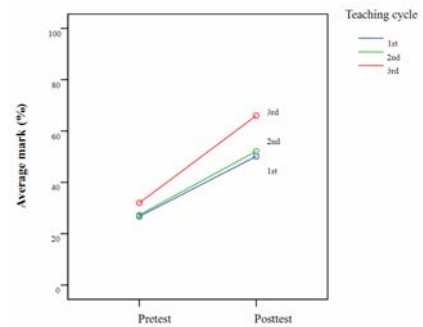
Code 0: Incomprehensible
Code 1: wrong choice of tense form
Code 2: no/wrong lexical verb
Code 5: correct



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Learning outcome by teaching cycle

Pre & post test student performance



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The opportunities for teacher learning

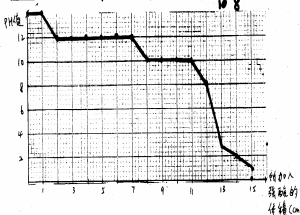
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Lesson 7: Learning outcomes are best explained by consulting a certain group – the students

乙南 使用測驗(BC)中在課外強化的結果 (每次加1cm) 測驗 共15次

加入的強化的次數(cm) 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
課外時間 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10



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**Lesson 8:
Don't under estimate the students' capability to learn**

Student talking about his experience in the class



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Pre-lesson interview



teaching



Teacher reflection and post-interview

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- The design of professional development itself should be grounded not only in a conception of how individual teachers learn, but also in a conception of how schools and the teaching community affect and are affected by, teachers' learning.
- The dissemination activities of LS enables teachers to connect to the teaching community.

**Lesson 8:
Teachers learn as they explain to others how they have dealt with the object of learning**

Teachers conducting a public presentation



Conclusion

Teacher learning is most likely to occur

- when teachers can concentrate on instruction and student outcomes in the specific contexts in which they teach.
- if teachers have sustained opportunities to study, to experiment with and to receive helpful feedback on specific innovations.
- When teachers have opportunities to collaborate with professional peers, both within and outside of their schools, along with access to the expertise of external researchers and program developers.

King & Newmann (2001). Building school capacity through professional development: conceptual and empirical considerations. *The International Journal of Educational Management*, p.86.

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Learning Studies is doing just that!

As a result, teachers gain

- deeper understanding of the object of learning and its critical aspects
- deeper understanding of students' difficulties w.r.t. the object of learning
- deeper understanding of how to help students to discern certain critical aspects through variation
- deeper understanding of students' capabilities and potentials.

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- Learning always requires something to be learnt, i.e. an object of learning.
- Teacher learning is contextualised by focusing on a lesson, as teachers identify a certain object of learning, make it available to the students, watch the lesson and reflect upon it.
- "Helping students to learn an object of learning" can become an object of learning for teachers themselves.

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Thank you

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