

'Holistic Assessment' in Singapore Primary Schools:

Snapshots of Singapore Primary School Teachers' Conceptions and Practices of Classroom Assessment

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Assessment Policy, Formative Assessment, Teacher's Thinking

Following a review of primary education in 2009, the Singapore government accepted a key recommendation by the Primary Education Review Committee to de-emphasise testing and examination at the lower primary levels. Instead, 'holistic assessment' practices that support teaching and learning will be progressively introduced in all lower primary school classrooms from 2010. This paper presents the preliminary findings of two pilot studies on the enactment of a 'holistic assessment' policy at its initial implementation stage in 2010. The various conceptions of 'holistic assessment' and implementation of new assessment practices that support teaching and learning, as well as its possible tension with past conceptions and practices of assessment will be discussed.

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1. Introduction

Countries such as Finland, Korea and Singapore's consistently 'top of the class' results in international comparative measures of educational achievement¹ (PIRLS, 2006; TIMMS, 2007) have been widely reported (McKinsey, 2007; World Economic Forum, 2009). The policy question to consider then for these countries is the implications of these results, and more specifically, what kind of educational changes may be relevant without compromising the high standards that have been maintained so far. This paper presents the preliminary findings of two pilot studies on the introduction of a new 'holistic assessment' policy to be progressively implemented in all Singapore primary schools from 2010. This new policy is a significant milestone in an examination-oriented Singapore education landscape (Cheng, 1996; Tan, 1998; Tan, 2006), and arguably, an attempt to bring about graduated changes in education assessment culture within the Singapore schools context in the coming years.

1.1. Definition of 'Holistic Assessment'

The Singapore Primary Education Review and Implementation (PERI) Committee recognised that the use of examinations and tests in Singapore classrooms have provided an important "assessment framework to ensure the acquisition of strong foundational knowledge" (PERI, 2009, p. 1). However the committee is also cognizant that in the next lap of the evolution of the Singapore education system, schools will need to shift the focus of assessment away from the predominantly summative use of tests and examinations particularly in the lower primary level², as a preoccupation with examination success can hinder the overall development of the child.

In response to the Committee's report, the Ministry of Education has accepted its recommendations, and identified two key processes to guide primary school teachers in their implementation of 'holistic assessment':

1. Using multiple modes of assessment (instead of just pen-and-paper testing) to consider the overall achievements of the child;
2. Finding a 'right' balance between summative and formative assessment practices in class.

Teachers are encouraged to explore alternative modes of assessment from pen-and-paper tests, as appropriate for their subject(s). In addition, clarifying of teaching goals, using appropriate questioning techniques and the provision of feedback are some of the assessment-teaching strategies that would be advocated in the classrooms.

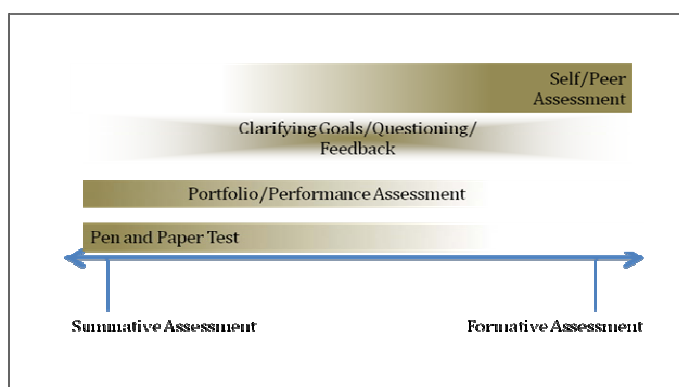


Figure 1: Balancing the Use of Summative and Formative Assessment in the Classroom

¹ Singapore participates in international studies such as Trends in Mathematics and Science Study (TIMSS), Progress in International Reading Literacy Study (PIRLS) and more recently, Programme for International Student Assessment (PISA).

² The review committee also proposed that Primary School Leaving Examination (PSLE), a key stage examination at the end of six years of primary education for streaming and placement purposes to the secondary level, should be retained.

Figure 1 illustrates the Ministry of Education (MOE, 2009), Singapore's interpretation of how teachers can attempt to 're-balance' the assessment practices in the classroom by selecting practices that will serve the purpose of supporting pupils' learning, rather than just for the reporting of grade and performance.

1.2 Rationale and Aim of Pilot Studies

Research findings on changing teachers' practices have highlighted the centrality of teachers' understanding and their thinking on the particular educational innovations in consideration (Brown & McIntyre, 1993; Clark & Peterson, 1986; Fullan & Ballew, 2001; Hargreaves, 2007). Their research indicate that educational innovations that are policy-driven are ultimately futile if it does not accord agency for teachers to integrate and personalise them in such a way that will empower them to make professional judgements and decisions within a complex classroom context. Therefore, teachers may consider innovation proposals irrelevant or impractical if they are unrelated to past classroom routines, are in conflict with the existing school culture or their own professional beliefs (Brown & McIntyre, 1993; Carlgren & Lindblad, 1991). A critical issue of research on policy-led educational innovation is thus the need to consider teachers' conceptions, and how this may influence their perceptions of the relevance and/or challenges of a particular educational innovation to be implemented in the classrooms.

From the literature review, it appears that the support and understanding of new assessment practices by teachers is uneven, due to the lack of a well-defined set of assessment artefacts or practices that are readily transferrable across classroom, school and country contexts (Bennett, 2010; Maxwell, 2004). For instance, despite the ideological commitment of many teachers to implement formative assessment strategies, they have found the adoption of such practices to be problematic (Carless, 2005; James et al., 2006; Dixon & Haigh, 2009). The context and the arising tensions in the classrooms and schools within which teachers operate seem to be the major problem (Brown, 2004; Harris & Brown, 2010). An investigation into teachers' conceptions and practices of assessment can reveal how a new policy on assessment may influence their conceptions and practices of assessment in the classroom. The main aim of the two pilot projects³ is to inquire on Singapore teachers' past and current conceptions of assessment. The following questions were explored:

- (1) What are Singapore teachers' conceptions and assessment practices in the classrooms prior to the introduction of 'holistic assessment'?
- (2) How is 'holistic assessment' being interpreted by the teachers currently, and what are their concerns for its implementation in their classrooms?

This research assumes that any evidence on the implementation of 'holistic assessment' must be examined as reflecting teachers' conceptions, and based on their own interpretations of what constitutes 'holistic assessment'. Part of the documentation and analysis in later studies may include an evaluation of whether 'holistic assessment' is implemented as intended, which is difficult to accomplish if we do not know how different groups of teachers have thought of, and decided about 'holistic assessment' to be implemented in the first place.

2. Methodology

In considering teachers' conceptions and practices, their experience of assessment is central to the research agenda: how do teachers conceptualise the meaning of assessment, and how does this conceptualisation determine their current and future assessment practices in the classroom? As teachers' conceptions are often a dynamic result of continuous, meaningful interaction between themselves and their classrooms/schools, an interpretive-phenomenographic research methodology is adopted. Phenomenographic researchers posit that people can hold multiple and, at times, contradictory conceptions within their frames of reference. These diverse conceptions are aggregated to form an "outcome space representing the variations of conceptions

³ The two pilot studies are conducted independently by the two authors as part of their MPhil course in University of Cambridge and Institute of Education. The duration of the planning, data collection and analysis took place over a period of around nine months.

present” (Harris, 2010, p. 134). The two pilot studies share similar research and theoretical perspectives but differ in the research design. The first study examines the conceptions and practices of assessment of 30 teachers who are Head of Departments (HODs) in their respective primary school; the second study is situated within a non-prototype neighbourhood primary school⁴ and examines the views of four HODs and two teachers on formative assessment. For triangulation purpose, information was also sought from two ministry officers and two university lecturers teaching assessment.

2.1 Methods

The central method was the semi-structured interview. All the interviewees received the interview schedules with questions ahead of time. The interviews focused primarily on respondents’ understanding of assessment, their interpretations of ‘holistic assessment’ and formative assessment, and how they carried out formative assessment in their classroom. After the recorded interviews had been transcribed and coded via the software NVivo8, a synthesis of codes was generated in which all relevant data per respondent/groups of respondents were examined. We subsequently compared the differences and similarities of the codings, and generated the inter-reliability checks of our independent coding of samples of the interview transcripts from each of our studies. The Cohen’s Kappa rating (*K*) ranged from 0.62-0.67 currently which suggested a moderate to substantial strength of agreement. While the rating may be sufficiently large for an exploratory study, we were more interested in locating the sources of congruency and discrepancy, and the insights that could be gleaned from discussing about them.

3. Findings

This pilot study found different categories of description through clustering of codes, representing teacher’s conceptions and practices of assessment before the introduction of the ‘holistic assessment’ policy. This section of the paper presents the aggregation of responses from various groups of teachers.

3.1 Conceptions of Assessment

The majority of respondents refer to assessment as the pen-and-paper Semestral Assessment (SA) which occurs twice at the end of each semester⁵ and Continual Assessment (CA) which occurs once or more times in each semester. These are the formal school-based standardised tests/examinations that are administered to all the pupils within each level for the purpose of reporting the grade for each subject. SA constitutes the majority of the percentage in weighting and the overall grade (through different weighting of SA and CA marks) is used for reporting to various authorities and parents. The results of the tests and examinations are also important indicators for early detection of pupils requiring remediation, evidence of improvement in teaching and learning (for both teachers and students), and the promotion of a pupil to the next academic level.

A critical assessment event for the primary school pupils and teachers is the Primary School Leaving Examination (PSLE) at the end of six years of primary schooling. The pupils’ results would determine the type of courses and secondary schools that they are eligible to be posted to. While the teachers agreed that assessment could serve both formative and summative purposes, it is the latter which teachers are more focused on:

⁴ Following PERI, the Assessment Planning and Prototyping Team (APPT) was set up by Ministry of Education to work closely with eight schools to develop expertise amongst teachers in introducing innovative teaching and assessment methods in the classrooms. A prototyping approach was adopted to develop and understand exemplary assessment practices, with the goal of eventually sharing good practices with teachers across all primary schools. A neighbourhood primary school is a typical government primary school in Singapore with average/slightly below-average PSLE results.

⁵ Singapore primary schools operate on two 20 weeks-long semester in a year.

The summative one. I don't think at all they even draw the difference between formative and summative. Their idea of assessment would be very summative and preparing them [pupils] very strictly, for the PSLE (Teacher/Candy⁶).

I think in our system we're looking at the summative [first] and then from there we're actually moving backwards to see how we can use the formative to help the summative (Teacher/Ben).

While the various teachers indicated they had some knowledge of formative assessment, their current conception suggested that they may have erroneously associated formative assessment with any alternative form of assessment to pen-and-paper tests and examinations that can contribute to an overall grading. The dominant conception of assessment seems to be one that is very much focused on the close tracking of pupils' performances through test or examination events, which takes priority even in attempting to introduce formative and alternative assessments. Consequently, various misconceptions of what constitutes formative assessment practices could abound in teachers' use of feedback, the use of rich questioning and the sharing of the success criteria with the pupils.

3.2 Conceptions of 'Holistic Assessment'

All of the respondents were aware of the Ministry's call to de-emphasise the use of pen-and-paper summative assessment in the lower primary levels (grades one and two). There were however different responses on how the de-emphasis can take place and why it should be so. The pilot studies found two categories of descriptions for the conceptions of 'holistic assessment'. The categories were 'Balance-Holonomy' and 'Test- Learn'.

3.2.1 Balance - Holonomy

All the respondents expressing a 'balance' conception of 'holistic assessment' interpreted the de-emphasis directive of SAs as the total or partial removal of the formal pen-and-paper tests from the assessment regime. Instead, informal topical tests should now take the place of SA, and this could take place freely across the year. A major decision on 'holistic assessment' would thus involve deciding on the proportion of informal topical tests and daily work that could be counted alongside the existing formalised pen-and-paper CA tests as assessment products. The following teacher's question on 'holistic assessment' demonstrates the critical balancing act involved in making sense of percentage of 'old' and 'new' modes of assessment:

Ok so I understand that we need to de-emphasise SA... I do not know whether you consider this holistic assessment... at the end of the year the grading will be like: 50-30-20... 50 goes to practical test, 20 goes to theory test and 30 for classroom observation of pupils' responses in class (Teacher/Gwee Hua)?

At the same time, the introduction of the informal tests should avail the teachers to make use of formative assessment practices that would not be readily considered in the older regime of assessment framework. A teacher shared her department's interpretation of holistic assessment:

We have removed SA1 and SA2 and introduced practical test because before that all the four assessment are written papers... we see the trend in using different kinds of informal or practical test to complement the written papers... so we started with P1 and 2 with some manipulative kind of test... then this year we also try to combine the practical test with formative assessment and the teacher is required to complete a feedback form. Every three or four weeks there will be these practical tests (Teacher/ Fatima).

Other respondents did not believe that 'holistic assessment' should be about introducing any particular new

⁶ Pseudonyms are used to protect the identity of the participants interviewed in the pilot studies.

type of assessment but rather to consider the relationship of teaching and assessment, and how different assessment practices relate to one another. A ministry officer cautioned that:

While the term ‘holistic assessment’ seems to be all-encompassing, I wonder at the usefulness and translationability [...] Many schools are jumping onboard alternative modes of assessment. The emphasis seemed to be placed on the modes of assessment rather than how the data from assessment is used to improve learning... I think that's a blind spot for the schools now, but you and I know that new assessment practice alone is not going to effect improvement in teaching and learning [...] (MOE officer/Beng Yong).

We refer to this conception of ‘holistic assessment’ as being holonomous from the term holonomy, a term first coined by Physicist Arthur Koestler, and adapted by Costa and Garmston (2001), when they referred to holonomy as the study of the relationship between wholes and parts in different fields of study. A ‘holonomous’ conception of assessment does not focus on the pursuit of different modes or practices of assessment, but rather how each one of them could be designed and implemented in such a way that could accomplish a variety of purposes. Unlike the ‘balance’ conception of ‘holistic assessment’, the ‘holonomous’ conception proposes that any mode or practice of assessment (including pen-and-paper tests/examinations) can be potentially useful to measure/support students’ learning if they are designed or executed well. Respondents who advocate this conception said that teachers should be able to make judicious use of any assessment activity or strategy to evaluate, support and enhance pupil’s learning.

3.2.2 Test - Learn

In this category the respondents talked about how the term ‘holistic assessment’ must take reference from the alignment of the curriculum with assessment. For instance, several respondents suggested that ‘holistic assessment’ would require them to know the ‘right’ tests for their respective subjects. We consider this a ‘test-dominant’ conception. With the call to de-emphasise pen-and-paper testing, teachers need to identify and try out new modes of assessment:

How do we know what kind of assessments are the best for our subject? We could find out from literature or from what other schools are doing. But we want to come up with something that is relevant for us ... I suppose it cannot be done only with the lower primary pupils... it has to be consistent across the years (Teacher/ Nitila).

It is important for the teachers to find the ‘right’ assessment(s) as it is important that the pupils’ achievements are reflected correctly through proper standardisation process, and that what is tested through these alternative assessments are similar to what will eventually be tested in the PSLE:

My fear is always short-changing the pupils. I mean it’s good to try new assessment methods and review it each time. But it has to be aligned to what the pupils are finally tested in PSLE, so if we picked the wrong choice, and already used it for one entire cohort then... and then their PSLE results suffer (Teacher/Siew Hwa).

Other respondents opined that the new assessment policy would give them the opportunity to examine the teaching and learning of the different subjects, and its implications for assessment. ‘Holistic assessment’ to them has to take reference from the content of the individual subject and its authenticity to the world that the pupils reside in today. They suggested that teachers need to appreciate the ‘holistic-ness’ of the teaching and learning of the subject before making a decision on what would be the most appropriate set of assessment practices that could be used:

Holistic assessment...in English need to understand what holistic means for language competency. I look at ... let’s say again speaking. What does it mean to be able to speak holistically? It’s not just about training them for oral communication like currently the assessment for English is your ability read aloud a passage. But yet we know in speaking competency there’s a whole lot more to that ... I

think while the current assessment does try to capture some of these skills, I think a holistic one could be something more general and encapsulate everything (Teacher/Chitra).

Respondents who subscribe to this 'learn-dominant' conception of holistic assessment do not seem to be deterred by the requirements of high-stakes summative tests. Rather, they perceive no conflict between the 'holistic' set of knowledge and skills (that can only be assessed through a combination of modes of assessment) and the more narrow set of skills and knowledge to be tested in standardised summative tests.

3.3 Concerns

The differences in conceptions of 'holistic assessment' are not surprising since the Singapore primary school teachers are in the midst of an important shift in thinking about the different purposes and practices of assessment. The interviews have revealed that Singapore primary school teachers are concerned about the more expansive notion of assessment beyond that of just testing and examining. Based on the responses thus far, it will seem that 'holistic assessment' is much more than balancing the proportion of summative and formative practices as proposed by Ministry of Education (Figure 1). Rather, it has potentially several possible interpretations depending on how teachers mediate and address various conceptions and concerns. Some of the specific concerns raised include:

1. Usefulness and feasibility of specific practice(s) of 'holistic assessment' (e.g. abrupt removal of pen-and-paper tests/examinations in the lower primary levels, workload of teachers, dominant 'testing culture' in upper primary levels)
2. Teachers' understanding and application of new assessment knowledge (e.g. formative assessment, alternative assessment)
3. Appraisal of teachers' performances based on qualitative rather than quantitative indicators of students' achievements
4. Support from school leaders and parents.

The relationship between the conceptions and concerns are complex as each of them may interact with one another, depending on how an individual teacher intends to resolve the tension between each one of them (McMillan, 2003; Harris & Brown, 2010). External pressures such as a dominant examination culture (PSLE) may compel teachers to use practices that are inconsistent with their beliefs and knowledge of assessment. On the other hand, we can be optimistic that the openness and somewhat messiness of the conceptual meaning of this new term 'holistic assessment' provides opportunity for Singapore teachers to deliberate and have a deepened understanding of what, how and why we assess in our classrooms today:

If it's just about rolling out initiatives, it's not going to take off very well because it is very top down and that definition by HQ may not be your definition. You could be guided by certain philosophy and certain guidelines, but ultimately, as a teacher, you see what works for you. So there must be more space given to teachers where they could have some parts of it where they define for themselves. What is holistic assessment? [...] But until we allow teachers to talk and really, really engage themselves, we can't have that open mind, open heart (Teacher/Chew Beng).

4. Limitations and Implications

The short duration of the pilot studies inevitably limits the diversity of conceptions and concerns that may exist currently amongst Singapore primary teachers. The conceptions and concerns may also change as teachers from the eight prototype primary schools who have been trialling various 'holistic assessment' strategies are due to present their findings to all schools in July 2010. Therefore the findings so far are at best, a preliminary aggregation of conceptions and perceived practices for understanding where the Singapore teachers are in their interpretation of 'holistic assessment'. In addition, this current qualitative inquiry does

not attempt to explain the causes of conceptions or categorise individual respondents into particular conception groups or quantify the number adopting a particular way of thinking. The key aim is mainly descriptive for revealing the range of variation within the sample and identifying plausible relationships between these categories. A wider range of use of research methods (e.g. mixed methods) will need to be employed for a more in-depth study on the causes and variety of conceptions and practices, the relationships between different clusters of teachers' conceptions and practices, and the teachers' actual decision-making processes and implementation of 'holistic assessment' practices in their classrooms.

The term 'holistic assessment' is new and still conceptually unclear. This is not to question the potential usefulness of the 'holistic assessment' policy but rather to raise a need to understand its conceptions and practices in a specific context in which a focus on high-stakes summative assessment has been very dominant for an extended period of time. Ultimately, the understanding and practices of 'holistic assessment' must take reference from the dynamics of the context of the Singapore classrooms and schools that teachers are working in. Wiliam (2010) points out that governments all over the world are on a quest for 'what works' in education (p. 15). However, he asserts that in education, 'what works' is not a particularly useful question to ask because almost everything works somewhere, and nothing works everywhere. An important question as suggested by Fink and Stoll (1998) is 'under what conditions does a particular initiative work?' Fink and Stoll (1998) further cautions that what works in one context may lack relevance for another. We will conclude tentatively that based on the verbal snapshots from these two pilot studies, the relevance of this 'holistic assessment' policy has to be better understood through uncovering and reconciling competing imperatives of assessment in the Singapore primary classrooms. We propose that a flexible and inclusive approach to help Singapore teachers understand and make use of the essence of formative assessment within their classroom (Carless, in-print) may go a long way in clarifying and realising the intent of the 'holistic assessment' policy.

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