

## Differentiating Teaching and Learning: The Benefits and the Challenges

### Summary

*In this second issue of Volume 5 of the ELIS Research Digest, we look at differentiated instruction, a way of providing for the variety of students in our schools. Not only do our students vary in their home languages and socioeconomic backgrounds, they also vary in their prior school experiences, their learning styles and profiles, and their abilities. To help each one of our students be the best that they can be, we need to look at what we can do to support the learning of each child. What is the ideal? What is practical? One suggested answer is the use of differentiated instruction, where the teacher adjusts the learning programme to maximize the possibilities for every student in the classroom. How far can a teacher of large classes make such accommodations? How does the teacher make such accommodations? Can this be done in classrooms where the range of students is very wide? What are the advantages and disadvantages? This issue looks at some of these questions: what differentiated instruction is, how to begin, and whether it is practical.*

### Introduction

In his speech to the Seventh International Conference on Thinking in 1997, Mr Goh Chok Tong, then the Prime Minister of Singapore, explaining the government's philosophy behind 'Thinking Schools, Learning Nation', stated:

*...Excellence does not simply mean 'outstanding'. Excellence means each of us at our own level, being the best that we can be... we want to have an environment where workers and students are all the time thinking of how to improve. (Speech – Shaping our future: Thinking Schools, Learning Nation – given on 2 June 1997 as cited in Ng, 2008, p. 3)*

How then do we ensure that each of our students is, at their own level, the best that they can be? In their discussion of how to move Singapore from 'great' to 'excellent' on the scale reported by Mourshed, Chijioke, and Barber (2010) and Barber, Chijioke, and Mourshed (2010), Lee, Hung, and Teh (2013) proposed that excellence for Singapore could only be achieved by raising the level of all students. This could only be done when high quality teachers adapted their instructional practices to the learning needs of individual students. To become an 'excellent' system as defined by

Mourshed et al. (2010), teachers needed to be empowered to adapt the instruction to the different learning styles and profiles of their students. Lee et al. (2013) felt that this might be difficult to do all the time for all students in Singapore because of the emphasis on tests and ranking that it shared with other East Asian cultures and the difficulty of reconciling differentiated instruction with the demands of an undifferentiated testing system. Thus, they suggested a balance of teacher-centric and student-centric parts to the curriculum. Resources availability could mean that the focus would have to be on lower achieving students and on their particular strengths and talents so as to bring up their level closer to that of the high achievers and thus raise the overall level (Lee et al., 2013, p. 283).

Lee et al. (2013) reported evidence indicating that, when classrooms became more student-centred, responding to the needs and interests of the students, the lower achieving students learnt more. Moreover, when the tasks and activities related more to real world issues and less to school, lower achieving students performed better. One reason why the lower achieving students had difficulty with English, for example, was that, in school, English was taught as a 'subject' with less emphasis on it as a system of everyday communication. The findings of Lee et al. (2013) indicated that it was not the case that lower achieving students were 'less

intelligent’ but rather it was that the learning environment in the schools was not helping them to realize their full potential.

In their work on what research said about learning, Bransford, Brown, and Cocking (2000) pointed out that teachers who saw students as the central concern of education understood the importance of building the conceptual and cultural base that individual students brought to the classroom. They recognized that students constructed meaning starting from the base of the beliefs, understandings and culture they brought from home and previous experiences. Bransford et al. (2000) used the metaphor of a bridge between the school subject and the students to indicate how such teachers ‘keep a constant eye on both ends of the bridge’ (p. 136). Each student brought a unique set of such beliefs, understandings and culture with them. (See also Shillady, 2013, with regard to the importance of student background in early childhood education.)

The Singapore English Language Syllabus 2010 stated that ‘Learners are at the centre of the teaching-learning process. Teaching will be differentiated according to pupils’ needs, abilities and interests.’ (Curriculum Planning & Development Division, 2008, p. 11). Later, further detail was given:

*Within each year level, how the Learning Outcomes will be achieved ... depends on the entry profile, needs and abilities of the pupils. Teachers can differentiate instruction in many ways. For example, teachers can modify the difficulty level of the text in terms of its length, the density of the information it contains, the familiarity of the topic to the pupils and the organisational structure of the text. Teachers can also vary the extent of scaffolding, from chunking texts, giving explicit instruction and modelling of the processes, to creating opportunities for pupils to work independently. In addition, varying performance expectations in terms of the duration for task completion and the type of assignments, i.e., written, oral or performance, will cater to the range of pupils’ needs, abilities and interests. (Curriculum Planning & Development Division, 2008, p. 18)*

The next section discusses what the literature describes as ‘differentiation’ or ‘differentiated instruction’. The literature tends to use the two terms as synonyms. This text will generally use the term, ‘differentiated instruction’, but will sometimes use ‘differentiation’ where this is simpler to do in terms of text structure.

## **What is differentiated instruction?**

Algozzine and Anderson (2007) believed that, despite teachers hoping for more, many students continued to perform at the ‘margins’ of their classrooms, never fully achieving all that they could. In a nutshell, the problem was that the students were varied in many ways. However, despite each student being different in their learning, the end target, the examinations, and the preparation for them were the same for all the students. The authors suggested that the answer was differentiated instruction.

Tomlinson and Allan (2000) defined differentiated instruction as ‘simply attending to the learning needs of a particular student or small group of students rather than the more typical pattern of teaching the class as though all individuals in it were basically alike’ (p. 4).

Differentiated instruction was not a new concept. According to Tomlinson (1999) and Algozzine and Anderson (2007), it went back to the days of the one classroom school house where all students from a number of grade levels were taught in the same class but where the content, process and products were differentiated according to the level of each student or group of students. Watts-Taffe et al. (2012) agreed that differentiated instruction was not new but argued that it was gaining in importance as some accommodation needed to be made for the many students who failed to meet the highest levels of literacy required at school.

Tomlinson and Allan (2000) believed that differentiated instruction was more than a single strategy or series of strategies. It was ‘a way of thinking about teaching and learning’ (p. 13). Similarly, Tomlinson (2000) emphasized that differentiated instruction was not of itself an instructional strategy nor a recipe for teaching nor something that a teacher did to fill a gap in the teaching programme. It was, she argued, a teaching philosophy based on

a set of beliefs:

- Students of the same age differed in terms of their readiness to learn, their learning styles, their interests, their experiences and backgrounds.
- These differences were substantial enough to warrant the students being taught different things at different speeds and with different support.
- Students learnt best when an adult pushed them just beyond the point where they could work without assistance.
- Students learnt best when a connection was made between the curriculum content and their personal interests and experiences.
- Students learnt best when the learning was natural.
- Students learnt best when they felt they were respected members of the school community.
- The main job of the school was to maximize the potential of every student.

Tomlinson (2000) suggested that this set of beliefs highlighted a potential problem with enforced standards as, inevitably, standards that ignored student differences left out some students.

Tomlinson (2000) emphasized that differentiated instruction did not substitute for expert teaching or a well-designed curriculum. It was a refinement. (See also Tomlinson & Allan, 2000, p. 81.) Expert teaching helped students understand the principles in subject areas, making the principles relevant to their lives. However, this could not be done for all students unless there was some differentiation in the instruction that allowed for the varied interests and backgrounds of the students, that involved the students in setting learning goals for themselves, and that linked the learning to their interests and experiences.

One difficulty was that the single standard test that students were required to take was not differentiated in any of these same ways and teachers were left with the dilemma of whether to teach to the test or to teach to the needs and interests of the students. Tomlinson (2000) argued that the teacher's first obligation was to ensure that standards-based instruction did not conflict with best

teaching practices. If that was done, she believed that, automatically, there would be no conflict between the standards and differentiated instruction. In fact, differentiated instruction would help by indicating how best to teach the same set of standards to a range of students. Whatever the standard given, differentiated instruction should help challenge any student to meet the standard through material set at various levels of difficulty, with different scaffolding, through different grouping over different time periods, while considering the interests and learning styles of the students. The teaching approaches could vary at different stages of the learning with some teacher-fronted approaches, class work and small group work.

Like Tomlinson (2000), Fernandez (2015) believed differentiated instruction was not a teaching method or approach. It was more a philosophy that instruction should cater to the needs of all students. It was a part of and did not replace good teaching. There would be times when the most appropriate activity would be a teacher-led class activity. There would be times when the most effective thing would be for the class to work together

as a unit. However, there would be times when the most effective activity would be some form of differentiated instruction (Fernandez, 2015). The decision should be dictated by the learning

goals. Once these were clearly set out, the decision on which type of activity was appropriate would follow on from those goals.

Tomlinson (1999) defined the differentiated classroom as one where the teacher accepted that students varied in terms of their starting point, their interests and their learning profiles. It was a place where each student competed against him or herself more than against other students. The teacher worked hard to make sure every student, struggling, advanced and in-between, also worked hard and achieved more than they thought they could and, in the process, learnt that learning involved effort, disappointment and triumphs. The teacher accepted that, while the students had much in common, there were also important differences that had to be accommodated if the students were all to reach their full potential. The teacher then set up the classroom to match his or her own teaching

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style and the different learning needs of the individual students.

For Tomlinson, Brimijoin, and Narvaez (2008), the non-negotiables of differentiated instruction were ‘respecting individuals, owning student success, building community, providing high-quality curriculum, assessing to inform instruction, implementing flexible classroom routines, creating varied avenues to learning, and sharing responsibility for teaching and learning’ (p. 3). Tomlinson and Allan (2000) stated that differentiated instruction was not an add-on to teaching. It was the mark of good teaching.

In her definition of differentiated instruction, Fernandez (2015) began with the concept of ‘respectful tasks’. She explained that, though respectful tasks might be adjusted to the diverse needs of students, no matter where students were in their learning, they deserved work that focused on key concepts, ideas and skills. Respectful tasks were significant and interesting tasks that required the students to think. To effectively arrange such tasks for all students, the teacher needed to have a system of assessment that indicated the progress each individual student was making so that appropriate adjustments could be made to the tasks. The teacher also needed to keep details of each student’s interests so that tasks could be made as relevant as possible to the student.

Fernandez (2015) recognized that differentiated instruction could be demanding for teachers, who had to have a deep understanding of their own subject and where the difficulties might lie for their students. They also needed to be aware of the strengths and difficulties that different students might have and how the students could be supported.

While having the required skill in their subject, the teacher needed to build a classroom atmosphere that was conducive to learning with students being supportive of each other’s learning and feeling safe in the certainty that the teacher had their best interests in mind when allocating activities. Fernandez (2015) suggested that part of developing such a classroom community was developing appropriate classroom routines for transitions between activities, for the forming of and conduct within groups, and for the beginning and ending of class.

For educationists such as VanTassel-Baska,

MacFarlane, and Feng (2006), differentiated instruction was associated with the teaching of the gifted. They looked at how teachers of gifted programmes interpreted and implemented differentiated instruction in two different cultural settings – the United States and Singapore. The teachers were interviewed directly or sent questionnaires by email. All were teachers on programmes for gifted students. Both groups reported on how important it was to adjust to the interests, learning styles and abilities of individual gifted students. Differentiation could be introduced in terms of content, instruction and assessment. Varying the instruction and including hands-on activities and technology in the programme allowed the students to explore, reflect and evaluate their own understanding and develop problem-solving skills.

## Principles of differentiated instruction

Tomlinson (1999) and Watts-Taffe et al. (2012) both listed a set of principles that guided differentiated instruction, and were the hallmarks of effective differentiated instruction.

- The teacher recognized that nobody could learn everything and thus designed instruction around the essentials, ensuring that these were understood by all students.
- The teacher understood that, while all students had the same basic needs, there were important differences in their learning that needed to be accommodated.
- Appropriate instruction could not be given without regular assessment that indicated where the student was and how he or she was progressing. This assessment could be informal but, on occasions such as at the end of a unit, the assessment needed to be more formal and the results to be recorded. It was important that the focus of the assessment was on helping the students to grow rather than on judging them.
- The teacher modified the content, teaching/learning process and target product to suit the needs of different groups of learners where appropriate. There would be times when the whole class worked as a unit and times when the teacher varied one or more of the components of the lessons to meet the needs of different learners.
- Students were given respectful tasks as detailed above. (See also Algozzine & Anderson,

2007.) The allocated tasks varied in relation to each student's readiness, led to the growth of the student, involved the development of essential understanding and skills that grew in difficulty as the student progressed and were interesting, important and engaging for the student.

- While the teacher orchestrated the learning, the students had some influence on the processes. The teaching/learning process was a collaboration led by the teacher and the students could influence classroom routines and rules.
- Not all the students would meet the group norms in everything and some might exceed them. While recognizing the group norms, the teacher also recognized the strengths and weaknesses of individual students and worked to help the students improve in areas of weakness as soon as possible.
- Finally, the teacher and students worked flexibly together, reorganizing groupings as circumstances changed, using different strategies as appropriate. Sometimes everyone used the same material, sometimes different students used different materials. Sometimes the teacher decided, sometimes the decisions were taken by the students.

Differentiated instruction was equally applicable to all learners. It emanated from the principle of maximising the potential of each and every student across the whole spectrum of abilities (Law, 2013). It took into account constructivist learning theory, learning styles and brain development and combined these with the research that had been done on learning readiness, interest and intelligence and their influence on motivation, engagement and academic growth (Watts-Taffe et al., 2012). Differentiated instruction allowed students to access the same curriculum through different entry points, learning tasks and outcomes aligned to their learning needs. Watts-Taffe et al. (2012) reported that there was correlational evidence that showed that certain types of instruction worked better with some students than others and differentiated instruction allowed for such differences.

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Differentiated instruction was an approach to instruction that incorporated a variety of instructional strategies that could be used to respond to the unique needs of individual students (Watts-Taffe et al., 2012). Watts-Taffe et al. (2012) listed nine categories of diversity: gender, ethnicity, language, race, socioeconomic status, and physical, mental, emotional and intellectual differences. Brualdi (1998) stated that every child was born with Gardner's seven intelligences but each individual developed them in different ways and thus came to the classroom with their own individual set of strengths and weaknesses. Everyone found different forms of presenting information easier or more difficult than others. They thus had different learning styles. Brualdi (1998) suggested that each class of students had such a range of learning styles that it might be difficult for a teacher to accommodate all of them all the time. Nonetheless, the teacher could help students use their areas of strengths to offset areas of weakness. For example, students who were more visual could be encouraged to develop graphical representations of ideas.

To put it another way, every child was different and the most effective instruction was targeted at the particular child. Differentiated instruction could not depend on school texts or commercial text books. The skilled teacher needed to draw on their understanding of learning,

their knowledge of their own students, and their ability to choose the appropriate materials and methods for each student.

## Aspects of differentiated instruction

Teachers could differentiate in many ways. First, the content could be differentiated to meet the needs of individual students. The difficulty of the material or content could be varied to match the ability of different students or it could be varied to cover the different interests or backgrounds of the students.

A class teacher might recognize the different interests and abilities of students in a class and still plan to have all students learn a similar set of skills or knowledge by the end of the lesson. What the

teacher varied could be the material used by different groups of learners differentiated by content or difficulty. For example, some might look at material focusing on soccer while others looked at a text on swimming resulting in a differentiation of content.

Second, the learning processes could be varied. The learning could be differentiated according to the different learning styles of the students. Some might prefer to work alone and at their own pace. Others may be happier and more responsive in groups of different sizes. It was also important for the teacher to give regular practice in the various strategies, such as drawing comparisons between the new and the familiar, to ensure that the students became competent users (Watts-Taffe et al., 2012). For homework, different students might be given different follow-up activities leading to a further differentiation of the process. In this way, the teacher provided for a differentiation in the learning processes.

Third, different students could prefer different environments. The most important thing was that the environment be varied to enhance the learning of each and every child because the teachers cared about every child (Algozzine & Anderson, 2007; Watts-Taffe et al., 2012).

Fourth, there could be differentiation in how students demonstrated their learning. Some might be asked to write a brief report on a match while others were asked to develop a full news item. They were all being asked to develop reporting skills but with different content and with different complexity. Algozzine and Anderson (2007) suggested that students could be encouraged to take on the responsibility for their own learning by allowing them to choose from a list of possible end products they could develop and which could be used by themselves and their teacher to assess their learning. The product would then not just represent their learning but also their personality and style. They could be encouraged to make a contract with the teacher regarding what product they would produce. This helped make them responsible for their own learning. In this way, the learning was made more relevant to the student through a differentiation of product.

Watts-Taffe et al. (2012) emphasized that the four dimensions (content, process, environment and

product) of differentiated instruction could not be completely independent of each other. Invariably, changing one would have an effect on the others, which, they felt was the way it should be. Fernandez (2015) also emphasized the interplay between the dimensions and suggested that it was better to look at tasks holistically. Moreover, the differentiation could also be based on complexity, pacing, the amount of scaffolding provided and the levels of abstract thinking involved.

Scigliano and Hipsky (2010) believed effective differentiated instruction had several benefits. They argued that it gave students a sense of self-efficacy and empowerment as it included every child in the learning process. As a result, the students had a better understanding of the curriculum content, resulting in increased academic achievement.

Tomlinson (1999) argued that what was taught in a healthy classroom should be relevant to the students and things familiar to them and support them in understanding their lives at that time and in the future. Moreover, what they were taught could not simply be academic exercises but had to be the authentic application of the subjects they were learning. Thus, it needed to be of immediate relevance and usability and empower the students for both their present and future lives.

Tomlinson (1999) noted that for differentiated instruction to work, the teacher needed to be clear about the central understanding or skills that were being targeted before deciding on the differentiated activities for different students. Simply giving a variety of miscellaneous activities did not help the students learn the required skills. Two things were required for a great class: engagement and understanding. Students needed to be engaged in, to enjoy, the activities. However, they also needed to learn something from those activities, something that was meaningful and that they understood in depth as a result.

## **Language focused differentiated instruction**

Baecher, Artigliere, Patterson, and Spatzer (2012) reported that the number of students classified as English Language Learners (ELLs) was increasing in the United States. ELLs were defined as students for whom English was not their main language of

communication at home and who had difficulty using English in school. It had been estimated that, by 2025, one in four public school students in the United States would be ELLs. Most of them would be native-born American citizens. Already half of ELLs were second or third generation Americans. Baecher et al. (2012) noted that, at the higher grade levels, helping the ELLs was even more difficult as the students at that level moved from teacher to teacher as they moved from subject to subject, making it more difficult for teachers to get to know their backgrounds. Some of the factors affecting the ELLs included the level of literacy in their first language, the length of residence in the United States and their familiarity with academic English. The authors suggested that one way of helping the ELLs was through a differentiated instruction approach.

Echevarria, Frey, and Fisher (2015) reported that some of the ELLs in the United States schools felt ashamed to speak their first language and, because of the language barrier, felt they did not belong in the school despite some having spent most of their education in such schools. Without help, these students would continue as English Language Learners throughout their education. The authors agreed with Baecher et al. (2012) that one approach to supporting the ELLs was differentiated instruction. When the ELLs needed more support, they could be put into their own special groups. At other times, they could be put in mixed groups so that they learnt from the other students as well.

In such classes, it was important to value and build on the diversity. The class teacher needed to develop a class environment that drew on the different ways of learning, behaving and using language. The class should include not only the students but also their language and culture. It was important to remember that a lack of proficiency in a language did not mean that students were unable to think given the appropriate support. These students needed more than just new vocabulary. They also needed support in the use of academic language – oral language, grammar, genre knowledge and other literacy skills.

Differentiated instruction sought to help, within a class, subgroups of students who were having difficulties (Baecher et al., 2012). It involved making

adjustments to the main activities of a content lesson to meet the particular language needs of different subgroups. Baecher et al. (2012) pointed to Tomlinson's framework for differentiating by content, process and product (Tomlinson & Allan, 2000) but cautioned that this was mainly used to differentiate instruction to match the learning styles of students rather than the language skills of the students. However, the principles of differentiated instruction could be used to help ELLs in content classrooms.

Teachers were generally used to planning lessons with a single set of objectives, activities and closure. The principles of differentiated instruction brought that process into question as the teacher needed to provide several pathways to meet the different learning needs of the different students. In the case of ELLs, the differentiation could take place with regard to language. Baecher et al. (2012) suggested that there were 10 principles to follow:

1. Know the learners' language strengths and weaknesses. These would change over time so teachers had to monitor the students' progress.
2. Set a common content objective but differentiate the language objective. Simplifying the language did not mean that the content should be simplified.
3. Make the differentiated instruction manageable for the teacher. If too much was demanded of the teacher, the teacher would fail to put any of the differentiation into practice.
4. Use differentiated instruction to make learning more manageable for learners. For example, simplifying content might not be the way to help if language was the problem.
5. Identify the basic activity for the high ability groups and then level down. It was easier to start with learning activities suitable for the higher levels and adjust for the lower ability groups by adding the scaffolding they needed. As far as possible, the learning goals should be the same across the whole class.
6. Provide the differentiated instruction yourself. Having a higher ability student do it did not do any favours for either student. One was working below their standard while the other was often simply copying from the higher ability

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- student. Once the groups were set to work, the teacher could work with a group to provide support for the lower ability students or further challenge for the high ability students.
7. Use flexible grouping. There was no reason for students to feel that they had been labelled in some way. The teacher should set up the grouping, sometimes purposefully mixing lower and higher ability language users, while noting that language skills might not always correlate with content knowledge or understanding. On other occasions, the teacher might want to have homogeneous groups according to language to focus on a particular language skill.
  8. Offer alternative activities. Wherever possible, the teacher could offer some choice of activity, thus allowing students to choose activities they felt appropriate to their level.
  9. Remember that language was needed to express complex thought. Students without the language resources might have difficulty expressing complex concepts in English even if they understood them.
  10. Allocate the same amount of time for differentiated activities so that different groups did not finish at different times. Also consider having sharing across groups to build up the class community and to provide a meaningful purpose for the group activities.

## Starting differentiated instruction

Tomlinson (1999) believed that starting differentiated instruction could be demanding for a teacher. She recommended that the teacher start slowly and develop a full programme step by step. The first step was for the teacher to examine their own thinking about how the needs of individual students should be approached. For example, was it better for the teacher to do all the work in the classroom or should the students do the greater part of the work? Do students all learn in the same way?

The next step was to start small. The teacher could start by getting the whole class to practise the types of activity they would later do in groups. Later, they could be asked to do the activities in their groups. After some practice, the work of the groups could be differentiated in some way. This process could slowly introduce the students to working on their own while the teacher worked

with other groups as well as introduce them to the kinds of activity that the groups would do. While the development would be designed to move at a pace suitable for the students, it was, however, important that the teacher commit him or herself to the step-by-step development over a given timeline (Tomlinson, 1999).

When introducing a new type of activity, it was good for the teacher to take some time to envision how it would proceed. Tomlinson (1999) likened this step to the actions of athletes who spent moments before a big race visualizing how it would be run. Once the activity had been tried, it was equally important for the teacher to reflect on how it had gone, what had succeeded, what had not and what adjustments were needed.

Once differentiated instruction was established in the classroom, the teacher still needed to ensure its success. This could be done in several ways such as by the teacher talking to the students about how they had varied interests, varied learning styles and different strengths and weaknesses to help them understand why the teacher gave students different activities to do. Moreover, the students could be involved in the setting up of classroom routines so that they became owners. The teacher could hand over some classroom tasks to the students such as keeping the classroom tidy, handing out and collecting in work and ensuring that the work of every student was properly filed. In this way, the students were involved in the process and the teacher's load was lightened (Tomlinson, 1999).

The proper filing of student work was crucial as it was even more important than usual that the teacher in a differentiated classroom stay on top of how individual students were progressing so that they could be always given appropriate activities. The teacher needed to demand quality from the students while, at the same time, giving them work that pushed them into developing new skills (Tomlinson, 1999).

Wehrmann (2000) similarly recognized that starting differentiated instruction could be daunting for a teacher who was already busy planning, teaching and marking. However, the teacher could consider a mix of whole class instruction and differentiated instruction, a mix that mounting evidence indicated was important (Watts-Taffe et al., 2012).



Wehrmann (2000) thus suggested that teachers started with baby steps. First, she advised, they should start with some small changes to the content for just a few of the students. Second, they should make the new activities different and not just more of the same. For example, it was not a good idea to give the competent group 50 multiplication problems to do while the lower ability group were only given 20. The higher ability group might begin to feel that they were being punished for their extra skill. Third, when planning, the teachers should ensure that the tasks were sufficiently demanding for the higher ability groups and scaffold the tasks for the weaker ones if necessary. In this way, the process could be differentiated while the content remained the same. Fourth, the teachers should find out the students' passions and interests so that they could link tasks to individual interests. Linking the products of learning to the students' real world made learning easier for them and kept them engaged.

When talking to teachers, Fernandez (2015) defined differentiated instruction as 'good teaching'. Most teachers were already catering to some extent to the differences among the students they taught, albeit probably unplanned. She suggested that this would be a good place to start. The idea might seem daunting at first but, by building on what they already did, these teachers could become expert practitioners by focusing on the differences in a more structured manner. The teachers could start from where they were and build up routines and materials incrementally. There was no fixed process beyond the teacher working to further develop their skills.

Scigliano and Hipsky (2010) agreed that setting out to differentiate instruction could be daunting. They also proposed that teachers should start small, start with something that they were comfortable with and then move on to add new forms of differentiated instruction. They used the analogy of the teacher being the circus ringmaster in charge of the stage. They pointed out there were three areas to consider: content as set by the curriculum, process or the ways in which the students would learn and, finally, the product of the students' learning such as an activity or paper. These

had to be matched to the student's profile – learning profile or style, ability and interests.

The learning style of the students could be based on Gardner's multiple intelligences (Brualdi, 1998). Each student's style could be built up by observing the student, through student interviews or with the use of multiple intelligence surveys. Based on the intelligence profile, the student could then draw up a learning contract with the teacher with the student's preferred intelligence given priority (Brualdi, 1998; Scigliano & Hipsky, 2010). The contract would include what facilities the student would need to use and what was expected to show mastery of the content to be covered.

The second area to be taken into consideration was the different abilities of the students. Scigliano and Hipsky (2010) suggested that it was possible to work on the same knowledge, understanding or skill area with the whole class but to differentiate the difficulty level for individuals based on their current ability. The first step was to

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establish the prior knowledge of each student in the area to be looked at. That could be done in various ways – through an oral quiz or a list of questions requiring short answers. For students who showed little

knowledge or understanding, the teacher needed to give them learning choices that helped build up their knowledge and application. For those with a deep knowledge or understanding, the teacher needed to give them opportunities to analyse, synthesise and evaluate. The differentiation could be done through a menu of activities from which the students could select a few.

A similar approach could be made to accommodate interests. A menu of activities could be drawn up that matched the students' areas of interest in the topic being studied. For example, if the topic was about Singapore, one activity that might be available to students interested in music would be the collection and analysis of the words of National Day songs.

The first step towards a differentiated classroom was the preparation of student profiles. These profiles contained, for each individual student, infor-

mation on family and language background, preferred learning styles, interests and hobbies. They also included grades from major examinations as well as regular classroom assessment. The profiles were central to planning for the teacher (Algozzine & Anderson, 2007). They helped the teacher plan flexible groups and lessons that took into account the varied needs of the students. Watts-Taffe et al. (2012) and Brualdi (1998) emphasized the importance of keeping these profiles up to date as students advanced at different rates in their studies and changes could occur in their interests and personal background. Brualdi (1998) pointed out that the assessments could vary from the teacher regularly sitting with each small group of three to four students to check on their progress, to the individual student being able to present their learning using the method they found most comfortable in line with their areas of strength.

To introduce the class to using differentiated approaches, the teacher could start by having a few lessons in which there was a choice of, for example, six activities from which the students could select two. The activities would require different skill levels but the students would not be made aware of that. In this way, they would all be required to demonstrate their skills in the particular area with choices about how that was to be done (Algozzine & Anderson, 2007).

A further step involved setting differentiated project work at the completion of a unit. Students could choose the project through which they would demonstrate their learning and could choose to complete the project on their own, with a friend or in a group according to their preferred learning style (Algozzine & Anderson, 2007).

Algozzine and Anderson (2007) believed that the important aspect of this approach was that, as well as learning to meet the required performance criteria, the students were also making their own decisions about how they would learn. In their study, students enjoyed flexible grouping, choice of tasks, increased time to read material of their choice and a larger set of materials to choose from. Students not working directly with the teacher could move through a relevant range of materials and activities placed in the classroom (Watts-Taffe et al., 2012). The initial stages might involve some trial and error but, after regular practice, students could get used to the approach and know what

was to be done at different times and where it was to be done.

When teachers differentiated instruction in the classroom, they had to be sensitive to the possibility that some students might feel left out of an activity. Wehrmann (2000) reported how, in her own teaching, when the higher ability students got excited over a project, she gave them the freedom to do their own special project. Later, she realized that the other students felt they had been left out of the chance to do something interesting. It was important to ensure that all the students felt that their learning was as important to the teacher as that of everyone else.

Once the teacher was more comfortable with differentiated instruction, the final stage in the process was to plan differentiation across all three areas – content, process and product. Wehrmann (2000)'s students impressed her at the end of that first year when, in groups, they contracted with her to take on different projects within a specified time frame. Among the submitted projects were a 22-page science fiction story, and a storyboard illustrating the history of linguistics.

## Examples for beginning

Setting material at various levels of difficulty, with different scaffolding, through different grouping over different time periods, while taking into account the interests and learning styles of the students could be overwhelming for a teacher at first. There was a lot to do, a lot to get used to. Inevitably, there would be the temptation to revert to the teaching mode that had been used previously perhaps with some feelings of guilt that such teaching would not meet the needs of all students. Tomlinson (2000) felt that teaching without differentiation undermined the whole idea of quality teaching and fell short for both teachers and students alike. Differentiated instruction was hard work for the teacher but then good teaching had always been hard work.

As with all teaching, looking at the teaching of others might suggest ideas that could simplify complex classroom procedures. Brimijoin, Marquissee, and Tomlinson (2003) reported on several quick ways of simplifying activities when using differentiated instruction. One teacher set up a simple sys-

tem to get feedback from the students on the concepts the class had been working on. Using the car windscreen as a metaphor, she asked how many were as clear as glass, how many had insects on the windscreen and how many had mud on the windscreen. Based on the feedback, she asked the students to do one of three different tasks that, for example, took those ‘as clear as glass’ to a higher level and provided help for those who had ‘mud on the windscreen’. The students had taken part in setting up the feedback system and it helped them understand the purpose of differentiated instruction.

The same teacher had provided another simple system for when the students were carrying out the allocated tasks in groups. Each group had a set of three differently coloured cups. If the students in a group placed the red cup on the desk, the teacher knew that they felt they could not go on without help. If they placed the yellow one on the desk, it signalled that, while they had questions, they were not blocked. The green cup signalled the students were fine and did not need help (Brimijoin et al., 2003).

The teacher collected data on student progress at three different stages using formal and informal processes. She collected data before beginning a unit of learning to find out what students already understood. She also collected data of various kinds during the unit to check on progress and then adjusted where necessary. Finally, at the end of the unit, she looked at what had been achieved against what had been planned for.

Closer to the state examinations, the teacher asked the students to look through their books and decide on topics where they felt least confident. She then set up study centres to cover various topics with the help of student ‘experts’ who helped their peers.

The teacher credited the use of pre-assessment, self-assessment and on-going assessment to help her differentiate instruction as the reason for the general improvement in scores in the state exams. She kept running data in a spreadsheet and, in individual consultation sessions, was able to guide

the students to set targets for themselves. With the knowledge she had of each student, she was able to build on what they already knew. The self-assessment processes not only informed the teacher but also helped the students understand their own strengths and weaknesses and cooperate with the teacher in developing their skills.

Watts-Taffe et al. (2012) suggested several teacher actions that could be used in differentiated instruction:

- Regular, varied formative assessment to keep student profiles up to date.
- Modifications of the content, process, product and environment or any permutation of the four.
- Use of regular small group activities.
- Use of tasks matched to the students. This might involve working with homogeneous small groups on some occasions or heterogeneous groups on others.
- Responsibility released gradually to the students.

In allocating differentiated tasks, the authors suggested that the teacher needed to make the expected outcome for each group very clear, check the student profiles to see the relative strengths and needs of each student, examine the range of instructional strategies that could be used in the tasks and then offer the differentiation that was appropriate to different students (Watts-Taffe et al., 2012).

## How early should we start differentiated instruction?

Even if it is accepted that differentiated instruction can help students with different needs, one question that remains is at what level differentiated instruction should be introduced. Piasta (2014) argued that assessment driven differentiated instruction should start during early childhood education. Even at that early stage, there were differences between students.

Using it as an example, Piasta (2014) pointed out that developing an understanding of the ‘alphabetic principle’ was a crucial step in learning to

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*Each group had a set of three differently coloured cups. If the students in a group placed the red cup on the desk, the teacher knew that they felt they could not go on without help.*

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read and write as evidenced by several research findings. However, children developed an understanding at different times and needed differentiated support. As with all differentiated instruction, the first step was to see where the student was in terms of the targeted skill. In this case, this involved checking the alphabet knowledge of the child by asking them to name the 26 letters. While the result could be a simple count of which of the 26 letters the child had got right, a more useful approach was to test particular letters that were known to cause difficulty for many students.

Once the assessment was done, the second step, was for the teacher to consider which letters and sounds were understood and which caused confusion for different students. On this basis, the teacher could draw up a plan of what letters to teach to which small groups of two to five students. The best approach was to start with those letters in the targeted set that were known to be easier to learn to help consolidate the alphabetic principle for the students. The reason for using small groups to work with was that research had shown that learning was better in small group instruction than in whole class or individual instruction.

The third step was to plan the instruction, which should be fun and engaging and set in authentic contexts relevant to the students although it could also be intentional and explicit.

## The role of the school leadership

The school leadership played a crucial role in the adoption of differentiated instruction. Throughout the process, Tomlinson (1999) felt that the school leaders would need to support the teachers by:

- *making time to plan differentiated lessons;*
  - *creating differentiated curriculums when curriculum guides are revised;*
  - *providing opportunities to visit differentiated classrooms;*
  - *giving access to a wide range of learner materials;*
  - *making them feel safe in trying a new approach in their classrooms, with no fear of judgement if there is noise or clutter for a while;*
  - *giving meaningful, targeted feedback about their work with differentiated instruction;*
- *providing networks of mutual support and encouragement for teachers who are early subscribers to the initiative so that they do not feel alone if they are 'punished' by colleagues who resist the change; and*
  - *expressing clear appreciation when they have done a good job, or even taken a risk that was less than successful. (Tomlinson, 1999, pp. 113-114)*

Tomlinson et al. (2008) reported on the journey of two very different schools towards the introduction of differentiated instruction throughout the schools. One was a highly successful elementary school that sought to make further improvements and the other was a secondary school that was running into difficulties and wanted to break down the social barriers that were undermining the work of the school. While the journeys of the two schools were very different, the major thing they had in common was the belief and strong support of the school leadership over a period of a number of years. The studies covered the successful introduction of differentiated instruction into the schools, reporting how the school managements worked closely with students, parents and teachers.

Despite the successes of differentiated instruction, Algozzine and Anderson (2007) felt that there was still a need for further studies to check whether the approach they described was viable for the full range of students with different backgrounds, abilities and learning styles. They felt that differentiated instruction alone was not enough to solve all the issues for students with low performance levels. However, they felt that, combined with regular formative assessment, responsive educational programmes for students at risk and positive school, home and community support for the students, this approach was the most likely to allow teaching professionals to be fully responsive to learner needs. Some of these concerns of Algozzine and Anderson (2007) were met by the detailed studies of the two very different schools in the USA reported in Tomlinson et al. (2008) and mentioned above. The issues and concerns are further discussed in more detail in the next section.

## Is differentiated instruction practical?

Despite the arguments offered, not everyone agrees that differentiated instruction is a neces-

sary or even practical option. The discussion is inextricably related to whether students should be streamed, and whether classes should be homogeneous or heterogeneous. It could be argued that, if classes were homogeneous, there would be no need for differentiated instruction but, if they were heterogeneous, the demands of differentiated instruction on the teacher would be too heavy to be sustainable. The arguments against streaming include the belief that it has caused lower placed students to underperform and the tendency for streaming to correlate with ethnicity and socioeconomic status.

Complicating the issue is the variety of ways that grouping students can take place and the variety of terms used. Hornby and Witte (2014) described different types of between-class and within-class grouping. Between-class grouping included tracking, streaming, banding and setting. 'Streaming' was the term used in the UK for what was called 'tracking' in the USA. It involved placing students in a year or grade according to their scores in an examination. In its strictest form, the students were simply placed into Class A through to Class F according to their examination scores. An alternative to this was 'banding' in which students were placed in general bands such as high-ability, average-ability and low-ability bands. 'Setting' was a system for placing students in classes for specific subjects according to their ability in that subject but in a general mixed-ability class for most sessions. Within-class grouping involved putting students into temporary groups for particular purposes within mixed-ability classes (as in differentiated instruction).

Between-class grouping was based on the belief that such grouping allowed for the creation of more homogeneous classes, which allowed for instruction to be adjusted to meet the needs of each class and thus maximize the learning of the students. Hornby and Witte (2014), however, reported that reviews from the USA and the UK had cast doubt on the effectiveness of such between-class grouping. A Dutch review had found that high-ability students benefited from such groupings but that low-ability students either did not benefit or performed worse. Other studies indi-

cated negative effects on the motivation and attitudes to school among low-ability students in streamed classes. A study of setting in the UK indicated similar issues with the subject sets still having a fairly large range of student ability and, again, the high-ability students benefiting more from setting than low-ability students. No overall advantage for setting over mixed-ability classes was found. Summarizing research findings, Hornby and Witte (2014) indicated that grouping did provide some advantage to high-ability groups, probably because of the teachers and the curriculum involved. However, students not in the high-ability streams lost out with lower achievement, increased behavioural problems and low self-esteem.

Grouping used in Singapore was a blend of the approaches discussed by Hornby and Witte (2014) (Curdt-Christiansen & Silver, 2013). 'Subject-based banding', the equivalent of what Hornby and Witte (2014) called 'setting' was used in primary schools usually from Primary 3. On entry into secondary school, students were 'banded' into four broad streams – Special, Express, Normal (Academic) and Normal (Technical) (Liu, Wang, & Parkins, 2005; Silver, Curdt-Christiansen, Wright, & Stinson, 2013). Some schools then placed students into classes within those bands according to their ability thus using 'tracking' or streaming as defined by Hornby and Witte (2014).

Duflo, Dupas, and Kremer (2009) summarized the arguments for and against streaming (tracking):

*If teachers find it easier to teach a homogeneous group of students, tracking could enhance school effectiveness and raise test scores of both low- and high-ability students. But if students benefit from learning with higher-achieving peers, tracking could disadvantage lower-achieving students, thereby exacerbating inequality. (p. 64)*

However, they pointed out that it was quite difficult to get convincing evidence as the schools that tracked (streamed) were often different in other ways from the schools that did not, thus making it difficult to establish cause and effect. In order to avoid this problem, they based their study on a

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group of schools in Kenya that had just received new funding allowing them to employ another teacher and thus divide up large (average of 83 students), heterogeneous classes into two for the first time. Approximately half the schools divided the students according to ability while the others placed students randomly. The results of the study showed that all students regardless of ability benefited from being grouped according to ability. The benefits were still apparent one year later. Duflo et al. (2009) reported, however, that there were a number of factors present that might prevent the conclusions being applied to other situations. These included the very large size of the classes involved and the difference in attitude of the regular teachers and those newly employed.

In contrast, in a study of within-class ability grouping in reading classes in the USA, Lleras and Rangel (2009) found that lower ability students learnt substantially less in grades K to 3 than those not grouped by ability. The gains of the higher ability students through being grouped by ability were far smaller than the losses of the low ability students.

van Houtte (2004) investigated the effect of streaming on student progress in Belgium, which she suggested had fewer of the research problems caused by the variety of practices and definitions of streaming (tracking) found in the USA. This was because the system of streaming in Belgium was mandated by the government with students divided between general education and vocational schools. She suggested that the purpose of the streaming was not only to accommodate the different abilities of the students but also to prepare the students for different futures. Her results indicated that students in the lower streams achieved less even after taking ability into account and that teachers in the vocational schools were less academic oriented than those in general education schools. She believed that the teachers' lack of academic orientation was a factor in the poor performance of the lower placed students. She pointed to the irony that, despite the lack of academic demands on students in the lower streams, the students were still judged by academic oriented examinations.

Delisle (2015b) thought that differentiated instruction appeared to have some benefits:

- It started from what each student knew and

what each needed to learn.

- It accommodated multiple activities for students to demonstrate their knowledge and understanding.
- It supported teacher and student in adding depth and complexity to their teaching/learning.

Delisle (2015b) believed that differentiated instruction was, however, very difficult to implement in heterogeneous classrooms. He reported one study in which a group of teachers had been given extensive professional development in the implementation of differentiated instruction. Three years later, a follow-up study on the impact of differentiated instruction in their schools had to be abandoned when the researchers found that none of the teachers were actually implementing differentiated instruction. Other studies reported teachers overburdened with having to make multiple sets of different materials while a clear majority of teachers felt that differentiated instruction was either somewhat or very difficult to implement.

Delisle (2015b) argued that the demands on teachers made by differentiated instruction were too difficult to meet. It was well-nigh impossible to meet all the learning needs of all students in a large class with a range of abilities and behaviours, with students that included gifted and average learners, English Language Learners and disruptive students. He suggested that differentiated instruction might work in situations where students were streamed so that the range of needs in a single class was more manageable. Meanwhile, teachers either abandoned the idea of differentiated instruction or felt despondent about not being able to meet the needs of their various students.

In a response to criticisms of his ideas, Delisle (2015a) pointed out that he was not against differentiated instruction per se and, moreover, he was not advocating a return to teacher-fronted classrooms. However, he felt that it was too demanding to ask teachers to respond to the whole range of learning needs found in heterogeneous classes. He added that it was important to note that some research pointed to gifted students benefiting very little from differentiated instruction in heterogeneous classes.

In a study of a programme in which two teachers worked with a class of mixed ability students set

up to bring together students of different ethnicity and ability in a detracking exercise, Rubin (2003) found that students were not always receptive to the teachers' attempts. The teachers made a conscious attempt to form within-class groups that were mixed by ethnicity and ability. However, the students did not have the interpersonal negotiation skills needed for the situation. This caused problems when students found themselves isolated in their groups because of their ethnicity or ability. Their views were not sought by the group and they were allocated simple tasks appropriate to their capabilities as judged by the group. As a result, they did not have the opportunity to learn or develop the sense of academic identity that their teachers had hoped for. For this to happen in this class, Rubin (2003) believed the students would need to be given extra support in learning the social and academic skills they needed.

Liu et al. (2005) looked at the self-concept of Singaporean students that had been placed in an academically lower class. They found that the stigmatizing effect of having been placed in a lower level class was only temporary and believed that being in a lower stream did not affect the academic progress of many of the students. Moreover, the system meant that the students in the lower stream had an extra year before taking the national (O Level) examinations allowing them to prepare at a slower pace and increasing their chances of passing. Three years after streaming began, overall the Normal (Academic) students had better self-concepts than the Express stream students. However, Liu et al. (2005) chose to look at a selection from the top 40 schools with good academic results for their Normal stream students and then only compared the Express and Normal (Academic) streams and not the Normal (Technical). These choices might have affected their results.

George (2005) proposed that the heterogeneous classroom provided a learning environment that fitted in with 'democratic goals' (p. 186), one where students learnt with others that they would need to work and live together with in the future while still achieving educational success on their own terms and at their own level. He believed that such a classroom provided opportunities for the

students to develop important social and interpersonal skills, as well as knowledge and attitudes important for success in adult life. At the same time, it allowed flexibility for the different learning needs of individual students.

In the United States, in schools where streaming was used, the advanced classes had a disproportionate number of White, affluent students. In heterogeneous classes, this problem was avoided. George (2005) felt that, even if streaming led to an improved education for a few, it did so at the cost of an education system divided by ethnicity and social class. Moreover, having heterogeneous classes removed the risk of labelling or stigmatizing students as high or low achievers and the resulting possibility of life changing classification errors. Research had indicated that, if the body of students was considered as a whole, heterogeneous classes provided for more effective peer-to-peer learning, could improve the self-esteem of all students and prepared all for future citizenship (George, 2005).

George (2005) believed that, because heterogeneous classes put less emphasis on narrow measures of ability, more emphasis was put on attitude and effort, and the students' responsibility for their own personal growth. Moreover, when students were taught together in heterogeneous classes, the distribution of teacher talent and other resources was more likely to be equitable.

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The argument in favour of homogeneous classes suggested that high ability students could be better stretched and helped to reach their full potential. In contrast, George (2005) claimed that a heterogeneous class combined with differentiated instruction could be designed to stretch all students, not just high ability students. Moreover, it allowed the high ability students to have a more nuanced perception of their own learning as against the possibility of them seeing themselves only as poor performers in a class of high flyers. Mixing with other students would give them opportunities to help others and to be helped by others, important learning opportunities for both tutor and tutee. It would also enable students to form understandings and friendships across the full spectrum of learners.

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*Such a classroom provided opportunities for the students to develop important social and interpersonal skills, as well as knowledge and attitudes important for success in adult life.*

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Having made a case for heterogeneous classes, George (2005) went on to argue that in such classes, differentiated instruction was essential to providing challenge and to catering to different interests and learning styles. No section of the class could be allowed to stagnate. Without differentiated instruction, some high achievers might get high grades with little effort, while others might become addicted to high grades rather than learning. Instead, the committed teacher would not teach in one way but would develop an arsenal of teaching approaches to ensure the interest and learning of all students, differentiating content, approach and assessment according to the varied learning needs of all the students.

All teacher-fronted classes, with little or no differentiated instruction, ran the risk of students becoming dependent on the teacher to do their thinking for them. This was not likely to prepare the students to be future leaders, independent thinkers or professionals for tomorrow. In contrast, the differentiated classroom encouraged the students to do the main work with the teachers there to help manage the classroom and facilitate the learning. George (2005) believed that only in this way could the teacher provide the range of learning experiences that matched the needs of students with different types of strengths, different home backgrounds, different experiences, different interests and different learning styles.

Even with the benefits of differentiated instruction accepted, it was still important to remember that it was hard work for any teacher to change their approach. A move from the teacher-fronted classroom to one where the individual needs of students were catered to would be difficult and demanding. It was necessary to recognize this and, while it was important for future education to move in that direction, the demands placed on teachers at any point should not be so onerous as to make them abandon the project (George, 2005).

In a response to Delisle (2015b), Tomlinson (2015) argued that teachers she worked with in the United States and around the world did differentiate in the classroom. Moreover, though they might not immediately meet all the learning needs of all their students, they did not get despondent as they knew that honing teaching skills was a career-long endeavour. They did not expect quick results.

Tomlinson (2015) felt streaming was not the solution as, where it was used, students in the lower streams were given the least experienced or interested teachers, the curriculum was less rigorous and the students were aware that they were regarded as less able and responded accordingly. Research had shown that brains were generally malleable. As a result, students who were taught as if they were smart became smarter. Further teachers who believed that students could achieve more by working hard and smart achieved better student results than teachers who believed some students were smart and some were not and little could be done about it. As a result, the students placed in the lower streams did less well than when included in heterogeneous classes.

A further issue was that, generally, lower stream classes had much higher proportions of students from low socioeconomic backgrounds and the poorer quality of the learning in those classes tended to guarantee that those students would remain poor (Tomlinson, 2015).

The best solution, Tomlinson (2015) suggested, was for the teacher to 'teach up'. The first step was to plan the lesson for the higher ability students in the class and then to provide the necessary scaffolding for the lower performing students. Where the initial activity was not sufficiently demanding of the higher ability students, the teacher needed to extend the activity to provide the necessary challenge for the students.

Differentiated instruction was not easy for the teacher. In fact, it was demanding. However, Tomlinson (2015) believed that, with the necessary support, teachers could develop the skills and attitudes necessary for the type of teaching in which each student was constantly being pushed to strive to go one more step beyond what they had already learnt.

## Conclusion

The basic tenet of differentiated instruction that each student should be treated with respect and supported in ways that best helps them develop is probably something that all educationists can accept. It is probably true that we would all like to do our best to ensure that this happens. As Tomlinson and Allan (2000) pointed out, 'All these students have the right to expect enthusiastic teachers who



are ready to meet the students as they are, and to move them along the pathway of learning as far and as fast as possible' (p. 3).

However, even with the best will, it is unlikely that any of us can guarantee to get it right every time. As Tomlinson (2015) suggested, the important thing is that we try to improve our teaching so that we ensure that as many of our students as possible maximize their potential.

The main area of disagreement seems to be whether that can be done in heterogeneous classrooms with a wide range of student ability, needs and interests. As we have seen, some have argued that it would be too demanding of teachers and that it would also mean that some of the brightest students would be held back while some of the weaker students could feel they had been left behind if the differentiated instruction was not carefully done.

Others argue that homogeneous classrooms lead to the hardening of social and ethnic stratification with the high ability classes having a high proportion of students from high socioeconomic sections of the population. The students in the lower streams are stigmatized early on and they begin to perform at the low levels expected of them. Thus, movement between streams becomes difficult. Moreover, the best educational resources, both personnel and materials, tend to be allocated to the top streams. The result is that the socioeconomic differences are maintained with a growing gap between groups.

The discussion may seem a mute one as Singapore's education has already succeeded in becoming

among the best in the world as judged by international tests. However, Lee et al. (2013) pointed out that, to improve further, we may need to focus on levelling up the performance of low achievers. We need to look at these questions for reasons perhaps best summed up in the words of Mr Goh Chok Tong in 1997 quoted at the beginning of this issue of the Digest and in the words of Ms Indranee Rajah, Second Minister for Law, Finance and Education, in her speech on the Singaporean Identity in the debate on the President's Address on 18 May 2018. There, she emphasized that Singaporeans:

*... care about our children and their future. We want every child to fulfil his or her fullest potential, to give every child the opportunity to succeed, irrespective of starting point. This is the reason why we put so much emphasis on education. (Indranee Rajah, 2018)*

Throughout her speech, Ms Indranee emphasized again and again that the hallmark of Singapore and the Singaporean education system cares about the children and their future. Singapore's education system has done well performing on international tests at or near the top. However, she points out:

*This was and continues to be driven not by a desire to top the rankings but by the desire to ensure that our children succeed, to give them the best chance to navigate the future and help them be the best they can be. (Indranee Rajah, 2018).*

Is differentiated instruction in heterogeneous classrooms the most caring way to giving our students the chance to be the best they can be?

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