

**ASSESSMENT FOR PRODUCTIVE LEARNING: FORMS OF ASSESSMENT AND  
THEIR POTENTIAL FOR ENHANCING LEARNING<sup>1</sup>**

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## **Introduction**

The Organization for Economic Cooperation and Development (OECD) recently lent its support to formative assessment as a powerful learning tool:

Teachers using formative assessment approaches guide students toward development of their own learning to learn skills that are increasingly necessary as knowledge is quickly outdated in the information society (OECD, 2005, p.22)

Its rationale for doing so is not hard to discern. OECD is not an education agency, so it is not the educational aspects of formative assessment that it has found appealing. Rather, as an economic agency, it understands perhaps better than most, the centrality of learning to economic growth and development in its member countries. From a purely economic point of view, formative assessment can be linked to such popular constructs as “the knowledge society” and “life long learning” since it appears to promise learning gains not just for some students but for all (Black & Wiliam, 1998).

The OECD’s policy support for formative assessment is by no means an isolated action. An examination of current reform agendas internationally also finds considerable support for formative assessment (Curriculum Development Council, 2001; Learning and Teaching Scotland, 2006; Scottish Executive, 2003; Educational Institute of Scotland, 2002; New Zealand Education Gazette, 2002; Saskatchewan Learning, 1993; Department of Education and the Arts, 2005). In supporting formative assessment, a great deal of reliance has been placed on Black and Wiliam’s (1998) now classic study that extolled the virtues of formative assessment as a tool to enhance learning. Yet that review was not without its critics (Biggs, 1998) and subsequent work in the field (Taras, 2005; Harlen, 2005). has questioned what has come to be seen by some as an arbitrary distinction between ‘formative’ and ‘summative assessment’ Given the emerging academic ambivalence related to the differentiation of assessment, the support for formative assessment at the policy level needs to be questioned. This is not necessarily to question the value of formative assessment. Rather, the purpose is to explore the implications of valorizing formative assessment over other forms of assessment, especially since formative assessment does not exist in isolation. As Biggs (1998) has pointed out, for example, summative assessment also influences student learning, and sometimes in negative ways. An

exclusive focus on formative assessment, therefore, may well leave summative assessment practices unquestioned and, as Stiggins (2002, p.761) has pointed out, the result for some students may cause them to “give up in hopelessness”.

The purposes of this paper, therefore, are to:

- Review the concept of formative assessment and its development over time;
- Review summative assessment in relation to formative assessment and assess the implications for student learning;
- Outline the features of a more inclusive model of assessment that can utilize different forms of assessment to optimize student learning.

### **Current policy support for formative assessment**

In seeking to understand better the widespread policy support for formative assessment it is important to try and understand the development of the concept in historical terms and the different ways in which it has been adopted and adapted in different contexts. It is not often that a ‘think tank’ devoted to economic policy issues such as the OECD, expresses support for what seems to be a micro educational process such as formative assessment. It is important to understand, therefore, how this support evolved.

One reason for this focus on the historical development of formative assessment and its derivatives is “because many teachers and researchers seem to have misunderstood the term” (Black et al., 2003a, p.2). Taras (2005, p.466) has linked Scriven’s (1967) use of “formative evaluation” to “formative assessment” immediately raising questions about the terminology of “evaluation” and “assessment”. Yet for simplicity’s sake, as well as the sake of her argument about the value of formative interventions, Taras seemed content to blur the distinction between the two constructs. Roos and Hamilton (2005) also attributed the distinction between “summative” and “formative” to Scriven. They highlighted the distinction as a conceptual one in the sense that Scriven’s argument was focused on different functions for curriculum evaluation rather than the assessment of student learning. What is more they refer to a

debate between Lee J Cronbach and Scriven on the topic, with Cronbach rather than Scriven being the champion of formative over summative practices when it came to curriculum evaluation. The important point to note from all this is the conceptual distinction between “formative” and “summative”. Initially the argument was that formative evaluation could improve curriculum products before they were made widely available. It is this idea that has subsequently been applied to student learning: assessment at stages other than the end of the learning cycle can help to improve learning.

Taras (2005, p.470) suggests that “Scriven (did) not formalize or develop the idea” and this was left to Sadler (1989). His key contribution, drawing on Ramaprasad (1983), was to highlight the key role of feedback. Conceptually, this was a great step forward and it has remained one of the key characteristics of formative assessment and its derivatives. Black et al., for example, put feedback at the heart of formative assessment:

*Assessment for learning* is any assessment for which the first priority in its design and practice is to serve the purpose of promoting pupils’ learning. It thus differs from assessment designed primarily to serve the purposes of accountability, or of ranking, or of certifying competence.

An assessment activity can help learning if it provides information to be used as feedback, by teachers, and by their pupils in assessing themselves and each other, to modify the teaching and learning activities in which they are engaged. Such assessment becomes ‘formative assessment’ when the evidence is actually used to adapt the teaching work to meet learning needs (Black et al., 2003b, pp.2-3) (my italics)

It is of some interest to note here the term “assessment for learning” used synonymously with “formative assessment”. The terms are not always used synonymously different writers use them in different ways (Stiggins, 2002, p.761; Taras, 2005, p.476; Roos & Hamilton, 2005, p.18). The term seems to have been popularised by the Assessment Reform Group (ARG) in the UK in a follow up to Black and Wiliam (1998) when they called for “a clear distinction (to) be made between *assessment of learning* for the purposes of grading and reporting, which has its own well-established procedures, and *assessment for learning* which calls for different priorities, new procedures and a new commitment” (Assessment Reform

Group, 1999, p.2). The ARG itself distinguished between “formative assessment” and “assessment for learning”:

The term ‘formative’ itself is open to a variety of interpretations and often means no more than that assessment is carried out frequently and is planned at the same time as teaching. Such assessment does not necessarily have all the characteristics just identified as helping learning. It may be formative in helping the teacher to identify areas where more explanation or practice is needed. But for the pupils, the marks or remarks on their work may tell them about their success or failure but not about how to make progress towards further learning (Assessment Reform Group, 1999, p.7)

The characteristics of assessment that meet the criteria for being considered “assessment for learning” as distinct from merely “formative” were identified as:

- it is embedded in a view of teaching and learning of which it is essential part;
- it involves sharing learning goals with pupils;
- it aims to help pupils to know and to recognise the standards they are aiming for;
- it involves pupils in self-assessment;
- it provides feedback which leads to pupils recognising their next steps and how to take them;
- it is underpinned by confidence that every student can improve;
- it involves both teacher and pupils reviewing and reflecting on assessment data. (Assessment Reform Group, 1999, p.7)

These criteria expanded considerably, the Scriven and Sadler notions of formative evaluation/assessment. Taras(2005, p.471) has pointed out that Sadler’s view, similar to that of Scriven’s, was more focused on the assessment of product (performances, pieces of work (Sadler, 1989, p.120)). More recent work on formative assessment, however, has been concerned with pedagogical and classroom contexts (Torrance & Pryor, 2001; Black et al., 2003a, 2003b) and these contexts were also the main concern of Black and Wiliam (1998). The product-process distinction is important in as much as it requires different skills of teachers, but the underlying principles for both process and product formative assessment can be considered the same. Constructive feedback remains the central feature of both kinds of formative assessment as does the potential for such feedback to enhance learning. These principles have been elaborated in the development of the concept of “assessment for learning” so that formative assessment is not just a simple technical process but rather a complex educational and indeed social process that, when properly used, can

help students improve their learning. It is this potential that has brought formative assessment to the attention of policy makers and at the same time has led to considerable research and development efforts to enhance teacher capacity to use formative assessment as a means to improve student learning in their classrooms (Torrance & Pryor, 2001; Pryor & Crossouard, 2005). Yet the importance of the concept of “assessment for learning” goes beyond elaborating what is meant by formative assessment, and this issue will be addressed in the following section.

### **Summative assessment in relation to formative assessment and the implications for student learning.**

As the literature on elaborated forms of formative assessment (i.e. “assessment for learning”) emerged, there seems to have been a tendency to neglect summative assessment, or at least to regard it as something quite distinct. At a recent international conference on formative assessment, Professor David Hopkins, the UK Minister’s Chief Advisor on School Standards, was asked whether there was “over testing” in the UK. He declared that “there is a moral purpose behind testing children and helping them to fulfil their potential,” ... We want to raise the proportion of children reaching level 4 at KS2 and this is where formative assessment will play an important part” (Budge, 2005). For Hopkins, testing is one thing and formative assessment is another. At the same conference, Spencer (2005) seemed to highlight what is a traditional distinction between different forms of assessment: “Assessment of learning: Gathering and interpreting the evidence”; “Assessment for learning: Supporting classroom teaching and learning”; “Assessment as learning: Learning how to learn”. This tendency to isolate different forms of assessment is problematic. Biggs (1998) expressed this most clearly in his review of Black and Wiliam (1998):

My main substantive problem is with the decision to exclude SA<sup>2</sup> from a review of the effects of assessment on classroom learning... These effects, referred to as ‘backwash’ by Biggs (1996), are usually seen as entirely negative, and interestingly, as stronger than the positive effects of FA (‘feedback’). This suggests clearly that significant gains are to be found as

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<sup>2</sup> The abbreviation SA is routinely used in the literature for ‘summative assessment’ and FA is used for ‘formative assessment’. They have only been used in this paper where they are embedded in quotations.

much in mitigating or reversing backwash as by enhancing feedback (Biggs, 1998)

Taras (2005, p.475) also pointed out that in the work of Sadler (1989), Black and Wiliam (1998) and Torrance and Pryor (2001), there is a reluctance to consider issues associated with summative assessment, except in the sense of promoting and supporting formative over summative assessment as a means of enhancing learning. For Taras (2005, p, 475), “the most detrimental aspect is that FA is seen as a magic formula which is not only separate from SA, but incompatible with it”. Given Biggs’ comments above and Taras’ view about the close relationship between summative and formative assessment, it seems important to develop a better understanding of summative assessment, its relationship to learning and the role it needs to play in order to support assessment for learning.

The general disparagement of summative assessment is perhaps understandable given what Biggs (1998) described as its negative ‘backwash’ effects, just as the search for fairer and more effective forms of assessment is understandable. Yet the problem with focusing on just one form – formative assessment – leaves the other unexamined and thus free to continue to exert its negative effects. A better understanding of summative assessment might enable educators to harness its potential to be not only less negative but also more positive. If some attempt is not made to rehabilitate summative assessment then there is no guarantee that, in Biggs’ (1998) terms, the negative effects of summative assessment will not outweigh the positive effects of formative assessment.

The Assessment Systems for the Future project on summative assessment made some useful distinctions that are a good starting point in starting to reformulate ideas. A distinction was made between internal and external summative assessment. The former involved teachers reporting to students and parents and keeping school records of student achievements and progress. The latter involved external bodies such as examination boards, national and local monitoring of standards and by extension international tests of achievement (Assessment Systems for the Future, 2005, p.3). The concern was mostly with the negative ‘backwash’ of external assessment – the extent to which the form of the test and the purposes for which the results would be used influenced the curriculum, pedagogy and student learning strategies. This issue

will be returned to later in this paper. Another issue that can be addressed more easily is that of teachers and internal summative assessment.

There are many reasons for teachers to engage in internal summative assessment: ensuring that students have understood a construct that is necessary for understanding what is to come next in the curriculum; assessing learning progress at the end of a unit of work, reporting to parents on student progress at the end of a term or school year. Whatever the purposes, there is no reason to prevent these summaries of learning at a point in time from abiding by the principles of formative assessment and assessment for learning. That is, these assessments can be used as feedback to help students move from where they are to where they need to be and they can be designed in ways that reflect the principles of assessment for learning referred to earlier in this paper. Internal summative assessment can serve exactly the same purposes as formative assessment. It is simply mindset, and of course skills, (Stiggins, 2002) that prevent the coalescence of formative and internal summative assessment.

If it can be assumed that internal summative assessment can be transformed to enhance learning, that leaves external summative assessment as the main source of negative 'backwash'. It would be unrealistic to suggest that the 'high stakes' nature of this kind of assessment can be fully ameliorated. When results are used for selection purposes and when places are limited, the resulting competition will ensure that students will want to maximize their performance. The key to this situation is to ensure that the assessment tasks for this purpose are such that they will encourage desirable learning processes on the part of students. Factual, recall type questions that encourage rote learning have no place in external summative assessment. Multiple choice questions that have not been subjected to the most rigorous piloting and statistical analysis have no place in external summative assessment. That is to say, in designing summative assessment, every effort needs to be made to eliminate those types of assessment that encourage negative 'backwash' in the form of surface learning.

A very promising development in the use of summative assessment has been the return of system wide monitoring test results to schools and teachers so that they can use them to improve teaching and follow up with individual students. This happens in



Hong Kong with the Basic Competency Assessment at Primary 3, 6 and eventually Secondary 3. It also happens in other jurisdictions such as New South Wales, Australia. In these cases, the monitoring of performance is not used to rank schools or create league tables but to improve learning. In other words, summative assessments are used for formative purposes. This cannot be done with all forms of summative assessment (e.g. examinations for university entrance) and even where it is policy the perceived 'high stakes' nature of system wide monitoring can lead to negative impacts in schools such as coaching for results (Lee & Yiu, 2006). Nevertheless, where such assessment can contribute to learning, every effort should be made to ensure that they do.

Another approach to improving summative assessment has been suggested by Harlen (2005, p.212). After a systematic review of the literature on the use of teachers' assessments for summative purposes, she concluded that "there are several potential advantages in using teachers' judgments more widely as part of summative assessment for external as well as internal uses". She also identified the possible disadvantages (e.g. lack of reliability and bias of teacher judgments and the constraints of moderation) but was able to demonstrate from research how these problems could be overcome. What is more, there is considerable evidence from Australia (e.g. in Queensland and the Australian Capital Territory where tertiary entrance is determined entirely by school based assessment moderated by a common skills test) that school based assessment for high stakes purposes has worked in practice for over thirty years. To move away from examinations to a greater reliance on school based assessment fuelled by teacher judgments is one further way of ensuring less negative 'backwash' from external summative assessment.

### **Towards a more inclusive model of assessment**

A more inclusive model of assessment needs to have the following characteristics:

1. All assessment needs to be conceptualized as "assessment for learning";
2. Feedback needs to be seen as a key function for all forms of assessment;

3. Teachers need to be seen as playing an important role not only in relation to formative assessment but in all forms of summative assessment as well – both internal and external;
4. Decisions about assessment need to be viewed in a social context since in the end they need to be acceptable to the community.

The continuing bifurcation between formative and summative assessment is no longer useful, despite the fact that such a distinction has resulted in some excellent research and development work on formative assessment. Such work needs to continue, but equally important, research also needs to be constructed on summative, assessment as suggested by Harlen (2005). The view expressed by Roos and Hamilton (2005, p. 18) that “summative assessment/evaluation as a procedure ... is ‘too deeply coded’ to become a valid ‘activating mechanism’ for goal-directed educational activities” needs to be challenged. An important reason for this has been alluded to several times in this paper: the potential negative ‘backwash’ effect of summative assessment has the potential to overcome the positive influences of formative assessment.

Summative assessment plays an important role in the lives of students and in the community. If it can be made more inclusive of the basic principles that are informing formative assessment, there is a possibility that it can exert a positive effect on teaching and learning strategies. It will continue to be different from formative assessment in form and function but if it can be better harmonized with the processes of formative assessment and assessment for learning, there is chance that it can play a useful rather than a destructive role in the lives of young people.

## References

- Assessment Reform Group. (1999). *Assessment for Learning: Beyond the Black Box*. Cambridge: University of Cambridge School of Education. Retrieved on 2 March 2006 from <http://arg.educ.cam.ac.uk/AssessInsides.pdf>
- Assessment Systems for the Future. (2005). *Summative assessment by teachers: evidence from research and its implications for policy and practice*. ASF Working Paper No 2. Retrieved on 9 March 2006 from <http://k1.ioe.ac.uk/tlrp/arg/ASF%20Working%20Paper%202%20Draft%204.pdf>
- Biggs, J. (1996). Assessing learning quality: reconciling institutional, staff, and educational demands. *Assessment and Evaluation in Higher Education*, 2(1), 3-25.
- Biggs, J. (1998). Assessment and classroom learning: A role for formative assessment? *Assessment in Education: Principles, Policy and Practice*, 5(1), 103-110.
- Black, P., Harrison, C., Lee, C., Marshall, B., & Wiliam, D. (2003a). *Formative and summative assessment: Can they serve learning together?* Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, 23 April 2003. Retrieved on 1 March 2006 from <http://www.kcl.ac.uk/education/papers/AERA%20ClassAsst.pdf>
- Black, P., Harrison, C., Lee, C., Marshall, B., & Wiliam, D. (2003b). *The nature and value of formative assessment for learning*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, 23 April 2003. Retrieved on 1 March 2006 from <http://www.kcl.ac.uk/education/papers/AERA%20Pres.pdf>
- Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education*, 5(1), 7-74.
- Budge, D. (2005). *Tasting the assessment soup - The Times Educational Supplement*. Retrieved on 2 March 2006 from [http://www.tes.co.uk/search/story/?story\\_id=2074776](http://www.tes.co.uk/search/story/?story_id=2074776)
- Curriculum Development Council. (2001). *Learning to Learn: The Way Forward in Curriculum Development*. Hong Kong: Hong Kong SAR Government.
- Department of Education and the Arts. (2005). *Smarter Learning: The Curriculum, Assessment and Reporting Framework*. Retrieved on 2 March 2006 from <http://education.qld.gov.au/qcar/pdfs/qcar.pdf>
- Educational Institute of Scotland. (2002). *Assessment 3-14*. Retrieved on 2 March 2006 from <http://www.eis.org.uk/pdf/Assessment3-14.pdf>
- Harlen, W. (2005). Teachers' summative assessment practices and assessment for learning-tensions and synergies. *The Curriculum Journal*, 16(2), 207-223.
- Learning and Teaching Scotland. (2006). *Assessment is for learning programme*. Retrieved on 2 March 2006 from <http://www.ltscotland.org.uk/assess/about/index.asp>
- Lee, H. M. & Yiu, K. H. (2006, March 8). Secondary school spends \$140,000 on training students for assessment (in Chinese). *Ming Pao*, p.A18
- New Zealand Education Gazette. (2002). *Better assessment likely*. Retrieved on 2 March 2006 from [http://www.edgazette.govt.nz/articles.php/show\\_articles.php?id=6155](http://www.edgazette.govt.nz/articles.php/show_articles.php?id=6155)
- OECD. (2005). *Formative Assessment: Improving Learning in Secondary Classrooms*. Paris: OECD.

- Pryor, J., & Crossouard, B. (2005). *A sociocultural theorization of formative assessment*. Paper presented at the Sociocultural Theory in education Research and Practice Conference, University of Manchester, 8-9 September.
- Ramaprasad, A. (1983). On the definition of feedback. *Behavioral Science*, 28,4-13.
- Roos, B., & Hamilton, D. (2005). Formative assessment: a cybernetic viewpoint. *Assessment in Education*, 12(1), 7-20.
- Sadler, D. R. (1989). Formative assessment and the design of instructional systems. *Instructional Science*, 18, 119-144.
- Saskatchewan Learning. (1993). *Learning Assessment Program*. Retrieved on 2 March 2006 from [http://www.sasked.gov.sk.ca/branches/cap\\_building\\_acct/afl/docs/plap/foundation.pdf](http://www.sasked.gov.sk.ca/branches/cap_building_acct/afl/docs/plap/foundation.pdf)
- Scottish Executive. (2003). *Assessment, Testing and Reporting 3-14: Consultation on Partnership Commitments*. Retrieved on 2 March 2006 from <http://www.scotland.gov.uk/consultations/education/atrc-00.asp>
- Scriven, M. (1967). The methodology of evaluation. In R. Tyler, R. Gagne & M. Scriven (Eds.), *Perspectives of Curriculum Evaluation* (pp. 39-83). Chicago: Rand McNally.
- Spencer, E. (2005). *Assessment in Scotland: 'Assessment for Learning'. Formative assessment in a coherent system*. Presentation made at the International Conference, "Improving Learning through Formative Assessment", OECD, Paris. 2-4 February. Retrieved on 5 March 2006 from <http://www.oecd.org/dataoecd/40/54/34488069.ppt#7>
- Stiggins, R. (2002). Assessment crisis: The absence of assessment for learning. *Phi Delta Kappan*, 83(10), 758-765.
- Taras, M. (2005). Assessment- summative and formative-some theoretical reflections. *British Journal of Educational Studies*, 53(4), 466-478.
- Torrance, H., & Pryor, J. (2001). Developing formative assessment in the classroom: Using action research to explore and modify theory. *British Educational Research*, 287(5), 615-631.