

Fairness and Professionalism What Counts in School-based Assessment

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Source: Hisashi Otsuji

Would you make use of this video for your Science Practical Assessment? Why or why not?



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Overview

- Assessment reforms in practical science
- Factors impacting on implementation of assessment for learning
- Cases from Hong Kong and Singapore
 - Teachers' concerns about fairness
 - Teachers' responses to policy change
- Implication on teacher professional development



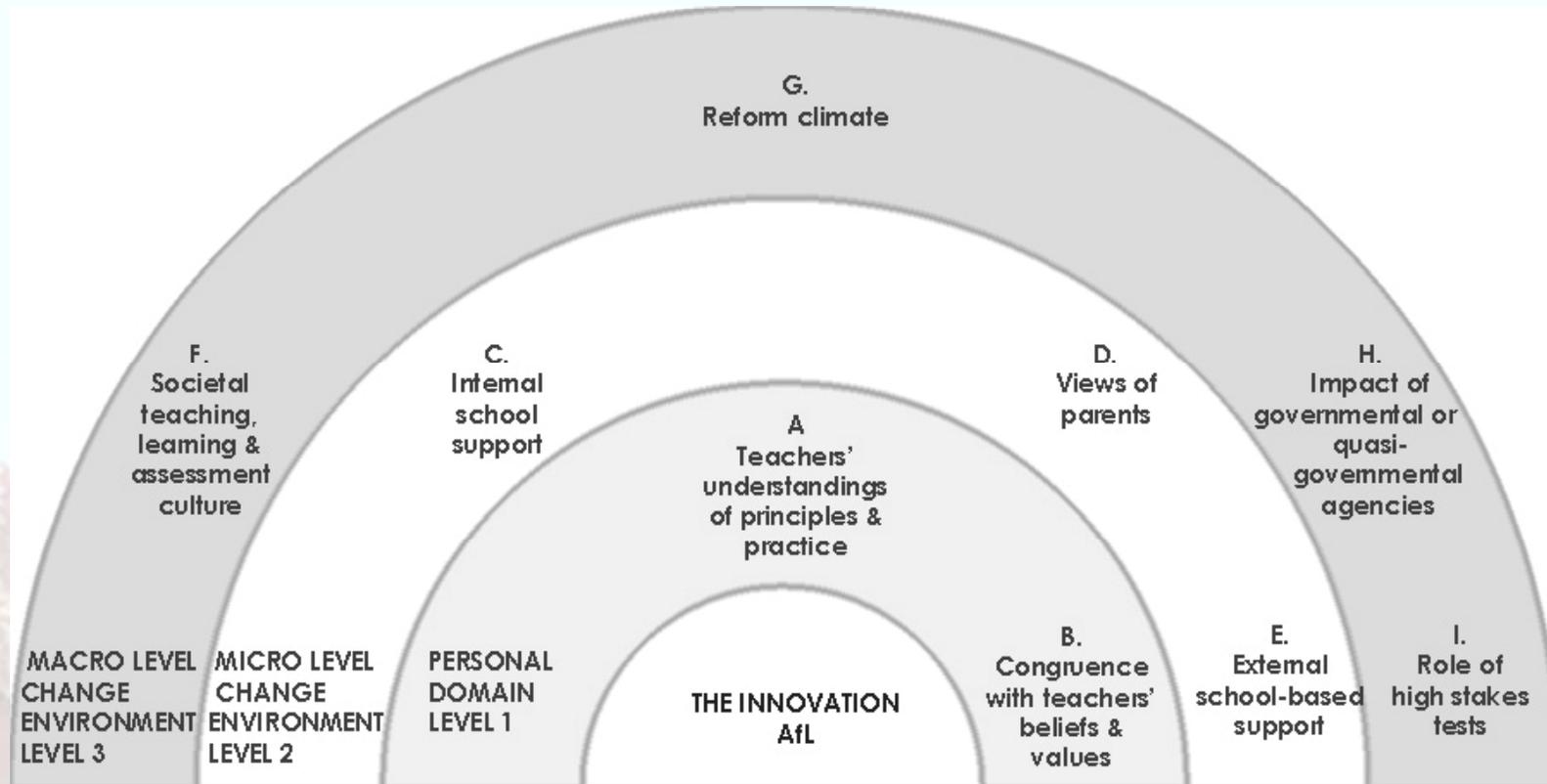
Assessment reforms in practical science



- Before 1993: HKAL Biology Practical Exam
 - dissect **20 rats** in preparing for the exam
- HKAL Bio Teacher Assessment Scheme
 - Alleviate problem of over-practising of rat dissections
 - Reduce students' exam pressure
 - Valid assessment of students' practical abilities
 - Enhance teachers' professionalism and widen their experience



Factors impacting on the implementation of SBA



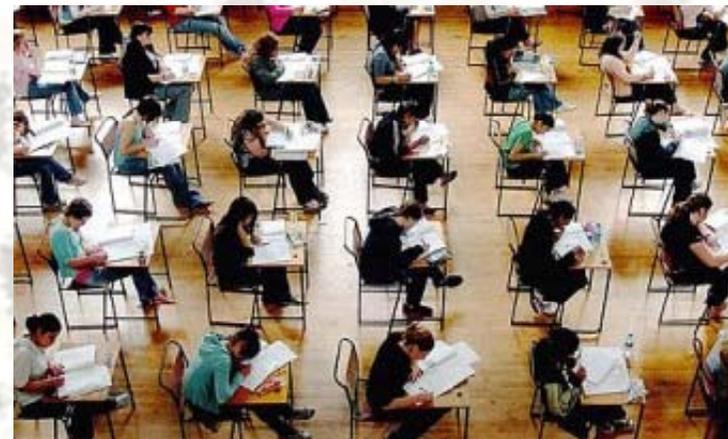
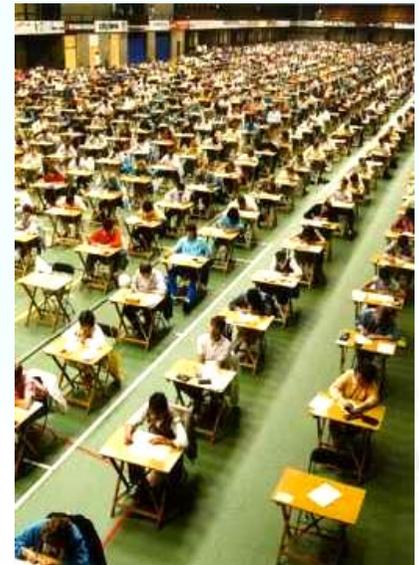
An exploratory framework of factors impacting on the implementation of AfL

(Carless, 2005)

Exam-led education systems

- ‘In fact, students sometimes stop their teachers teaching certain topics or materials which are not in the [exam] syllabus.’

– *Choi (1999)*



Exam-led education systems

- ‘I breathe deeply’
- ‘trying my best to keep clam’
- ‘my heart sinks’
- ‘panic comes over me’
- ‘I try to hold back my tears’
- ‘tears pour down my face’
- ‘I am so nervous about it’
- ‘I heave a sigh of relief’

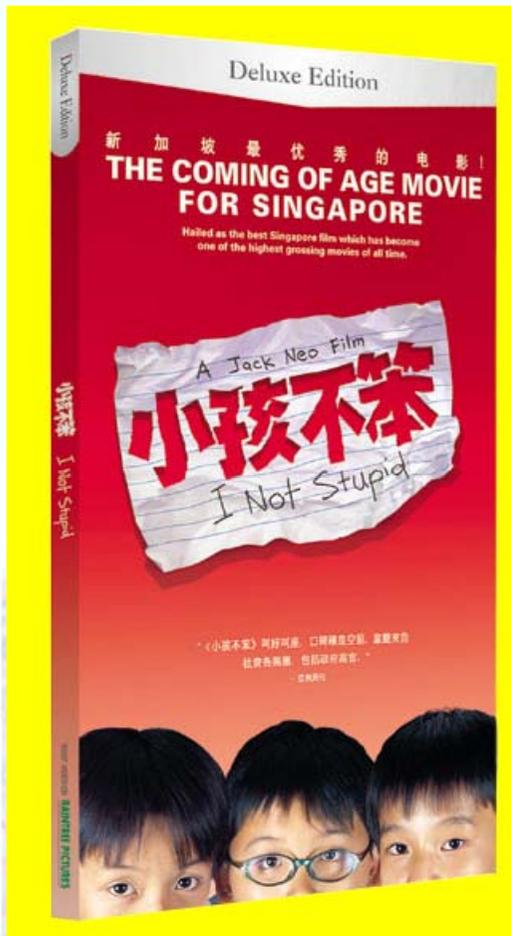
– Pong & Chow (2002)



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Exam-led education systems



- Teachers are crucial elements in students' successes in these high-stakes tests. They are expected to implement and monitor **compliance** with standard operating procedures and **deviance** from published and unpublished approaches and norms is **unexpected, unrewarded** and **risky**.

Source: <http://www.inotstupid.com.sg/>

– *Towndrow et al. (2008)*



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Concerns about fairness

- Remains as one of the top 10 concerns among HK teachers (Yip & Cheung 2005)
- Hong Kong – John, Bob and Carl (Yung, 2001)
- Singapore – Sophia (Tan & Towndrow, 2009)

**Sophia:
No talking!**



Preparing for a forthcoming summative SPA task

- assessing students' individual practical skills
- a practice experiment to be completed under mock exam conditions



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No talking



All right, now this is an **exam question** so when you are going to do your experiment there will be **no talking**.

Okay, quiet. Since this is **individual work**, ... you can share your water bath... That's all. Alright.

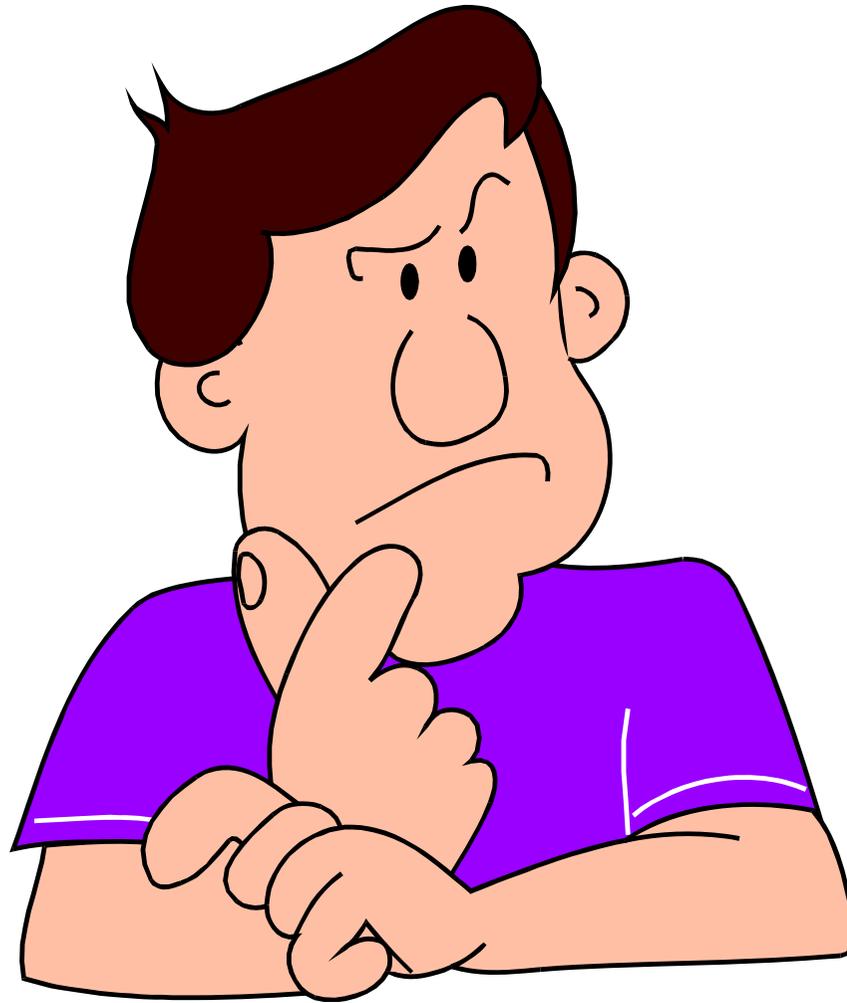
No more talking. You only share water bath, ... But anything else, boiling tubes, you have your own... Any more question? ... Alright?

You will have ...about 45 minutes ... You may begin now...

[After 3 minutes]

You don't seem to understand **this is an assessment.**
Nobody should be talking. Not even to your partner.





**John:
I must be fair!**

Free of charge!



- John started the TAS practical by distributing the lab manual to the class and gave them some time to read. He then invited questions from the class:

Any questions before we start? Any questions, please?

[There was no question from the Ss. John then said again.]

Come on, any question? **Free of charge! Marks will not be deducted.** Come on. Any question?

[Again, there was no question from the students. So John signalled the class to begin their work.]



I have a question

Student: I have a question; but will marks be deducted?

John: You ask it first.

Student: Chee! I don't want to ask then.

John: If I am going to deduct marks, I will tell you first.

Student: If I ask you the question, but then you tell me afterwards that marks have been deducted, I will be very depressed.

John: Just go ahead and ask me. And you will know what the outcome would be.

[The student then asked the question.]

John: I have to deduct marks from you if I answer this question. Therefore, I am not going to answer this question. You think about it yourself.

Student: Are you really not going to deduct any marks from me at all?

John: Go back and do your work quickly.



Why didn't John answer students' questions?

I must be fair. I can't answer some students' questions but not the others. If I answer her question, I am sure that I will have to tell the rest of the class using the microphone...

What bothers me is that, suppose I am going to answer students' question, how many questions should I entertain, and to what extent?

This is the most difficult part. If there was no TAS, I would then have given her a definite answer ...



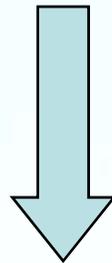
You just can't fool them

TAS is certainly an assessment. I have been criticized by my chemistry colleague that the TAS is a training and not an assessment. But, the hard fact is that I have to submit the marks to Hong Kong Exams Authority. It is no good placing too much emphasis on learning ... If you tell students that marks are not important, just to relax and try, students just would not believe in what you say, especially for students in this school. They know what is going on. You just can't fool them.



Caught in a dilemma

trying to be fair $\leftarrow \rightarrow$ helping Ss to solve
their problems



Teaching had given way to assessment.
Formative function of assessment was lost.





Bob:
**They are learning
while I am
assessing them.**

They are learning while I am assessing them

- Bob has **frequent discussions** with individual Ss (641 DTUs vs 132 DTUs for John)
- Conscious of this even at the planning stage:
 - *One of my major considerations in selecting practicals for the TAS assessment is whether I can **make use of the practical to induce some kind of discussion with my students and that they can learn through it**, something that they have not thought about before. This is **a very crucial part in their learning**. That's why I always ask them questions continually throughout the practical. So, they are in fact **learning while I am assessing them**.*



So, Bob always responds to students queries with remarks like

- “What do you **think**?”
- “What better procedure can you **think** of?”
- “You **think** it over yourself first. I will come back to you later.”



Bob explained in a post-lesson interview

*In the past, I would point out their mistakes directly to them. Now, I have to remind myself to be conscious of this. Telling them directly is the fastest and simplest way, but it does not make them think. **This is a good influence on both teaching and learning.***



Is fairness still a concern for Bob?

- Bob feels at ease engaging himself in discussion with students. However, he does not feel quite the same for discussions that are held amongst students themselves

*I won't intervene students' discussion unless they have been discussing for a long time. I think this is okay. This may create a more **relaxed atmosphere** ... In fact, this is a **difficult problem** for me. Suppose, if there is no assessment, they will learn more from each other through the discussions.*



Carl:
Is it really fair?



Discuss with your classmates

- There are ***a lot of discussions*** taking place between Carl and his students as well as amongst students themselves.
- For example, in a prelab discussion, Carl said to the class:
 - “Yes, it is more accurate. But why is it more accurate? Even though we are running out of time, I want at this point, you spend about a minute to ***discuss with your classmates*** why using is more accurate? I will come back to you after one minute.”



Would this create a dilemma for Carl?

*This is a compromise to students' cultural habits of not wanting to be vocal. They are passive. They are unable to respond promptly. I have to give them time to think, to process and to discuss their ideas so as to **build up their confidence**..... I think limited discussion won't affect their overall performance too much..... **They have undergone the educational process. Is that really going to affect the fairness of the assessment?** The interaction amongst themselves and between us is **an unexplored treasure**.....*



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Carl also encouraged students to ask him questions during the TAS practicals

This is what science education is about. TAS never prohibits teachers from responding to questions raised by students. Students' overall performance will not be affected by just one or two discussion points... Differentiation ... will be reflected in their overall performance in the reports..... ***The idea of the TAS is to integrate assessment with teaching and learning.***



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Carl did raise a point related to the notion of fairness

*I fear that students may feel bored when I ask them to **stay after school every biology practical**. This is impossible when we are emphasizing **all-round education**. Students are encouraged to participate in more extracurricular activities. **It is unfair to them** if they are denied of these options.*



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Three views of fairness



- **John (Sophia)**: as an extension of public examination procedure

A constraint

- **Bob** : providing chances for students to learn the subject matter

An opportunity

- **Carl** : providing students with an all-round education

Recognition of value elsewhere



What is your view of fairness?

How does it compare with theirs?



Teacher responses to the policy change

- Singapore – professional dialogue on the design of laboratory tasks (Towndrow et al, 2008)
- Hong Kong – adopting a critical stance towards policy change (Yung, 2002)

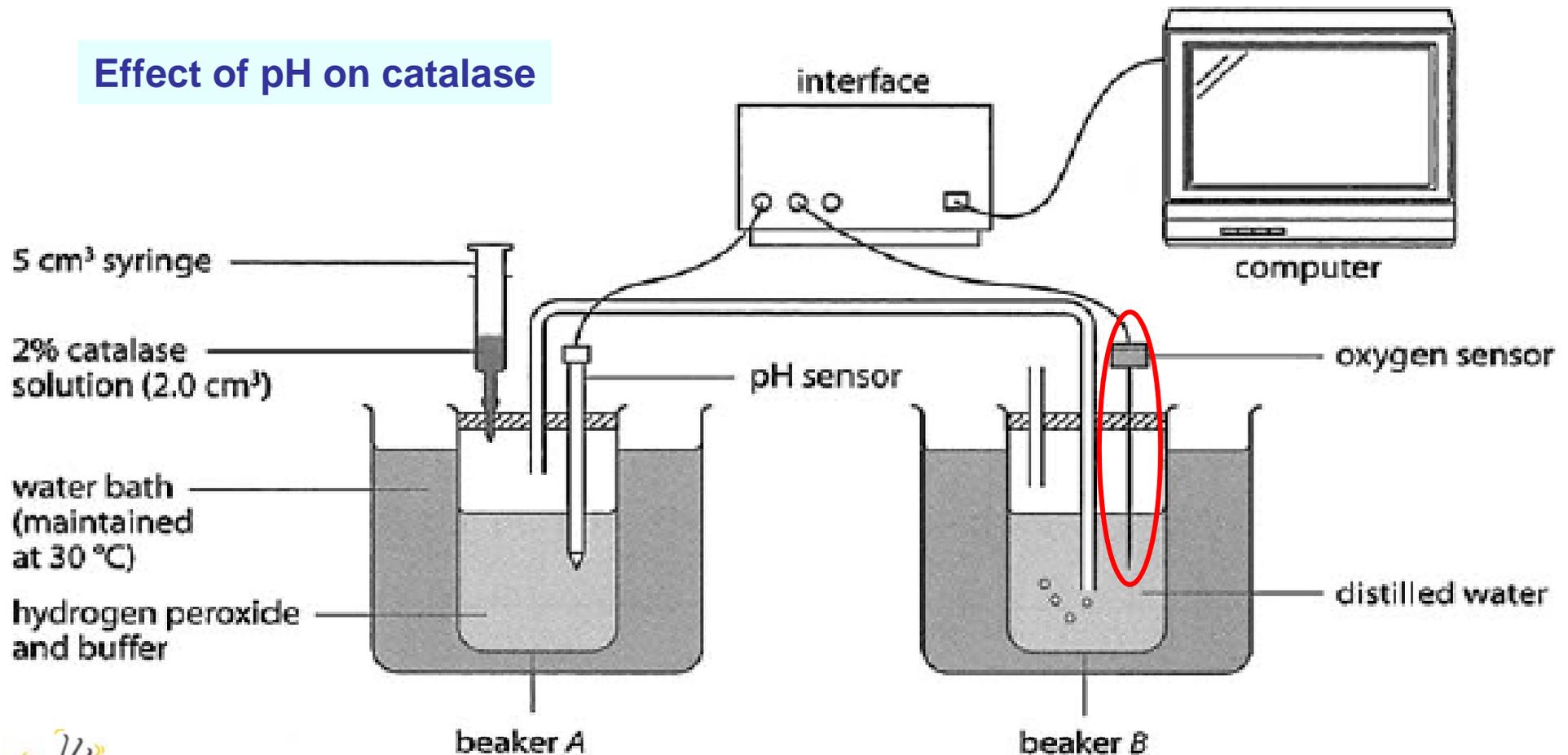
Professional dialogue on design of laboratory tasks

- 3 researchers + 4 upper secondary biology teachers in a Singapore secondary school
- over a period of 2 school terms
 - discuss how to incorporate inquiry into commercially published workbook investigations



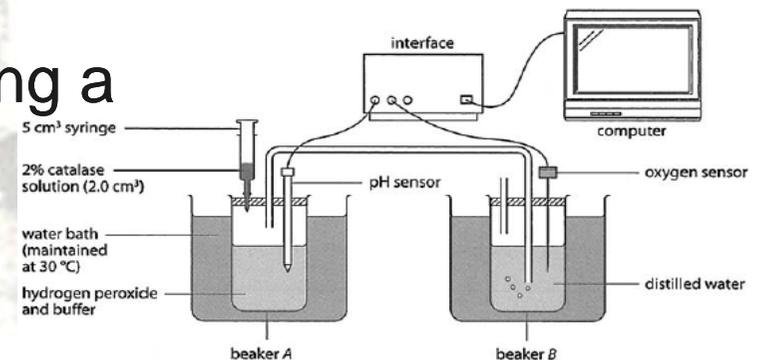
Professional dialogue on design of laboratory tasks

Effect of pH on catalase



Professional dialogue on design of laboratory tasks

- Trial run (to familiarize with equipment)
- Vigorous enzymatic reaction => unable to pass and dissolve oxygen in beaker B (to be measured by the dissolved oxygen sensor)
- $\frac{1}{2}$ volume of reactants => bubbles but sensor failed to detect the smaller changes in dissolved oxygen content
- Dissolved oxygen sensor – accuracy? work mechanism?
- Only for point sampling (as it consumes oxygen when used continuously)
- **Work-around:** a simpler design using a sensor from another manufacturer



Professional dialogue on design of laboratory tasks

- The researchers and teachers went on to conclude their work jointly correcting and modifying the students' lab sheet.
- Teachers enjoyed and learned through the **cooperative process of trouble- shooting and thinking about the experiment.**
- Towndrow et al (2008) characterized this as beginning of a curriculum development **com practitioners.**



Adopting a critical stance towards policy change

- In HK, teachers still express their deep concerns about the support, in terms of resources and information that they need in conducting TAS (Yip & Cheung, 2005)
- **Diversity of responses** amongst HK teachers in coping with the TAS requirements imposed on them (Yung, 2006)





Ivor :
**We have to follow
the TAS regulations
closely.**

I have to be very careful not to exceed the line

We have to **follow the TAS regulations closely**... The TAS requirements occupy a very very important position in my lesson planning process . If I do something wrong, the TAS coordinator will report to HKEA... I have to be cautious about this ... I have to be **very careful not to 'exceed the line'**.



A policeman feared to be scolded by his superior

*I **fear** that the exam board would say that my marking is too lenient. I'd rather deduct marks from my students without any special reason ... I have to keep their marks low. **I had to be very picky and fault finding** with students. Otherwise they might get a very high mark, so high that the exam board would not believe in it. **I had to behave like a policeman who had to grasp every chance to give out the assigned quota of illegal parking tickets in order not to be scolded by the superior ... It is really unfair to them [the students].***



Trying to protect myself

*I **worry** a lot about how much I should discuss their experimental proposals with them [the students]. If I tell them too much, I may be violating the TAS regulations. So, the best thing is that I tell them nothing, I am sort of trying to **protect myself** as far as possible. I just don't care whether students understand or not.*

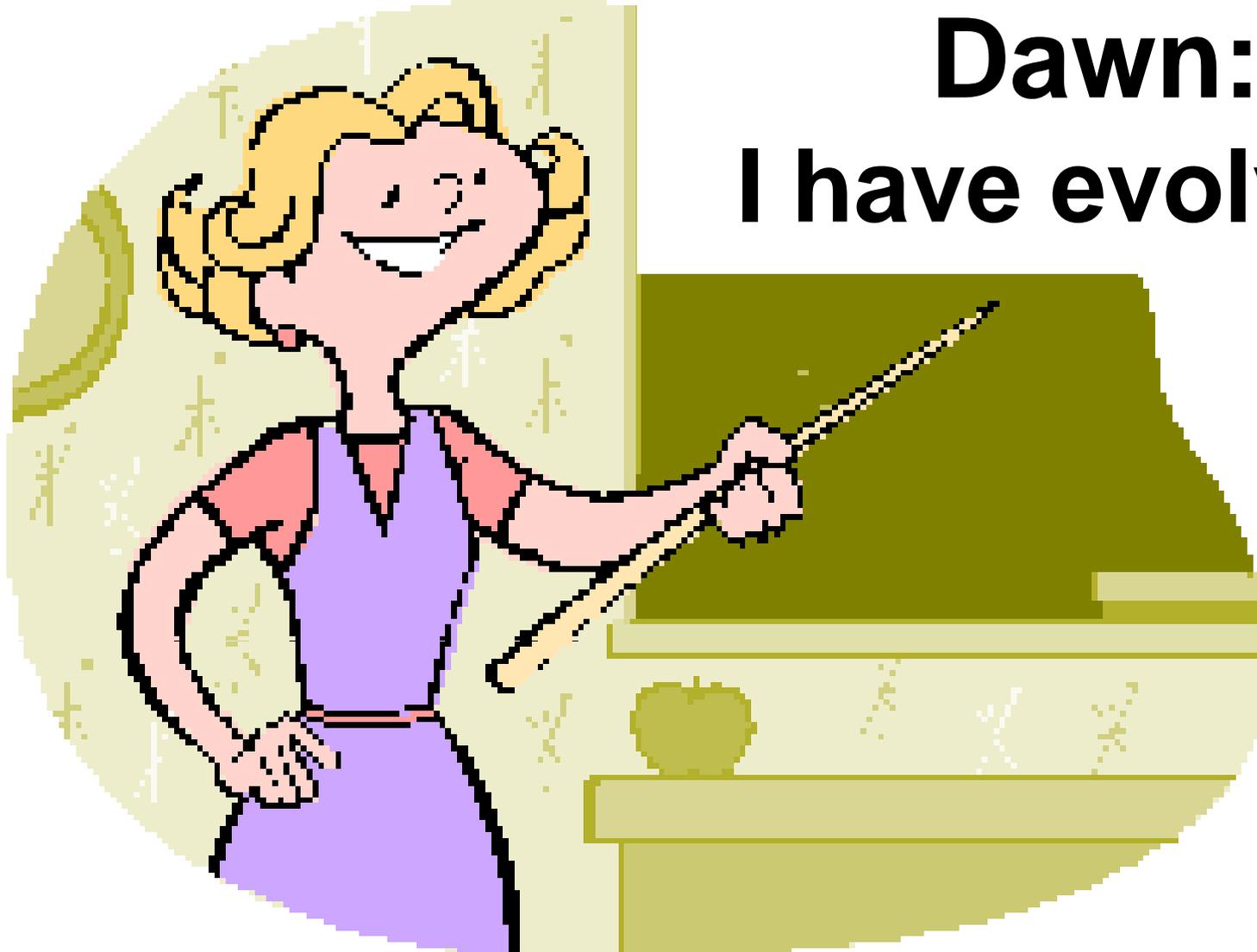


Teacher professionalism is severely compromised

- Ivor perceived the introduction of TAS as imposing severe constraints upon his professional autonomy to such an extent that he would rather “protect himself” than look after students’ learning
- Apparently, teacher professionalism is severely compromised as Ivor struggled to make sense of his **changing roles as both an assessor and a teacher**



**Dawn:
I have evolved.**



I don't want those terrible things to happen again

- *I don't want those terrible things in the first year of the TAS to happen again. At that time, I was not familiar with the scheme. Students and I were **putting pressure on each other. They were neurotic and so was I.** That is not a good way to learn... I don't want to use marks to threaten them ... I think it is **something to do with your attitude. Whether you really want to help the students ...***



If I don't do this, how are students going to learn?

- *If I don't do this, how are they going to learn? You know. I can deduct marks from them depending on the amount of help offered... In the past, I emphasized asking all students to follow a standard method so that I could grade them more easily using a common checklist. Now, I allow them to work with their own methods. Gradually, I have come to realize that there are bound to be variations in their methods. It's okay as long as I can make adjustments in assessing it. There can be different kinds of possible adjustment there.*



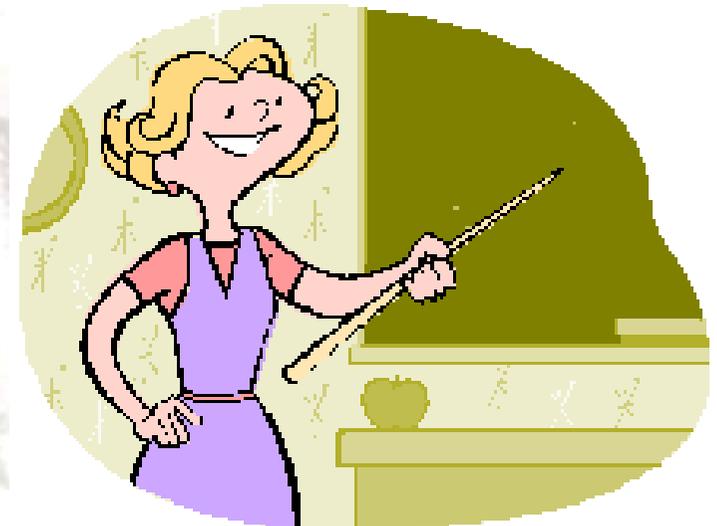
I have evolved ... I don't feel so constrained now ...

- In the past, *I felt very much constrained* by the TAS. Now, I feel that I am set free again. This is an evolution really. *I have evolved...* In the first year of the TAS, ... I thought that it was something like an examination. *I adopted a very strict attitude on every single item.* ... I had to work very carefully *because this is an examination.* In those days, most teachers had a very bad feeling towards TAS. *I am much more liberated now...* I don't feel so constrained now...



Conversations with like-minded people

- provided opportunities for Dawn
 - to find out what practising the reform ideas may involve
 - to gain the insights of others on the practical problems of putting the reform ideas into actual practice



Adopting a critical stance to policy change

- Dawn's case
 - lends support to the important role played by smaller collegial groupings in teachers' CPD and their enactment of the assessment reform
 - suggests that teachers are able to exercise control of their own teaching by adopting a critical stance to policy change
 - points to the need for greater teacher support and more professional development in this respect than is currently available.



Adopting a critical stance to policy change

- If teachers, like Ivor, are to regain their professional confidence and play a significant role in curriculum reform, they need to ...
 - engage with changes
 - rather than be taken over by them
 - understand the origins & nature of the changes, and their own responses to them



Adopting a critical stance to policy change

- Skilled and confident teachers need time and space
 - to reflect, and
 - to question values
- Short courses are unlikely to stimulate the quality of thinking and reflection which are seen as necessary conditions for change and development.



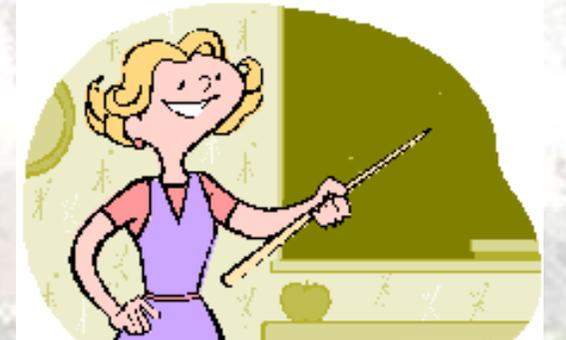
Implication on teacher professional development

- Singapore example:
 - teachers work together, discuss, clarify and refine their practices as they make decisions about what to teach and assess
- Hong Kong examples:
 - some teachers take a critical stance toward the new policy and learn from their own experiences in order to build their confidence



Implication on teacher professional development

- Some teachers seems to focus more on the technicalities of complying with the requirements imposed on them
- Others have their professional consciousness of what they think are best for their students provoked so that their practices are transformed



An amalgamated approach for teacher professional development

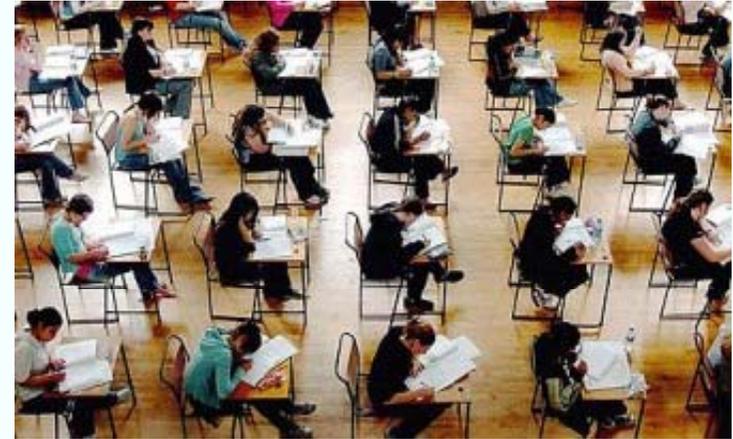
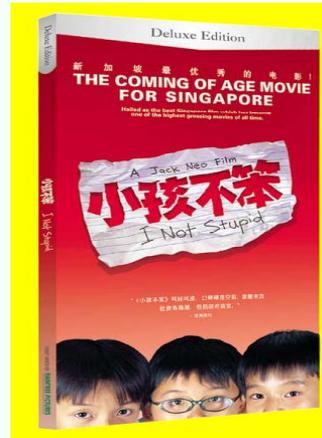
- Teachers who are inexperienced in the inquiry approach
 - require help similar to teachers received in the Singapore case
 - a necessary but insufficient condition
- All teachers, regardless of their experience,
 - need to be provided with opportunities to reflect on their own practices in relation to the demands imposed on them by the policy change
 - to be aware of the professional consciousness behind their actions



This is not an easy task

- Teachers' belief systems form deep layers of "calcified experience".
- Changes rarely take place without destabilizing this deeper level of calcified experience (Sanger, 1990).
- Challenges posed to teachers must be vigorous and explicit if change is to occur.
- It could be an awakening into consciousness where the familiar daily routines of professional practice suddenly become discordant symbols of conflicts
- What is it that enables such insight or sudden awakening to occur?

What counts in SBA?



- Fairness counts

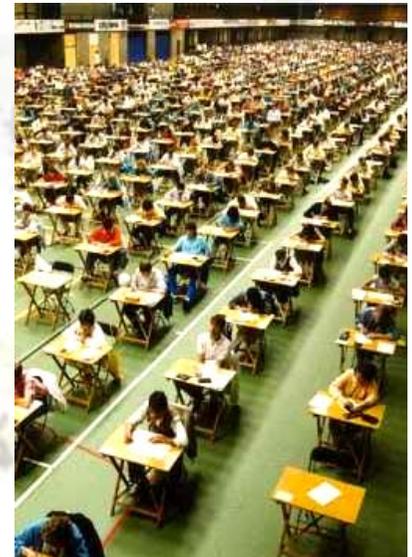
- Yet, what constitutes fairness?

– depends on teachers' understanding of the rationale underpinning the assessment reform, and their personal philosophy of what education is about



What counts in SBA?

- Teacher professionalism counts
 - teachers need to take a critical stance to policy change if their teaching are to be transformed
- Major investment of professional development in this area is vital
- Otherwise, this would be grossly unfair to both the teachers and students!





Source: Hisashi Otsuji

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Thank you



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