

In 2009, I had this article published in a journal in Japan for college and university educators (OnCUE). At that time, I was completing my doctoral research related to classroom-based assessment at a woman's university in Tokyo. [Eddy White, Ph.D., Assessment Coordinator, Center for English as a Second Language, University of Arizona]

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## Feature Article

# Are You Assessment Literate? Some Fundamental Questions Regarding Effective Classroom-based Assessment

Eddy White

*Tokyo Womans' Christian University*

### Abstract

The term *assessment literacy* is not commonly known among educators. This is unfortunate, considering that a teacher's assessment knowledge and competence can be so influential in encouraging or undermining student learning in the classroom. This article serves as a primer to make instructors more aware of what being assessment literate entails, and why this overlooked and undervalued aspect of pedagogical practice and professional development is so important. The article presents, in a Q and A format, four fundamental assessment literacy questions regarding: what assessment literacy is and why it is so important, how assessment in higher education is changing, and what classroom-based assessment ideas are influential and noteworthy. Presenting a range of views and concepts from the assessment literature, this assessment literacy overview aims at consciousness-raising, and draws attention to the harmful effects, for both students and teachers, of assessment *illiteracy*.

アセスメントリテラシーは教育者の間では一般的に知られていない用語である。教師の学生評価方法に対する知識と能力

は教室における生徒の学問習得に多大な影響を持ち、学習を助長も阻害もし得るだけに残念なことである。本稿は、教師にとって評価能力を持つために何が必要であり、この看過され過小評価された教育学的能力の向上が如何に重要であるかについて意識を高めるための入門編である。本論ではQ & A形式にてアセスメントリテラシーについての4つの基本的な問題：アセスメントリテラシーとは何か、なぜそれが重要なのか、高等教育におけるアセスメントがどう変化しているか、教室において有力で意味のある評価方法は何か、について論じる。この概論は、アセスメントに関する文献から様々な見解や概念を紹介することでアセスメントリテラシーについて意識向上を図ると共に、生徒、教師の両方にとって有害となり得る点についても注意を喚起する。

*The goal of assessment has to be, above all, to support the improvement of learning and teaching.*

(Frederiksen & Collins, 1989, p. 32)

What is your understanding of the term “assessment literacy”? What does it mean to be an assessment-literate educator? As an instructor in a higher education (HE) context, how would you evaluate your classroom-based assessment competence? Do you consider yourself to be assessment literate?

As an educator, if asked these questions in a job interview (or informally by a colleague), how would you respond? For program administrators or those involved in hiring teaching staff, would you ask such questions in an interview context? Is assessment literacy an important consideration in making staffing decisions? It should be. A teacher’s level of assessment literacy directly affects student learning and course achievement. Assessment—the process of evaluating

the quality of learning (Harlen, 2007)–is one of the most powerful factors influencing student learning, for better or worse. For university instructors, classroom assessment plays a key role in, and significant influence on, both their teaching and student learning (Cheng, Rodgers & Wang, 2008).

A simple definition of assessment literacy refers to an understanding of the principles of sound assessment (Popham, 2004). However, as we shall see, assessment literacy is more multifaceted than this brief definition indicates. As instructors we often underestimate the power of assessment to shape the courses we teach and to maximize, rather than just measure, student learning. We often do not appreciate or understand the major influence assessment has on students' learning by directing attention to what is important, by acting as an incentive for study, and the powerful effect it can have on what students do in our classes and how they do it (Boud & Falchikov, 2007).

The intent of this article is to serve as a primer on assessment literacy. It will, in a Q & A format, draw together and present some fundamental classroom-based assessment theories and practices that have been identified in the extensive body of assessment literature. The goals here are to inform or remind teachers of these ideas and practices, provide them with points for consideration when planning and using assessment in their classes, and encourage them to pay more attention to this overlooked and undervalued area of professional development. It should be noted that this article is wide-ranging in coverage, touching on numerous issues and perspectives. This broad-scoped approach is intentional, with the recognition that some lack of analytical depth is the trade off in the writing and organizational style adopted. The article may be viewed as an exercise in consciousness-raising, rather than a critical analysis of the issues addressed. The reader will gain a fuller picture, and benefit greatly, from engaging with the sources cited in this assessment literacy overview.

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While research indicates that teachers spend as much as one-quarter to one-third of their professional time on assessment-related activities, almost all do so without the benefit of having learned the principles of sound assessment (Stiggins, 2007). In his more recent *Assessment Manifesto*, Stiggins (2008) writes:

*Historically, educational leaders and teachers have not been given the opportunity to learn about sound classroom assessment practices. Further, over the years, the measurement community has narrowed its role to one of maximizing the efficiency and accuracy of high-stakes testing while playing virtually no attention to assessment as it plays out for teachers or learners day to day in the classroom. (p. 10)*

Aside from a masters-level course related to standardized testing, I also learned little about sound classroom assessment practices prior to beginning to teach university courses. This article is written from the perspective of a university instructor who was admittedly “assessment illiterate,” and is now moving along the continuum to becoming more knowledgeable with regard to sound assessment practice. It is written with a strong sense of being a student of classroom-based assessment: in learning to design and implement more effective assessment frameworks in the courses I teach.

At the outset we should take note of the wide range of settings and courses HE educators work in, and remember that “assessment is an area where context is of paramount importance” (Brown, 2004-05, p. 88). While this article discusses some commonalities that can be applicable in a wide range of contexts, assessment literate educators realize the importance of assessment that is “fit for purpose”—that uses the best method of assessment, appropriate to the context, the students, the level, the subject and the institution. That important point being made, we now move on to a series of four fundamental assessment

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literacy questions and considerations referred to in the title.

### **Question 1. What is assessment literacy?**

No standard definition of this concept exists in the literature, but, expanding on the brief definition noted above, assessment literacy may be effectively described as *“the knowledge about how to assess what students know and can do, interpret the results of these assessments, and apply these results to improve student learning and program effectiveness”* (Webb, 2002). Assessment literate educators should have a range of skills related to the basic principles of quality assessment practices. These skills are presented below. As you read them, consider whether you possess these skills and make them part of your regular assessment practices.

1. How to define clear learning goals, which are the basis of developing or choosing ways to assess student learning;
2. How to make use of a variety of assessment methods to gather evidence of student learning;
3. How to analyze achievement data (both quantitative and qualitative) and make good inferences from the data gathered;
4. How to provide appropriate feedback to students;
5. How to make appropriate instructional modifications to help students improve;
6. How to involve students in the assessment process (e.g. self and peer assessment), and effectively communicate results;
7. **Most importantly**, how to engineer an effective classroom assessment environment that boosts student motivation to learn.

(SERVE Center, University of North Carolina, 2004)

Rick Stiggins, of the Assessment Training Institute, is perhaps the foremost writer to focus on assessment literacy issues in mainstream education. In an article entitled *Assessment literacy for the 21<sup>st</sup> century*, Stiggins (1995) writes:

*Assessment-literate educators ... come to any assessment knowing what they are assessing, why they are doing so, how best to assess the achievement of interest, how to generate sound samples of performance, what can go wrong, and how to prevent these problems before they occur.* (p. 240)

This is a concise summary of the standards of quality that the concept of assessment literacy covers. Teachers who are assessment literate will be familiar with these principles of sound assessment and make them part of their assessment practice.

Adding to our description of what assessment literacy entails, according to Sadler (1998), a highly competent teacher-as-assessor has the following characteristics:

- superior knowledge about content of substance of what is to be learned;
- knowledge about learners and learning and a desire to help students develop, improve and do better;
- skills in selecting and creating assessment tasks;
- knowledge of criteria and standards appropriate to assessment tasks;
- evaluative skills and expertise in the analysis and use of assessment information;
- expertise in giving appropriate, targeted feedback.

These characteristics of competency provide an effective criterion for an exercise in self-assessment of assessment literacy.

It should be noted in this explanation of assessment literacy that an emphasis is placed on assessment and student learning, rather than assessment as measurement. This is an important point. Assessment literacy can be misinterpreted to mean standardized-test literacy or statistical literacy. While a knowledge of measurement theory or some degree of statistical literacy may be useful to organize information, perform analysis and display data, it should be remembered that:

Generally teachers do not calculate reliability estimates, standard error of measurement, validity co-efficients, item discriminations, or standardized scores, nor do they construct detailed test blueprints. These techniques are based on principles for developing large-scale objective tests, with limited relevance to the assessment context of classroom teachers. (McMillan, 2003, p.3)

True indeed. As educators in higher education, this is in fact good news because standardized testing (much more associated with secondary education) is not usually part of our educational contexts, and we do not have to deal with the often negative washback resulting from such assessment. It also means that we need not be intimidated by measurement theory and statistical terminology, and pay attention to the heart of assessment literacy—the student learning that is (or is not) taking place as a result of the assessment frameworks we implement in our classes.

## **Question 2. Why is assessment literacy important?**

Teachers, as true in my case, often seriously underestimate the important role assessment can have on the courses they teach, and a course's assessment framework may be left largely unconsidered, sometimes until long after a course has started. Such an approach

reflects the persistent view that assessment is about measuring and making judgments rather than helping learning (Harlen, 2007). Some pertinent quotes listed below from teachers/researchers with high degrees of classroom-based assessment competency help show the primary importance of being assessment literate, and the hugely influential role assessment can, and should, have in the courses we teach.

- Assessment is a central element in the overall quality of teaching and learning in higher education. Well-designed assessment sets clear expectations, establishes a reasonable workload (one that does not push students into rote reproductive approaches to study), and provides opportunities for students to self-monitor, rehearse, practice and receive feedback. Assessment is an integral component of a coherent educational experience. (James, McInnis, & Devlin, 2002, p.7)
- Assessment is probably the most important thing we can do to help our students learn. We may not like it, but students can and do ignore our teaching; however if they want to get a qualification, they have to participate in the assessment processes we design and implement. (Brown, 2004-05, p. 81)
- “Improving student learning implies improving the assessment system. Teachers often assume that it is their teaching that directs student learning. In practice, assessment directs student learning, because it is the assessment system that defines what is worth learning” (Havnes, 2004, p.1).
- “The single most effective way of enhancing learning within higher education is through the improvement of assessment procedures. Assessment is at the core of the academic role of educators” (Holroyd, 2000, p. 43).
- There is probably more bad practice and ignorance of significant issues in the area of assessment than in any other aspect of

higher education. This would not be so bad if it were not for the fact that the effects of bad practice are far more potent than they are for any aspect of teaching. Students can, with difficulty, escape from the effects of poor teaching, they cannot (by definition if they want to graduate) escape the effects of poor assessment. (Boud, 1995, p. 35)

Following up on the comments of Boud above, other writers have also identified problems with assessment practices and challenges faced by instructors in HE. Kings (1994) noted that assessment "is often shrouded in mystique, governed by tradition and has the tendency to be notoriously inadequate" (p. 1). Hodgman (1997) highlighted a number of problematic issues in the context of tertiary assessment. These include:

1. Students are often expected to guess the nature of assessment requirements;
2. Assessment requirements are often separate to what happens in lectures;
3. Assessment often covers only part of the course material;
4. Assessment is often unclear to students;
5. Assessment is often summative rather than formative.

For many students, assessment is not an educational experience in itself (as it should be) but a process of "guessing what the teacher wants" (McLaughlin & Simpson, 2004).

If Cowan (1998) is correct in asserting that assessment is the engine that drives learning, being assessment illiterate entails having little or no knowledge about the actual purpose or functions of such an engine, never mind how to make it run more efficiently to better drive students' learning. The commentary and insights collected here from teachers,

researchers and scholars should make the importance of assessment literacy glaringly obvious.

### **Question 3. How have assessment theory and practice in higher education changed in recent years?**

Over the past couple of decades a number of significant changes have been reported in the literature on how assessment has changed in higher education. Holroyd (2000) summarizes the following general patterns of change:

- an increase in emphasis on assessment's learning enhancement purposes instead of accountability and certification purposes;
- more focus on formative aspects of assessment rather than summative;
- increased emphasis on a standards model of assessment, involving criterion-referenced assessment, and less on a measurement model, involving norm-referenced assessment;
- more frequent provision of descriptive comment and constructive feedback and less restriction of assessor response to marks, grades and summary labels;
- a move from dependence on one main method of assessment (and end-of-course assessment) to deploying a variety of methods (and within-course assessment);
- less reliance on assessment by teaching staff alone and more involvement of self, and peer assessment;
- increased insistence on assessment as integral to teaching rather than a separate activity occurring after teaching.

Seeing assessment as a crucial and influential part of the teaching and learning process, rather than something separate from it, is an

important shift in attitude that educators should note. According to Brown (2004-05), internationally, assessment is changing to correspond with the changing nature of teaching and learning in tertiary education that focuses more on learning outcomes that students can achieve, and concentrates less on didactic teacher-led approaches. Instructors who are assessment literate professionals are aware of the changing nature of assessment in higher education contexts.

They are also aware of the changing expectations of HE students regarding the assessments they experience. In keeping student learning as a central focus, viewing assessment from the students' perspective is a valuable consideration that assessment literate teachers do not lose sight of. While writing particularly about tertiary students in Australia, James et al. (2002) describe what students value in assessment and the desiderata they identify are widely applicable in HE contexts. With regard to assessment, they note that students value, first of all, *unambiguous expectations*; when students know what course goals and learning objectives are, they study more effectively. As those on the receiving end of assessment, students also want *authentic tasks*; they value assessment tasks they perceive to be "real," that present challenges to be taken seriously and which they believe mirror the skills needed in the workplace and daily life (transferable skills). Finally, HE students value *choice and flexibility*; they want to have some options available in the nature and timing of assessment tasks. These student preferences obviously need to be considered in light of the contexts in which we teach, and making assessment "fit for purpose". However, we should strive to provide students with clear expectations and prior knowledge of assessment criteria, authentic tasks worthy of students' best efforts, and some element of choice in the work they produce.

Awareness of the changing nature of assessment in HE, and of student expectations of how they will be evaluated, are important elements of improving our assessment literacy and thus better handling

the assessment challenges instructors are faced with.

#### **Question 4. What are some key ideas that should influence teachers' views of classroom assessment and the practices they implement?**

Educators in HE will (or should), at the very least, have some familiarity with the “five cardinal criteria” (Brown, 2004, p.19), principles that can be applied to design and evaluate all types of assessment. These fundamental concepts, and related questions for consideration, are listed below.

1. **Validity**- Does the assessment measure what we really want to measure?
2. **Reliability**- Is all work being consistently marked to the same standard?
3. **Practicality**- Is the procedure relatively easy to administer?
4. **Washback**- Does the assessment have positive effects on learning and teaching?
5. **Authenticity**- Are students asked to perform real-world tasks?  
(Brown, 2004)

This list provides us with five fundamental principles and questions for “testing a test,” or for evaluating the assessment instruments we plan to use or have used.

However, assessment literacy requires more than a familiarity with these key principles. What other pedagogically relevant and influential concepts should assessment literate teachers be aware of? Here I will briefly draw attention to four: assessment purposes, using assessment to promote learning, how assessment affects student approaches to

learning, and the constructive alignment model of course design.

## **1. Purposes of assessment**

Classroom assessment may be generally considered as consisting of three types, each having a different purpose: diagnostic, summative and formative. Diagnostic, or pre-assessments, usually precede instruction and are used to check students' prior knowledge and skill levels. They provide information to guide teacher planning and normally the results are not graded, due to the diagnostic purposes being served. Summative assessment summarizes what students have learnt at the end of a period of instruction. These final exams, essays, and performances, for example, are evaluative and results are reported and recorded as a score or grade. Summative assessments, or assessment **of** learning, dominate the assessment landscape, particularly in secondary education, but also at the tertiary level. However, it is important to note that used alone summative assessments are not enough to promote student learning. Waiting until the end of a teaching period to find out how well students have learned is too late to help them improve on their learning (McTighe & O'Connor, 2005).

Formative assessments are ongoing and occur concurrently with instruction to provide feedback to both teachers and students, and serve the purpose of guiding teaching and learning. Non-graded quizzes, oral questioning, teacher observation, and essay drafting, as well as self- and peer-assessment, are some examples of formative assessment. According to Black and Wiliam, (1998), formative assessment, or assessment **for** learning, is at the heart of effective teaching. Yorke (2001) also stresses the importance of formative assessment, contending that it is "critical to student learning and retention" (p.116).

Recognizing the different purposes of assessment should help

teachers make more effective assessment choices for their courses. While doing so, they should keep in mind that “serving learning is the first and most important purpose of assessment” (Black & Wiliam, 2006, p. 25).

## **2. Using assessment to improve learning**

As noted above, the key distinction between summative and formative assessment is that while the former seeks to measure student learning, formative assessment, or assessment for learning, seeks to use the assessment process not just to check for learning that has occurred but to promote future learning (Black, Harrison, Lee, Marshall, & Wiliam, 2003). In their seminal, exhaustive, and hugely influential review of the formative assessment literature, Black and Wiliam (1998) reported that research indicates that improving learning through assessment depends upon five deceptively simple, key factors:

1. The provision of effective feedback to students;
2. The active involvement of students in their learning;
3. Adjusting teaching to take account of the results of assessment;
4. Recognizing the profound influence assessment has on the motivation and self-esteem of students, both of which are critical influences on learning;
5. The need for students to assess themselves and understand how to improve.

While there is little room to unpack these ideas here, all five factors are worthy of further investigation, and implementation in a course’s assessment framework. Assessment for learning is of crucial importance for instructors as it places the primary focus where it belongs—on the students’ learning. Bryan and Clegg (2006) report the following:

. . . assessment advocates have ignored the consequences of student learning for too long. Assessment has been seen almost exclusively as an act of measurement that occurs after learning has been completed, not as a fundamental part of teaching and learning itself. (p. xviii)

By reconsidering the idea of “assessment for measurement,” a focus on assessment for learning encourages educators to use classroom assessment to make both learning and teaching more effective. An examination of the related literature will show that it provides a host of practical ideas, incorporating the five key factors listed above, to help assessment literate teachers do just that.

### **3. Assessment effects on student approaches to learning**

Classroom-based assessment can be very influential in affecting how a student responds to the learning objectives of a course. When making assessment decisions, the instructor should consider how these choices would affect the approach students take to learning: a surface approach or deep approach. With the surface approach, the student reduces what is to be learned to the status of facts to be memorized in order to later reproduce the subject matter (typically on a summative test). Taking the deep approach, on the other hand, students attempt to make sense of what has to be learnt which involves the student in thinking, seeking integration between components, analyzing, and playing with ideas (Gibbs, 1992). A central finding in research on the importance of assessment practice is that most students can choose to take either a surface or deep approach to their learning, and the assessment strategies a teacher uses can be one of the most important influences on which approach they take (Rust, 2002). Boud (1998) makes a similar point when he writes:

Research on assessment shows that assessment has a direct backwash effect on learning. If assessment tasks reward recall, they will prompt students to rote learning and memorization of facts. Similarly, if assessment tasks emphasize understanding of principles, then deeper approaches to learning can be prompted. *We realize now that changes to assessment practice often have a greater influence on students' study patterns than teaching and curriculum* (italics added). (p.3)

Assessment literate teachers are aware of the effects their assessment decisions can have on learning, and plan a course's assessment framework accordingly in attempting to lead students to adopt a deep approach to their learning.

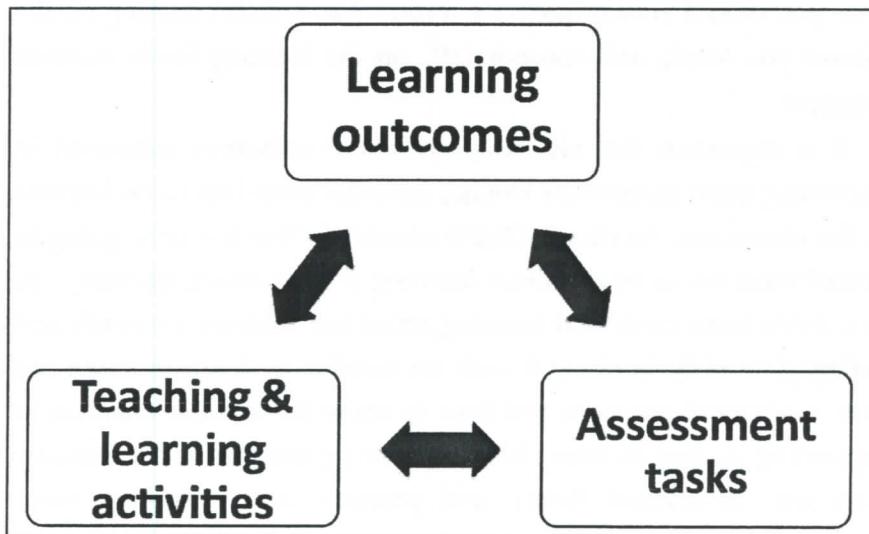
#### **4. Constructive alignment model of course design**

One prominent framework in the related literature for considering the place of assessment within a wider course framework is the “constructive alignment” model, formulated by educational psychologist John Biggs. He defined constructive alignment as follows:

The fundamental principle of constructive alignment is that a good teaching system aligns teaching method and assessment to the learning activities stated in the objectives so that all aspects of this system are in accord in supporting appropriate student learning. (1999, p. 11)

Biggs’ constructive alignment model has become one of the most influential ideas in higher education in recent years and describes how teachers, as reflective practitioners, can get students actively involved (even in large classes) and assess them in ways that enhance the quality of learning. The key idea here is that getting a close alignment between

teaching, learning outcomes and assessment will result in better student learning. Figure 1 presents a visualization of this system.



*Figure 1: Constructive alignment model of course design (from Biggs, 1999).*

When designed and implemented effectively, the assessment framework becomes an integral component of a course and helps to support and maximize student learning. While challenging to put into practice, constructive course alignment is a theory that HE educators should be aware of, and it is one that assessment literate instructors try to put into practice in the courses they teach.

This brief summary of noteworthy and influential concepts related to classroom-based assessment is included here to mark them as ideas deserving of attention in the interests of improving both our assessment literacy, and, consequently, the student learning that occurs in the courses we teach.

## **Conclusion**

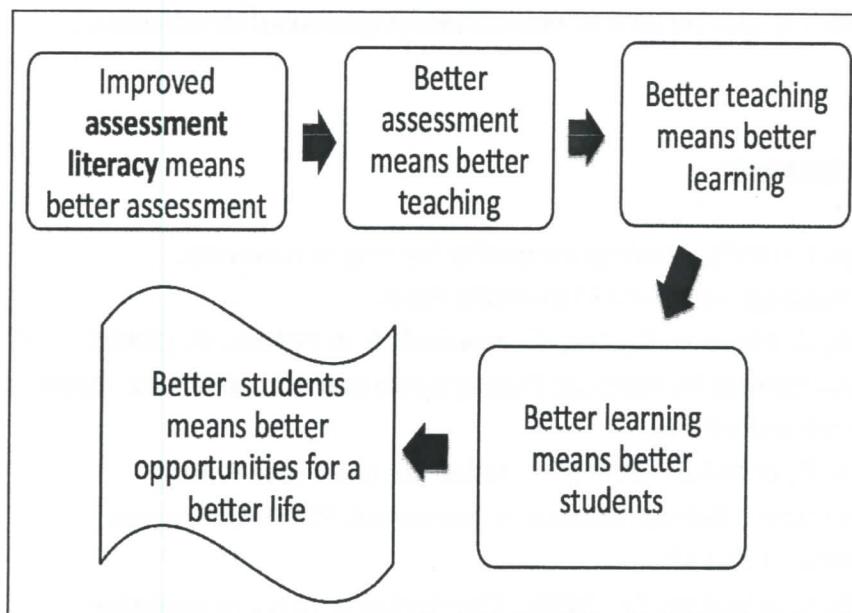
Getting back to our original question, do you consider yourself to be an assessment literate instructor? Are you conscious of the fact that how you would answer such a question has a direct bearing on the classes you teach, and consequently on the learning levels students achieve?

It is important that we, as professional educators interested in becoming more assessment literate, consider ourselves to be learners in the classroom. As Hirsch (2001) observed, "For teachers, going to school must be as much about learning as it is about teaching" (p. 11). Aside from continued learning about the subjects we teach and pedagogical skills in doing it well, we need to be learners about our own assessment practices and how to make them more effective in supporting student learning. However, being learners about effective classroom assessment theory and practice, and becoming more competent assessors means a personal commitment of time, effort and energy. Why bother? Boud, the assessment literate teacher, researcher and scholar from the University of Technology, Sydney provides the answer: "We owe it to ourselves and our students to devote at least as much energy to ensuring that our assessment practices are worthwhile as we do to ensuring that we teach well" (1998, p. 2). Weigle (2007) echoes this sentiment and adds a note of professionalism when commenting, "A solid understanding of assessment issues should be part of every teacher's knowledge base, and teachers should be encouraged to equip themselves with this knowledge as part of their ongoing professional development" (p. 207).

This article, an exercise in consciousness-raising, is intended to encourage teachers to better equip themselves with the knowledge and skills for effective classroom assessment. Possessing high professional standards and knowledge related to assessing students –being assessment literate –is something all educators should aspire

to, enabling us to provide an affirmative answer to the question of assessment literacy this article title poses.

The epigraph used at the beginning of this article contends that supporting the improvement of student learning and teaching should be the primary goal of assessment (Frederiksen & Collins, 1989). The goal of assessment literacy is also, above all, the improvement of learning and teaching. While becoming more assessment literate is of prime importance for a teacher's professional development, the impact on students in our classes must also remain a consideration. Figure 2 presents a somewhat simplified, yet useful, reminder of how the assessment literacy of an institution's teaching staff can have such a significant influence on students.



*Figure 2: Potential impact of teacher assessment literacy on student learning (adapted from Villaneuva, 2007).*

In reality, the causal connections visualized here may be less straightforward and progressive, but the possible effects are nonetheless worthy of consideration. Bearing in mind the effects our degree of assessment literacy may have, finding out more about, and putting to use, the many ideas presented in this paper can benefit all concerned in the learning-centered courses we try to engineer for our students.

*Eddy White has been teaching in Japan for about 15 years, and is a doctoral candidate in Applied Linguistics at Macquarie University, Sydney, Australia. His research interests focus on formative assessment, particularly the application of assessment for learning theory and practice into an EFL context. Assessment literacy is also an area of interest and professional development.*

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