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Assessment: To Measure is Not Enough



Big Idea

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To Measure is Not Enough

Student assessment is commonly associated with tests and formal exams, but over-fixation on such quantitative measures can cause us to lose sight of what is valued in education. We speak to NIE Lecturer Dr Tay Hui Yong on the need for teachers to go beyond such measurements to enhance student learning.

In Singapore where competitive school admissions are largely based on student results, test scores are invariably an important component of student assessment.

But they should not be everything.

Measuring What We Value

"While schools are rightly concerned about whether students are learning, the question is whether evidence of learning lies only in measurement, especially by test scores," says Hui Yong, who is from the Curriculum, Teaching and Learning Academic Group and does research in the area of assessment.

When such quantitative measurement is all there is, we run the risk of reducing students' learning to mere numbers. Instead, test scores should be viewed as indicators of a student's current capacity to help teachers reflect on how they can further help them grow in their potential.

"We are sometimes so preoccupied with academic scores that we forget learning is not so easily measured," says Hui Yong. There is also a tendency for other factors that are not in the metric—such as character—to get overlooked, resulting in a narrow representation of a child's development.

Teachers have to exercise judgment on what else is important regardless of the metric that is currently used.

- Tay Hui Yong,
Curriculum, Teaching and Learning
Academic Group, NIE



An Institute of



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Inspiring Learning through
Self-assessment



Using Assessment as
a Positive Tool



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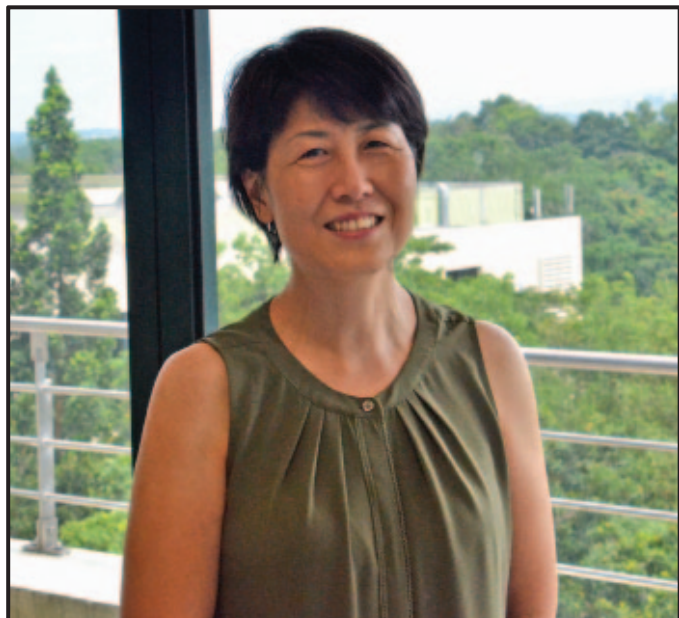
Go to the online version of this article to view a video on how assessment for learning can be integrated into lessons.

“Teachers have to exercise judgment on what else is important regardless of the metric that is currently used,” says Hui Yong. Good teaching requires awareness that there is more to assessment than just the quantifiable measurements.

“We cannot teach well if we cannot assess well,” she adds.

Assessing Students Well

This means that teachers need to ask: *What does the score mean? Are my students struggling because of a lack of practice? Do they have misconceptions?*



Hui Yong wants teachers to know that they have the autonomy and power to do more than just deliver on the national exams.

The next step in assessing well is to determine how to bring a student from where he or she currently is to where he or she needs to be. “The conversation should be about how to help students maximize their potential,” says Hui Yong.

One way to do so is by making the success criteria for a task clear to students before they begin. For instance, if the task is to write a composition, students should be aware of what makes a good composition and what the markers of success are.

This allows students to assess themselves and find their own solutions to new problems. “Ultimately, we know the kids have learned when they are able to do all these themselves,” explains Hui Yong.

Encouraging Independent Learning

Faced with the challenge of preparing our youths for an increasingly complex and uncertain world, Hui Yong feels that the role of teachers today is bigger than just preparing them for examinations.

“I often tell teachers that they have the autonomy, they have the power and more importantly, they have the responsibility to do more than just deliver on the national exams,” she says. “Good teachers in schools are already doing this on an everyday basis.”

References

- Boud, D., & Molloy, E. (2013). Rethinking models of feedback for learning: The challenge of design. *Assessment & Evaluation in Higher Education*, 38(6), 698–712.
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Helping each student become a self-directed learner is the ultimate goal. Students must be active participants in their own learning—actively engaged to ask questions in order to understand key concepts and ideas. To achieve this, feedback during assessment should assist students in driving their own learning and developing their capacities as judges of their learning (Boud & Molloy, 2013).

“The most effective feedback provides clues or reinforcements that show students how to do a task more effectively,” shares Hui Yong. Depending on the ability of the student, a teacher might decide to comment on whether a task is done correctly or wrongly, or use hints to prompt the student instead to think in a certain way (see box story next page on the different levels of feedback).

Feedback could also be improved through dialogue that goes beyond a subject area to include other goals a child could be working towards. “Ideally, this should also be the kind of feedback that goes into report books,” says Hui Yong.

To diagnose and provide the right type of feedback to each student, she has been helping teachers reframe their role, emphasizing that to be a good teacher, they need to check on their students’ progress regularly in the classroom. Good teachers also work towards developing self-regulated learners.

She shares, “I always ask teachers: When you’re not around, do you have the confidence that your students will be able to cope on their own?” Because even without the teacher, the self-regulated student will be able to assess where he or she is and figure out how to get where he or she needs to be.

Tay Hui Yong is a Lecturer from the Curriculum, Teaching and Learning Academic Group at NIE. Her research interests lie in the areas of authentic assessments and self-regulated learning.

The form of feedback students receive can influence their attitude towards the tasks they are assigned to do. At its best, teachers' feedback can help reinforce self-efficacy and critical thinking among students. Hui Yong shares four levels of feedback that are commonly used in the classroom (Hattie & Timperley, 2007).

Personal: Does not refer directly to the task itself such as, "Good Try!" Feedback at a personal level is rarely effective.

Task: Tells students directly what is right or wrong and what to correct. For example, "Where is the third factor?"

Process: Tells students how to do a task better. For example, "Please support the

point with evidence from the text." Such feedback leads to deep learning that can be applied to the next task.

Self-regulation: Prompts the learner to make judgment on his own work through questions such as, "How can you show a clearer link between two paragraphs?" Feedback on self-regulation leads to enhanced self-efficacy and engagement.

Research

Inspiring Learning through Self-assessment

Students play a huge role in their own learning process but they often have few opportunities to assess themselves in the classroom—something NIE Research Scientist Dr Wong Hwei Ming believes can promote learner responsibility and independence. Speaking at a workshop during the 3rd Annual Assessment Colloquium 2016, she addressed common misconceptions surrounding student self-assessment and provided suggestions on how teachers can engage students in self-assessment in the classroom.

When participants of a workshop on student self-assessment were asked "What is self-assessment?" their replies fell mostly along the lines of "students grade their own work".

But is it that simple? Hwei Ming, who also lectures at NIE, emphasizes that for self-assessment to be effective, students first need to be aware of their actions.

Misconceptions of Student Self-assessment

Although some teachers may not take student self-assessment seriously because they feel that "students don't know what they are doing", Hwei Ming stresses that students are actually a source of information about their own learning.

It is a common misconception that "students are not teachers hence they are not able to assess themselves". Hwei Ming believes however that students *can* be empowered to take ownership of their own learning, provided they are given the appropriate structure and guidance from their teachers.

Students as Their Own Assessors

"Student self-assessment is a process where students reflect on their performances, thinking and learning," explains Hwei Ming.

Through self-assessment, students understand themselves better as learners. They become more aware of what works and does not work for them in their learning process, and the conditions under which learning happens.

In class, self-assessment often takes the form of critical examination of their own work with reference to performance indicators set by teachers. It is also through this practice of self-assessment that students understand making mistakes and acknowledging them are essential to their learning process.



Student self-assessment is a process where students reflect on their performances, thinking and learning.

- Wong Hwei Ming,
Office of Education
Research, NIE

Hwei Ming shared with her workshop participants valuable tips on how to encourage students to practise self-assessment.



A Culture of Learning from Failure

“We should encourage failure as part of the learning process,” explains Hwei Ming. “It is through failure that students and teachers can learn better.”

To promote a culture of learning through failure, teachers first need to create a safe environment for students to experience failure without being judged.

For example, when the teacher asks the class a question and the answer that comes from a student is incorrect or incomplete, instead of directly pointing out that the student is wrong, the teacher can encourage other students to build on the first answer. “We should avoid burdening the students by creating classroom anxiety,” says Hwei Ming.

Giving students the opportunity to share the cognitive load of answering creates a collective learning opportunity for the entire class. Furthermore, teachers can gain insight into how students think and be able to address their difficulties instantly.

At the crux of self-assessment is the realization that students are capable of taking ownership of their learning, and that as educators, we need to help put this ownership back into their hands.

Wong Hwei Ming is a Research Scientist with the Office of Education Research at NIE. This article is based on her workshop “Student Self-assessment” at the 3rd Annual Assessment Colloquium 2016.

Student Self-assessment Strategies

To help students take charge of their own learning, NIE Research Scientist Dr Wong Hwei Ming shares some self-assessment activities that teachers can use in the classroom:

1. Learning Logs: Like journals, learning logs help students to reflect on the progress of their task by writing their experience through a series of guided questions such as: *Did the task go well and why? What did I learn from this? How can I improve next time?*

2. Student-led Conferences: These are opportunities for students to share newly acquired skills and knowledge with a small audience through presentations. The audience consists of students, parents and teachers, and includes Q&A sessions.

3. Checklists: Students check their work against a list of performance indicators to verify that they have met task objectives. This puts the ownership of learning into students’ hands.

4. Rubrics: Similar to checklists but with descriptors of quality at each level for each criterion, rubrics allow students to measure the progress of their work—for example, writing composition and assessing it against a set of indicators.

5. Modelling the Task: This involves using a sample “model piece of work” to provide students with a clearer view of what they need to do or avoid to meet task expectations. The model work can be shown to students at

either the start of the task (to set expectations), in the middle of the task (as a guide for them to progress) or at the end of it (to allow them to compare their work against the model).

6. Modelling the Questions: As some students may struggle with asking questions, teachers can help by anticipating where difficulty may be faced and posing relevant questions to guide students in their analysis and reflection. Possible questions include: *What else could I have done? What is the next thing I need to do? What will happen if I...? How can I find out...?*

Using Assessment as a Positive Tool

Assessment is commonly thought of as a useful tool for promoting effective learning. However, this is only so when it is utilized appropriately. A secondary school teacher from Chong Boon Secondary School shares how assessment can affect the teaching and learning process through the kinds of messages it sends to learners.

What is the similarity between a power drill and classroom assessment?

“They are both powerful tools,” Physical Education (PE) teacher Dr Kaycee Chan says in his workshop during the 3rd Annual Assessment Colloquium 2016 at NIE. “The power drill can help us drill a hole in the wall, and even function as a screwdriver. Similarly, assessment, with its formative and summative functions, can be adapted to suit different lesson objectives.

“Assessment holds immense power and influence over many educational issues that matter to us and affects how teachers teach and how students learn,” Kaycee adds. Teachers need to understand this power they have in their hands so they may wield this powerful educational tool more responsibly.

“If the power drill is in the hands of a carpenter, he or she can build beautiful furniture,” he explains, “but if it’s in the hands of an untrained and careless user, it can hurt people.”

This led to his interest in learning more about the implications of assessment in classrooms.

What does Assessment Say?

“What we choose to assess and how we assess it conveys important and powerful pedagogic messages to our students,” says Kaycee. For instance, if something is *not assessed*, does it then mean that it is *not worth acquiring*?

Assessment communicates the valued aspect of a subject and therefore has a significant influence on how teachers teach and how students learn.

Kaycee shares that a student once told him in class: “I don’t want to participate and learn the skills because PE is not examinable.” That incident made him realize that having PE as a non-examinable subject may inadvertently send a message to students that the subject is not important, and affect the way they approach their learning.

On the other hand, when the National Physical Fitness Award (NAPFA) test is used as the sole indicator for PE assessment, PE teachers may spend more time than necessary preparing students during the course of the year for just the test.

“We see a fitness-centric curriculum being enacted where students do a lot of running, push-ups and sit-ups in PE. This may do injustice to the otherwise rich learning in the other content areas that PE has to offer,” explains Kaycee. “We can see the influence of assessment requirements on our teaching and how it may cause unintended consequences such as a narrowing of curriculum in this case.”

Kaycee, who was part of the NAPFA review team, conceived a more holistic approach to better represent the valued contents in the PE curriculum. The team proposed to lower emphasis on the NAPFA test and to administer it on a biennial basis instead of annually. This proposal was eventually accepted and implemented by the Ministry of Education in Singapore.

Aligning Curriculum, Assessment and Pedagogy

“We need to have a good picture of what we want to achieve at the beginning so the assessment can be more aligned,” shares Kaycee. “It is an important aspect of the teaching



We need to have a good picture of what we want to achieve at the beginning so that assessment can be more aligned.

- Kaycee Chan,
Chong Boon Secondary School

We have to look into the totality of teaching, which involves curriculum, pedagogy, assessment. In order to maximize students' learning, these three must be aligned.

- Kaycee on the importance of aligning curriculum, pedagogy and assessment

Kaycee Chan is Head of Department for Physical Education and Co-Curricular Activities at Chong Boon Secondary School. This article is based on his workshop "Assessment as a Message System" at the 3rd Annual Assessment Colloquium 2016.

and learning process, so we have to pay attention to this area to enhance our students' learning experience."

The pedagogy employed then needs to move students towards achieving this objective by ensuring they know what is expected of them.

One way forward is to be clear about lesson objectives before the lesson begins. "After you identify your objectives, you can then start to plan your assessment to find out if the knowledge and skills are being realized by the students," he says.

If the key learning objective of the unit is for students to be able to play a basketball game by the end of the unit, teachers should plan to assess students in a summative manner. For example, students' basketball ability should be assessed based on how they perform in an authentic game situation instead of the number of shots they make from the free throw line.

It is insufficient to conclude that a student is a good basketball player based on the sole reason that he or she never misses a shot from a free throw line. Instead, teachers should look at the ability of the student in making successful attack moves in the presence of defending opponents.

"We have to look into the totality of teaching, which involves curriculum, pedagogy, assessment," Kaycee explains. "In order to maximize students' learning, these three *must* be aligned."

Communicating Expectations

The main challenge is bridging the gap between performance and expectations. "If students don't know the assessment criteria, they will not be able to fulfil the requirements of the task," shares Kaycee.

And if teachers fail to explain assessment criteria clearly, it may result in students not knowing what the teacher is looking for during assessment.

Clear and explicit explanation on what is expected helps students to be aware of the specific changes they need to make to their answers in order to meet assessment standards.

For Kaycee, this is a challenge he gladly takes up, and holistic assessment has become an integral part of his lessons. With him, PE lessons are definitely more than just learning to dribble balls and shoot hoops!

People

The Evolution of Classroom Assessment

Australian Professor Val Klenowski believes that the search for quality assessment practice should restore teachers' professional assessment judgment to meet the learning needs of students in our changing world. This article is based on a section of her keynote address during the 3rd Annual Assessment Colloquium 2016 at NIE titled "The Search for Quality Assessment Practice: Putting Teacher Judgement Back into the Frame".

"The Future of the World is in My Classroom Today"

Just the other day when I was in a cab on my way to NIE, my driver said: "I think teachers deserve a pay increase." I thought what he said was very impressive, so we continued that conversation and he added, "Teachers are the only people who can change a Prime Minister or President's mindset."

He is very much referring to the impact that we as educators have on young people's identities. I always think very carefully about my teaching and about students. I am really interested in the conversations I have had with teachers and students.

I frequently use the case study approach in my research because what you can observe in the classroom is very important.

So I am going to talk about the importance of the teacher-student learning relationship based on my observations and research. This is where teacher judgment and understanding of how to use assessment to improve learning comes in to play.

To begin, I am going to talk about the millennial generation and the changing expectations of industry and business, and what that means for teachers in classroom assessment.

The Millennial Generation

The millennial generation comprises 25 per cent of the world's population and is aged between 16 and 30 years. Research finds that this generation values authenticity, autonomy, purpose and passion in their work. This particular generation also has a social conscience and really wants to make a difference.

We know that this generation has experienced the power of social media, digital media, word-of-mouth advertising and the online marketplace. It is the generation behind start-ups like Grab, Uber, Airbnb, Etsy. And so, at an Australian summit this year, this generation was described as risk-takers and growth-makers.

It was noted at the same summit that there has been a shift in values and expectations. This shift has had a profound effect on the way millennials are living, learning and working, but some of our policies aren't really helpful in encouraging the innovation needed.

So the key idea is that first, we need to nurture the right skills. This has implications for us as teachers. As expectations change and technology changes the way we work, a shift in our thinking is required for innovation to happen.

Preparing Students for the Real World

I was really interested to see how these changes are playing out in Singapore where you have a history of examination and high-stakes assessment. I found the millennial generation were reporting that when assessing applicants for a particular job position, it is *not* so much the stellar grades that matter, but whether the applicant has the right attributes to fit with the team and a good work ethic.

The element of fun is also something that appears to be really important in the work environment. And I must say it is very important in the learning environment as well.

This context has important implications for learning and assessment. Research suggests that students today are learning more outside of the formal classroom context and wanting to develop competencies and skills for innovation and growth.

What our students then really need to learn today are skills that are needed beyond the classrooms—competence, curiosity, collaboration, communication, creativity, commitment and cross-leadership. Such competencies also include personality traits such as emotional resilience and conscientiousness.

To achieve these learning outcomes, our assessment, policies and practices need to first nurture and support the development of the right skillsets. Second, we need to motivate our students by providing them with opportunities to achieve something meaningful or something



We need to ensure that in our interactions with our students, we treat them with respect and in a way that helps us achieve our intended learning outcomes.

- Prof Val on the importance of fostering strong teacher-student relationships to enhance student learning

Val Klenowski is an Adjunct Professor of Education in the Faculty of Education at Queensland University of Technology, Australia. She has researched curriculum development and assessment practice internationally at all levels, from early childhood through higher education. This article is based on her keynote address “The Search for Quality Assessment Practice” at the 3rd Annual Assessment Colloquium 2016.

that matters. Third, we also need to involve our students in ideas for change and create an assessment experience that will provide them with cognitive challenges to scale up.

Fostering Positive Teacher-Student Relationships

In addition to applying pedagogic and reform principles to changing assessment, I would argue that the personal element in the teacher-student relationship is also important. We need to ensure that in our interactions with our students, we treat them with respect and in a way that helps us achieve our intended learning outcomes.

In a recent Australian Research Council project that focused on the use of assessment data to promote equity in schools, we sought to build teacher capacity by supporting the use of critical inquiry to interrogate assessment data and the use of professional judgment to modify teaching practices.

One teacher chose to focus on two students who were struggling with their writing. She was concerned about their emotional stability, lack of confidence and inability to progress. In her inquiry, she came to understand her students' interests and difficulties and realized that she needed to change her pedagogy and curriculum to motivate and engage these students.

The point I am making here is that sometimes, students will slip through the cracks. Sometimes, we have to make that extra effort to find the things that are disrupting our students.

Too often, policymakers and stakeholders are seeking what works. In this search, one cannot lose sight of the uniqueness and humanity of individuals and reduce them to just numbers. It is important to acknowledge that success and failure are apparently unstable yet equally required to develop skills such as curiosity, flexibility and resilience.

Redesigning Pedagogy Conference 2017

Dear Teachers,

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On the Topic of Assessment