Transforming Teaching to Transform Learning: 
A Monumental Challenge for Malaysia

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Abstract
The disquiet about the quality of learning experienced by Malaysian students and the approach to learning they adopt is no longer news. The experience and approach are generally marked by surface learning involving memorisation of information as isolated facts, an antithesis to the development of deep learning that promotes understanding or long-term retention of knowledge and information. The continued existence of this phenomenon is not for the lack of trying to change the status quo. On the contrary, a number of expensive, large-scale, centrally-driven reform efforts have been made to change how students experience and approach learning but the status quo remains largely untouched, stubbornly holding its ground. Based on a nation-wide study to investigate the way teachers make pedagogical decisions, this paper argues that one major barrier to transform students' approach to learning is changing the way teachers think about teaching which past reform efforts have largely ignored. The data suggest that for the most part teachers studied see teaching as transmitting information from teacher to students. Unless their view of teaching is challenged and changed, it means that their classroom practice is unlikely to change to be more responsive and supportive of student learning. The findings of the study have wide implications in reform efforts and planning professional development courses for teachers to raise the quality of learning in educational institutions.

Key words: Learning approach, Malaysian students, reform efforts, theories of teaching

INTRODUCTION
Learning, Barnett (1992) asserts, is a human process which has an effect on those undertaking it. The effect can go either way, enriching or impoverished, and it is the latter that raises concerns. Concerns about the quality of learning are concerns about the outcomes of learning, and correspondingly to a large extent concerns about the quality of curriculum and the quality of teaching taking place in where it happens the most: the classrooms (Biggs and Tang, 2007; Dee Fink, 2003; Gardner, 2006). To be sure, the concerns are nothing new. Ever since educational institutions were created as dedicated places to educate the young generations and expected to deliver and make good what were conceived

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to be their primary objectives, the concerns have been an ongoing and persistent phenomenon. They refused to go away although the reasons underpinning them have not all remained in the same place. The reasons are the function of time; as the world change, the reasons, at least on the surface, change too.

The phenomenon is also universal; none has a monopoly to it – no particular country, geographical area, economic region, or specific constituency. Politicians of all stripes and persuasions, knowing education is close to the heart and among the top on the agenda of the electorates, have made its state as one of the centre pieces of their campaign to draw the electorates’ attention and support their cause (before proceeding to lay out what they will do in power to make education better for the electorates’ children); the men and women in the street also have their take on it (before going on to theorise why it is the case and what should be maintained, rectified or jettisoned to improve education); and even teachers and academics themselves, the supposed guardian of quality have seen it fit to get into the act (before advancing to justify how much more challenging their task is given the situation). And, why not, for much is at stake, and the extent of the stake is not confined to the economic or human capital sphere alone although it seems to be the most talked and heard about these days.

Various actors and players at various levels of society have also used myriads of metaphors and phrases to express these concerns, picking their choice of metaphors and calibrating their selection of words based on the degree of impact they want to have and the scale of urgency they seek to arouse in their intended audience on the need to stay the course or make the changes to the status quo they deem necessary. A revealing example is one made by Ronald Reagan nearly three decades ago. Then an American President and perhaps influenced by the Cold War mentality at that time, he famously used the widely criticised war metaphor to encapsulate this concern:

*If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war. As it stands, we have allowed this to happen to ourselves. We have even squandered the gains in student achievement made in the wake of the Sputnik challenge. Moreover, we have dismantled essential support systems which helped make those gains possible. We have, in effect, been committing an act of unthinking, unilateral educational disarmament* (National Commission on Excellence in Education, 1983, p.5).

In contrast, without the soaring rhetoric of politicians but much more grounded in the reality of the classroom and more in tune with the way teachers teach and students learn, Biggs and Tang (2007), following Marton and Säljö (1976), invoke the notion of deep and surface learning to argue and put their points across. They used the story of ‘Making Robert like Susan’ to highlight their concerns about the way students approach their learning:
In the lecture, [Susan who adopts a deep approach to learning] ... finds an answer to a preformed question; it forms the keystone for a particular arch of knowledge she is constructing. Or it may not be the answer she is looking for and she speculates, wondering why it isn’t. In any event, she reflects on the personal significance of what she is learning. ... Robert [who approaches his learning in a surface manner] hears the lecturers say the same word as Susan is hearing but he doesn’t see a keystone, just another brick to be recorded in his lecture notes. He believes that if he can record enough of these bricks and can remember them on cue, he’ll keep out of trouble come exam time. ... Students like Robert are in higher proportion in today’s classes (Biggs and Tang, 2007: p.9).

THE MALAYSIAN SITUATION

In Malaysia, concerns about the quality of learning are very much in evidence and as a result is seldom out of the limelight. Take the National Economic Advisory Council (NEAC), for instance. In proposing a ‘New Economic Model for Malaysia’, it expressed this disquiet by way of stressing the urgency to “[r]eview the education system – shift educational approach from ‘rote learning’ to ‘creative and critical thinking’” (NEAC, 2010: p.123) as one of the critical measures that needs to be put in place if Malaysia’s economy is to be transformed into a high-income one from its current long-standing middle-income status. To be sure the NEAC is neither the first nor the only body to voice the concerns. The Malaysian Ministry of Education itself is aware of the need to improve the quality of student learning by transforming the way the students approach their learning (Kementerian Pelajaran Malaysia, 2006). And, students in Robert’s mould are also not uncommon in Malaysia. This point is illustrated well enough by these two instances:

First, a history teacher’s observation of how her students learn the subject:

... students view history as a difficult subject because it involves memorisation of dates, events and all kinds of facts and this means extra reading. In terms of learning, students largely depend on the teachers. ... They cannot differentiate important points when writing notes from the textbooks or when listening to what the teacher teaches. They are very much dependent on the guidance of teachers … (Ratnavadivel et al., 2008: p.242).

Second, a student’s (Noraini – not her real name) explanation of how she solved a mathematics problem:

Noraini works out the solution to the problem, 27 x 5 = _____, with apparent ease the following way:

$$\frac{3}{27}$$
\[
\frac{x}{5} = \frac{135}{3} \]

She explains that 13 (in 135) is obtained by \((2 \times 5) + 3\).
R: What if I add first before multiplying [i.e. \((3+2) \times 5\)]?
N: Don’t feel it can be done.
R: Why must you multiply first?
N: If we add first and then multiply (pause). Teacher has never taught [us that]
R: Oh?
N: Teacher taught us to multiply first and then add. That’s how he taught [us]
R: If teacher has taught Noraini to add first before multiplying, can the method be accepted?
N: Can [Yes].
R: Can the method lead to a correct answer?
N: Can [Yes].

(Lim, 2008)

Noraini’s case is particularly telling and worrying given that she was considered by her teacher to be a top student in mathematics in her class which was also a top class as the school practised streaming or tracking. In the problem she was asked to solve, her approach to learning necessitated her committing to memory the sequence of what she had to do to obtain the right answer, that was to multiply 2 in the ten column and 5 in the unit column first (that is, \(2 \times 5\)) before adding the 3 tens (that is, \((2 \times 5) + 3\)) regrouped from multiplying 7 and 5 (that is, \(7 \times 5\)) in the unit column. And, it seems rather obvious she did not know why she needed to multiply first before adding. If she were taught to add the tens first (that is, \(2 + 3\)) first before multiplying (that is, \((2 + 3) \times 5\)), she would have accepted it as the right way to obtain the right answer.

Considering that Noraini is acknowledged to be a top student, one can only imagine how the rest in her class approach their mathematics’ learning. And, there are many like her, not just in the way they approach the learning of mathematics but that of other subjects as well (Nagappan et al., 2006; Ratnavadivel et al., 2008). Learning by rote is pervasive in Malaysia, and it extends to higher education too. As a Reuter report (Chance, March 18, 2010) highlighted, “[a]t present, it [Malaysia] turns out tens of thousands of graduates a year who learn by rote and are ill-equipped for the new economy”. To be sure, a number of times in the past, Malaysia had tried in a big way to change the way its teachers teach and its students learn but so far these reform efforts, despite the heavy investment involved – money as well as time and other valuable resources – have met with little success that is of note. The change that matters – the teachers’ approach to teaching and students’ approach to learning – or what Tyack and Cuban (1997) metaphorically term as change to the ‘deep water’ of the ocean as opposed to change to the waves on the ocean surface, has essentially and stubbornly not happened (Nagappan et al., 2006; Ratnavadivel et al., 2008).
Rote learning’s persistence is therefore not because there was no effort to change the status quo, nor is it due to the absence of motivation to make learning more inter-connected, meaningful and deep. Thus, while the NEAC may exhort the need to transform learning, making a success of it is another matter altogether. For Malaysia, the challenge to transform learning in its educational institutions lies on many fronts, but one of the most if not the most critical is in changing the classroom practice of its teachers through creating conditions that are not only conducive to such change but also that can build and strengthen the teachers’ capacity to change.

**LITERATURE REVIEW**
Teachers, in particular the approaches they adopt in teaching, play a critical if not defining role in shaping the approaches students take to learning (Biggs, 1987; Biggs and Tang, 2007; Darling-Hammond, 1999; Prosser and Trigwell, 1999). The teachers’ approaches in turn is influenced by a multitude of factors (Prosser and Trigwell, 1999; Shulman, 1992). Among these factors, a powerful one is what the teachers think and believe what teaching is all about. All teachers, as Gow and Kember (1993) argue, have some theory or explanation of what teaching is, and this is implicit in the way they teach, even if they are not consciously aware of the theories they hold. More importantly, their theories profoundly affect the kind of learning environment they create in their classrooms which has a particularly telling effect in shaping the approaches students take to learning.

According to Biggs and Tang (2007), of the theories of teaching that teachers hold, they can be grouped into three common categories, and which category a teacher belongs to, they argue, tend to depend on their level of development as a teacher: Level 1, 2 and 3. Level 1 teachers train their attention on the differences between students. To this group of teachers, there are good students (like Susan) and poor students (like Robert). They focus their attention on what the student is. This point is particularly crucial. The way these teachers see it, their primary responsibility is to be the knowledgeable expert, the sage on the stage by knowing the content well and expounding it clearly. Thereafter the responsibility rests on the students to attend class, to pay attention, to listen carefully, to take notes and so forth; in a nutshell it is solely a student’s responsibility to make sure what is taught to him or her is taken on board and, when assessed, to report back what is taught in the manner it is expounded. In short, to declare back to the teacher what is declared to him or her by the teacher. Knowledge therefore takes on a declarative rather than functional form. From the perspective of Level 1 teachers, the logic is simple enough: good students shoulder their responsibility well, poor students do not.

Teaching at Level 1 is therefore held effectively unchanged or constant: teaching is viewed as transmitting information from the teacher to the student, a moving of information from one point, a transmitter, to another point, a passive receiver. This view comes with a cost which is also costly: the differences in learning are attributed to the differences between students: in terms of their ability, motivation, attention, effort, ethnicity, and so
on. And, among these, ability is usually regarded as the most important factor. As a result, assessment takes on a sorting and filtering function: to sort and filter the good students from the poor ones after the teaching is over. And what about the curriculum? It is principally seen as a list of contents to be covered, a syllabus. Students’ learning experiences do not enter the picture and being reflective is alien and totally out of the question for teachers at Level 1. Consequently, their teaching is unlikely to change. They do not see the necessity for it. They feel at home with their ‘the-student-is-at-fault’ theories of teaching.

Next, Level 2 teachers. Unlike Level 1 teachers, they focus on what they themselves do but, as with Level 1 teachers, their view of teaching is still very much defined by the notion of transmission. The principal difference is that they see their role as more than just information transmitter: they transmit concepts and understanding too (Biggs and Tang, 2007; Prosser and Trigwell, 1999). And, they are even willing to entertain the possibility that there might be more effective ways of teaching than the ones they prefer and currently using. Thus they are more open to learning and equipping themselves with new ideas and ways of teaching. To that extent, they are reflective. This is a significant step forward as learning is now seen as more a function of what the teacher does than what the student is. Contrast this with Level 1 teachers. But, Level 2 theories of teaching, as with Level 1’s are still a deficit - underpinned theories although the deficit is now loaded onto teachers rather than students. Level 2 theories are ‘the-teacher-is-at-fault’ theories of teaching as opposed to Level 1’s ‘the-student-is-at-fault’ theories.

What about Level 3 theory of teaching? Teachers at this level focus on two things: (i) what the student does, and (ii) connects what the student does to teaching. This shift in focus is critical as it puts learning at the heart of the matter with teaching playing a supporting rather than a central role. At this level, there is therefore an ongoing dialogue or conversation of sort between what the student does and what the teacher does. The two is seen as intertwined, their relationship, dialogic. And, being reflective is very much part of the equation. Biggs and Tang (2007: p.19) explain Level 3 theories of teaching this way:

Level 3 is a student-centred model of teaching, with teaching supporting learning. No longer is it possible to say: ‘I taught them but they don’t learn.’ Expert teaching includes mastery over a variety of teaching techniques, but unless learning takes place, they are irrelevant; the focus is on what the student does and on how well the intended learning outcomes are achieved. This implies a view of teaching that is not just about facts, concepts and principles to be covered and understood but also to be clear about:

1. What it means to ‘understand’ content in the way that is stipulated in the intended learning outcomes.
2. What kind of teaching/learning activities are required to achieve those stipulated levels of understanding.
Level 3 theories of teaching therefore entail a profound shift in how teaching is seen. What is important is not so much what the teachers do but what the students do. In an important reverse way, this puts the onus on the teachers to be clear about what they want their students be able to do at the end of their teaching, and subsequently to design and craft a learning environment that makes it likely for students to achieve it. Learning therefore comes to the fore, becoming the main actor. Teaching on the other hand recedes to the background, taking on a supporting role instead.

A key point is that Level 3 theories of teaching are based on current evidence on how learning happens, that is they are based on a constructivist theory of learning which essentially says that learners construct knowledge with their own activities, using and building on what they already know. Teaching therefore is no longer a matter of transmitting, but crucially of engaging students in active learning, helping them to build their knowledge in terms of what they already know. This implies that effective learning changes the way the students see the world as what they know is reorganised. Biggs and Tang (2007: p.21) put it this way, “… education is about conceptual change, not just the acquisition of knowledge”.

The discussion so far suggests that what all these three levels of theories of learning entail is this: Teachers who hold theories of teaching at a higher level are more likely to promote a deep approach to learning in their students, influencing them to engage in meaningful learning, to work at connecting ideas and seeing the big picture so to speak. Conversely teachers at a lower level are less liable to do so but instead more likely to promote surface learning, to influence students to approach their learning more like Robert’s than Susan’s, to lead them down the path to rote learn what is taught rather than work towards understanding, to commit to memory isolated facts, to cut corners in approaching a task and so on (Biggs and Tang, 2007). Students who approach their learning this way are likely to mistake the wood for the forest. Put another way, if student learning in educational institutions were to be transformed to look more like the way Susan approaches learning, then the number of Level 3 teachers urgently need to be increased. Given these three levels, at which level are the teachers mostly, specifically Malaysian teachers? This is where we turn to next.

**MALAYSIAN TEACHERS’ THEORIES OF TEACHING**

A group of Malaysian researchers had conducted a large-scale, nation-wide, mixed approach, government-funded study on Malaysian secondary teachers, investigating factors that played a significant role in structuring their pedagogical decisions (Nagappan et al., 2006). Their study had a quantitative and qualitative component. For the latter, they visited 50 classrooms, observed how the teachers taught, and asked them why they taught the way they did. They gathered an extensive set of data. Here’s a sample of the typical qualitative data they collected:
From five science teachers:

*We have no choice. The rote learning method is our system. You need good [examination] results to have a career. All depends on the results. ... Since I am using the drilling method, I have to keep stressing the same point, to remind them [students], point to them* (Nagappan et al., 2006: p.176).

*There is nothing that we can do because even after explaining several times, they still cannot understand. ... Normally, I just don’t do anything about it. ... Several times, I repeat it [the explanation] ... Repeat and repeat and they still don’t get it. ... They just refuse to remember anything.* (Nagappan et al., 2006: p.163).

*By right, the students should read first to understand the ideas that the teacher is going to teach. If the students already have the ideas, whenever they do not understand, they could then ask the teacher. It will be easier for them to ask if they already have the ideas. Students do not ask questions because they are not ready. It should be that way. The students must be ready when they come to school. In class they need to listen to the teacher, try to understand what the teacher is teaching. If not, ask and revise at home.* (Nagappan et al., 2006: p.153).

*You provide them with the answer [to the experiment] first, then only make the students do the experiment. Theory first, that’s it. I think this is the approach. Explain first, then they have it. ... Then only they do the experiment, to prove it [the theory]. ... At least [this way] they know the results* (Nagappan et al., 2006: p.155).

*In the practical [lab] class today, the students will copy it [what the teacher has prepared] into their books. In the planning stage [for the experiment], I will assist them in writing the procedures [for the experiment], give them the sentences. Everything has to be given, if not, they do not know anything. ... Empty. It will take 20 minutes for them to copy this.* (Nagappan et al., 2006: p.158).

From three English language teachers:

*... when we come to Forms 4 and 5, the students have very basic skills, very basic literature; not this level of literature where the students half of them don’t even know what is going on in the class, and read they don’t even read. ... So if they [the students] don’t do their part then it becomes a stress for the teachers. ... We have to spoon-feed them. We have to give them every answer for everything ... They are not motivated to think for themselves* (Nagappan et al., 2006: p.129).
They’re very dependent on the teachers. You tell them to do ... and you stand there beside them ... they won’t do. You have to stand there. You have got to tell them, “Okay, take this ...”, then they do it. You turn your head, then they will be missing ... gone in action, something like that. That’s our type of students. (Nagappan et al., 2006: p.111).

I think this method [expository method] is the most suitable ... because I think before something can be done, we must explain first so that students can understand. ... Because to me, explanation, before students can do the exercises is important, we need to explain so that students understand. If we don’t show the students, they won’t know. So, we show them one by one, step by step. (Nagappan et al., 2006: p.143).

From two mathematics teachers:

Now I am rushing through the syllabus. ... It does not matter if the students understand or not. If the syllabus is not completed, I feel dissatisfied. ... I think if we want to really make sure they [objectives] are met, we can’t do that too because in this school, we [mathematics teachers], have to ensure that the syllabus is completed, meaning if 50% [of the students] understand [what we have taught, we feel that the objectives are met] (Nagappan et al., 2006: p.140).

My students are weak. That’s why I teach [the topic histogram] in that way [students copying the solutions written on the white board by the teacher]. ... [My students] basics [are] weak. Fractions, weak. Don’t know which one is the x-axis and the y-axis. ... You give homework, they don’t do, say they don’t know. ... You must supervise them closely. (Nagappan et al., 2006: p.141).

From two Malay language teachers:

Students do not have the initiative to learn and master the subject outside the classroom or outside the subject session. Students are not self-reliant and incapable of sourcing for materials as further reinforcement for their learning in class (Nagappan et al., 2006: p.193).

Students have to be directed and guided. It is seldom that the students learn on their own free will. Therefore, the students need to be assigned exercises or tasks either for consolidation or reinforcement and also so that they will continue to learn without lagging behind (Nagappan et al., 2006: p.194).

From two history teachers:

History requires extensive reading and memorisation and this contributed to the students’ lack of interest in the subject. As for students in the weaker classes,
they are also not interested in the subject because there are too many facts that they have to read and understand (Nagappan et al., 2006: p.215).

Compared to other subjects, history requires plenty of reading, internalisation and good memory. Students either read once or do not read at all because they consider it to be not important and difficult to understand. The revision exercises, immaterial of whether they are objective (multiple choice), structured or essay questions are seldom answered by the students because they consider them to be difficult. ... Questions that relate to ‘how’, ‘why’ and ‘such as that’ are never raised (Nagappan et al., 2006: p.216).

Looking at the data using the lens provided by Biggs and Tang (2007), concluding that the teachers were mostly at the lower level, with many if not most at Level 1 theories of teaching is not difficult. For the most part, the data in a way speaks for itself. True, the context in which the teachers work needs to be properly understood before one can be more assured about the conclusion, but the views they expressed do not inspire confidence that they hold more informed, sophisticated theories of teaching. Factors such a centrally-prescribed curriculum and a test-based accountability policy do have a major impact on the way they teach (Nagappan et al., 2006, Ratnavadivel and Lim, 2011) but then again many of them still expound a deficit model of teaching. This is one big barrier that Malaysia needs to overcome if it wants to transform learning in its educational institution.

CONCLUSION

Not long ago, Shulman (1999) argued that promoting quality in learning demands that learning be taken seriously, far more seriously than was the case at that time. To him, this meant looking at learning as more than just bringing the knowledge outside the person – in books, theories, in the mind of teachers – to inside. If that were the case, then teaching is a simple matter of transmitting knowledge, the filling up in learners the knowledge that comes from the teacher. Indeed, he went on to say, “learning is basically an interplay of two challenging processes – getting knowledge that is inside to move out, and getting knowledge that is outside to move in” (Shulman, 1999: p.10). Shulman was of course talking about learning from a constructivist viewpoint, a viewpoint that paints a much more complex picture of learning. And viewed this way, learning and the learners need to be taken far more seriously. The point he was making may seem removed from the content of this paper, but looking from another angle, it offers an important lesson: if efforts to transform the sort of learning that is pervasive in educational institutions in Malaysia are to stand any chance of making a difference, then getting the theories of teaching that are inside the teachers to move out, challenged, and getting them back inside in the teachers in a changed, more informed form is crucial. Teaching needs to be looked at as far more than transmission, and teachers’ theories of teaching need to be taken far more seriously than ever before.
REFERENCES

