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Students from diverse language backgrounds

Summary

In this first issue of Volume 5, we turn our attention to the students entering schools from diverse language backgrounds. Schools in the newly independent Singapore began life in 1965 with a student population from a rich mixture of ethnic backgrounds and home languages. Now, the children of new immigrants from a range of language backgrounds are joining the student population bringing further variety.

The mix of languages and cultures in the classroom provides some challenges for the teacher in ensuring that all students understand the content of the syllabus in the different subjects. However, with each challenge comes opportunity. Being able to communicate across ethnic and country boundaries has been identified as an important 21st century competence for both the individual and the state. This issue examines how schools and students can approach the challenges and the opportunities.

Introduction

In 1965, an independent Singapore was made up of three general ethnic groups, the Chinese, Malays and Indians. These broke down into several sub-language groups. According to the 2010 census (Singapore Department of Statistics, 2011), out of a total resident population (citizens and permanent residents) of 3,771,721, the largest ethnic group, the Chinese, came from 10 dialect backgrounds (including an 'Others' category). The second group, the Malays, came from four dialect backgrounds and the third group, the Indians, from 11 different language backgrounds. This rich mixture of cultures and languages continues to grow as new immigrants respond to Singapore's need for talent, making this city state a place where the 21st century competencies of global awareness and cross-cultural skills become essential. The question is then about how the schools will cope with this range of differences and turn them into opportunities. The views of some researchers on this topic are discussed in this issue.

In 2011, the Singapore Ministry of Education published online a *Framework for 21st Century Competencies and Student Outcomes* (Ministry of Education, 2011). It began:

> *Globalisation, changing demographics and technological advancements are some of the key driving forces of the future. Our students will have to be prepared to face these challenges and seize the opportunities brought about by these forces.* (p. 1)

Among the 21st century competences required for that future, within the area of Civic Literacy, Global Awareness and Cross-Cultural Skills, the Ministry listed 'The student can work with others from different socio-cultural groups in Singapore and beyond' (p. 4). This issue of the Digest looks at the demographics of today's classroom and how that might affect the teaching and learning that takes place.

Quality with Equity

Schleicher and Zoido (2016) pointed out that achieving better performances for all students irrespective of socioeconomic status, gender, country of origin or home language was a goal for all member economies of OECD. It was not a lofty ideal. Rather it was a policy set to achieve better prosperity and well-being for all. However, it was not easy to reach the ideal. While it was possible to look at the successes of other economies, it was not possible to simply transfer policies from one context to another. Any borrowing had to be adjusted to its new context. While the authors focused more on socio-economic questions for illustrative purposes, they emphasized that other questions – gender, country of origin and home language – were of equal importance. For this issue of the Digest, country of origin and home language are of immediate concern as we look at students with differing cultural

and language backgrounds.

As a guide to their analysis, Schleicher and Zoido (2016) suggested that it would be useful to look at possible policy approaches to improving equity across a particular education system through the use of a two-dimensional table. The first dimension was policy scope, i.e. the policy could be focused on the whole system, on individuals or on given schools. The second dimension was policy instrument, i.e. it could be based on student background or on student performance. Thus, a policy could focus on all individuals (scope) who spoke a particular home language (instrument). Alternatively, the policy could cover training for all teachers in the system (scope) regarding helping children with language problems within science classrooms (instrument).

Naturally, individual students might have different levels of interest or motivation and this would affect their learning. However, when groups of people of the same trait had the same school difficulty, it was likely that they were disadvantaged in some way. Results from the Program for International Student Assessment (PISA) suggested that it was possible to combine equity with quality, and that working towards all having equal education opportunities did not necessarily hold back a system from making progress overall. The authors gave the examples of Mexico, Turkey and Germany that saw their students' Maths results improve between 2003 and 2012 while the measure of equity in the three countries also improved. Across the same years, the percentage of the total number participating in PISA that were immigrants to their respective countries rose from 9% to 12%, indicating a move towards equity. At the same time, the academic gap between them and other PISA candidates narrowed, indicating their improved performance.

Among other things, the results of PISA had shown that resources were an important element in the success of schools. It was important therefore that all schools be resourced (equally) well. This included in terms of human resources, and thus education systems needed to consider schemes to attract well-qualified, experienced teachers to disadvantaged schools.

Schleicher and Zoido (2016) pointed to the advantages and disadvantages of grouping and banding but, overall, they felt the disadvantages were greater. They suggested that banding students removed the advantages of weaker students learning from their peers. They also pointed to the tendency for better performing students to be given better qualified teachers, a tendency that resulted in an even larger ability gap. A third disadvantage was the tendency for the weaker students to become stigmatized and disengaged. (See Kiss & Mizusawa, 2018, below, regarding how students with weak language skills might be sitgmatized as weak learners.) Some countries such as Poland had seen an overall improvement in standards after deferring banding to much later in school. In New Zealand, spaces had been created in the timetable for students to proceed through some subjects at slower or accelerated speeds depending on their ability in those subject areas, thus avoiding the need for banding while allowing students to progress in different subjects at different paces.

One further policy that had been shown to be useful was involving parents (particularly, immigrant parents) in the education of students. Through activities and materials organized by the schools and local organizations, parents learnt more about what was being done in the schools and how they could support their own children. At the same time, the school and the community could learn more about the students' family background and home culture and offer support where it was needed.

A multi-ethnic Singapore

Even at independence in 1965, Singapore was already a multicultural society with its population originating from China, India, Malaysia and many other parts of the world (Chong & Cheah, 2010). In 2016, of the main groups, the Chinese formed the largest at 74.3% of the resident population (citizens and permanent residents) followed by the Malays at 13.4% and the Indians at 9.1% (Singapore Department of Statistics, 2016b). Non-residents made up close to 30% of the total population.

Singapore has four official languages, one for each of the three main groups (Mandarin Chinese, Malay and Tamil) and English. While any of the four languages can be used in official communication, English has become the dominant language, espe-

cially where there are representatives of the different groups present. It has also become the main language for international trade and communication. Since 1983, all students have been required to take two languages at school: English is the medium of instruction in almost all subjects and students are also required to study their official Mother Tongue, i.e. one of the other official languages linked to the student's ethnicity. (English cannot be considered a Mother Tongue as noted by Dixon, 2005.) The Mother Tongue is decided based on the father's ethnicity and not on whether it is the main language spoken at home. This leads to the possibility that a child entering school may be required to develop skills in two new languages, i.e. two languages not spoken at home.

At the time of independence, almost all ethnic Chinese spoke a Chinese dialect other than Mandarin as a home language, only 60% of Indians spoke Tamil and only 70% of the Malays spoke Malay as a home language (Dixon, 2005). In the early days, there were Chinese, Malay and Tamil medium schools as well as English medium schools. However, the enrolment for Chinese, Malay and Tamil schools dropped resulting in many becoming no longer viable. It was in response to this trend, that the bilingual system of 'English plus one' was introduced (Hornberger & Vaish, 2009). While English was seen to have an economic value and became a common language across all groups, the Mother Tongues continued to represent Singapore's Asian roots and its commitment to the equality of all the ethnic groups (Wee, 2014). The Indians continued to be a diverse group and eventually Indians from an Indo-European language background (Hindi, Punjabi, Bengali, Urdu and Gujarati) were permitted to learn these languages as their Mother Tongue but outside the official school system. Hornberger and Vaish (2009) reported that the government provided examinations in these languages but not the classes, which took place at the weekends.

Hornberger and Vaish (2009) pointed out that many classes in Singapore included students from different language and ethnic backgrounds with the result that teachers used English as the common language in the classroom. However, students sometimes responded in Singlish, a local variety of English that was generally disapproved of officially. Teachers were quite likely to respond to the Singlish contribution without commenting on the student's use of language. Their aim was to facilitate the classroom discussion and not dissuade students from contributing. Hornberger and Vaish (2009) noted that Singlish was often blamed for what was described as the low standards of spoken English in Singapore. However, it was also seen as something quintessentially Singaporean by many and so represented 'being Singaporean' as well as or even better than the Mother Tongues. (Lim, Pakir, & Wee, 2010, noted how Singapore English or Singlish was often used by the young men doing National Service to communicate with each other as it cut across ethnic and socioeconomic lines.) Hornberger and Vaish (2009) suggested that allowing some use of the Mother Tongues and Singlish in the classroom could give some students the resources they needed to better access English and improve their overall language skills.

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Dixon (2005) pointed out that the interdependence theory of second language acquisition suggested that an individual needed to have a strong base in her or his first language to act as a firm foundation for achievement in the second. This theory led to the belief that a robust bilingual education system should provide for the development of academic skills and concepts in both languages in parallel. Of the two languages, the development of the first language of the child was believed to be the more important in laying the necessary foundation for future development. This, and the belief that every child had the right to learn their own culture and use their own language, was a central tenet in education systems such as that of New Zealand (Guo, 2017).

Dixon (2005) pointed out that this view of language development had been challenged by the success of Singapore's education system where, despite the use of a second language as the language of instruction, Singapore's students were among the best performing in the world as measured by international tests such as PISA.

As an indication of the success of Singapore students in developing solid reading skills in English, Dixon (2005) pointed to the test results of the 35-country International Association for the Evaluation of Educational Achievement (IEA) Progress in International Reading Literacy Study (PIRLS) in 2001. This reading test was for 10-year-olds and required them to read for literary and informational purposes. Only 43% of Singapore's students who took the test that year indicated that they 'always' or 'almost always' spoke the language of their test (English, in the case of the Singaporean students) at home. The Singaporean students still did as well as students from countries where the majority used the language of their test at home.

However, Dixon (2005) conceded that there might be some trade-offs in using a second language as the sole medium of instruction. He quoted a study in 1998 which showed that Singapore Chinese university students were significantly weaker than their equivalents in China and Japan in their knowledge of the stroke order used in the writing of Chinese characters, an important skill in learning to write in languages that used the characters. This perhaps explained the tendency for the Chinese in Singapore to use English for pleasure reading while using Mandarin in speaking at home and with friends and for activities such as watching television. Moreover, when their essays in the two languages were compared, English appeared to be their stronger written language (Dixon, 2005).

Dixon (2005) pointed out that Singapore had been highly successful in shifting the home language for the Chinese group from the dialects to Mandarin but at the same time, inadvertently, in also moving some Singaporeans from using the Mother Tongue (Mandarin) at home to using English.

Dixon (2005) argued that the general success that Singapore had achieved in moving the population from dialects to Mandarin and English in a matter of decades while at the same time achieving high educational standards across the subjects brought into question the validity of the interdependence theory and the need for basic education to be in the first language of the child. Dixon (2005) conceded that it might have been possible for Singapore to have been even more successful in all the different subjects, as well as in English and the Mother Tongues, had students started school using their home languages. However, the success it had achieved showed there was a possibility that great success could be achieved while using a second language even for basic education.

A second area of success that Singapore had achieved was that bilingual Singapore students were able to compete with students from monolingual backgrounds (Dixon, 2005). This was true even though there was evidence that English (the test language for the Singaporean students) was not the dominant oral language for most Singaporeans, particularly for the Malays and Chinese. This was even more impressive given that, in the early days of the bilingual policy, for many Chinese and Indians, the Mother Tongue they had to take in school was not their home language and thus they did not have any basic education in their first (home) language. Instead, at school, they were learning two new languages. In present day Singapore, the situation had changed and most students learnt to be literate in their home language (such as Mandarin) as well as in English. However, the attained literacy in their home language (or Mother Tongue) was not used in the learning of other content areas. Despite that, Singaporeans continued to do well in those content areas. Again, this did not fit in well with the ideas promoted under the interdependence theory although, again, Dixon (2005) conceded that it might be possible that Singaporeans could have done even better in these content areas if they had used their home languages to learn these subjects.

Despite the successes, Dixon, Chuang, and Quiroz (2012) believed becoming literate could be one area where the differences in language background had a large effect on the Singapore student. They investigated how student awareness of English phonology might vary according to language background. They looked at 284 children from classes in the second year of Kindergarten (K2) with Mother Tongues ('ethnic languages' was the term they used) of Malay, Mandarin and Tamil to see whether the complexity of syllable units, and the orthography used in each Mother Tongue had any relation to the English phonological awareness of students. They also wanted to check whether the combined vocabulary size of English and Mother Tongue related to students' phonological awareness in English.

They found that students from a Malay language

background had the greatest phonological awareness and that those with a Tamil background had the smallest. Based on this evidence, Dixon et al. (2012) came to the conclusion that the complexity of syllables was an important factor as Malay had the simplest and Tamil the most complex. The orthography did not appear to be the deciding factor.

Another important factor was the size of the student's vocabulary in English (i.e. not of English and the Mother Tongue combined). However, there appeared to be a threshold level for vocabulary size beyond which another factor, the educational level of the student's mother, became the more important influence. Dixon et al. (2012) believed that the mother's educational background might be important for several reasons. They noted, for example, that the higher education of parents tended to be associated with the use of English at home. Moreover, an educated mother was generally more likely to use stories and nursery rhymes in helping students learn to read.

With the fall in the birth rate and the rise in the median age of its population, Singapore now faced the possibility of a shortage in the educated talent it needed.

Dixon et al. (2012) gave two pieces of advice to teachers in kindergarten and primary education. First, they should focus on building up students' vocabulary in English as there was a clear relationship between the vocabulary size and phonological awareness in English. Second, they should be aware of the language background of each child and be ready to give intensive training to those children whose language backgrounds did not result in the transfer of phonological awareness to English.

Changing demographics

Chong and Cheah (2010) pointed to the falling birth rate, the ageing population and the rise in immigration into Singapore as three factors that the education system needed to adapt to. While the first two factors pointed to the need to encourage students to become lifelong learners able to adapt to employment opportunities as these changed over time, the third factor led to the need for the promotion of multiculturalism, a recognized 21st century competence involving the understanding and acceptance of other cultures. This needed to be done without any loss of rigour and quality that had become the hallmarks of Singapore education.

A further possible effect on the education system as the median age of the population rose, according to Chong and Cheah (2010), was that the focus would move away from education to providing services for the elderly. The authors pointed out that the number of births per female had fallen from 4.66 at independence in 1965 to only 1.24 in 2006. The latter was not enough to maintain the population resulting in an ageing population and the need to import foreign talent.

As an island nation with few to no natural resources, Singapore had depended on an industrious and well-educated population to provide the advantage it needed globally. With the fall in the birth rate and the rise in the median age of its population, Singapore faced the possibility of a shortage in educated talent. One solution was to import the talent needed, a commodity that was in demand globally (Wee, 2014). Chong and Cheah (2010) believed that changing economic conditions had resulted in a growing number of multinational companies and international institutions opening branches in Singapore. Along with this came a further growth in labour mobility into Singapore and a greater range of represented language backgrounds. In his National Day Speech in 1997, the then Prime Minister, Mr Goh Chok Tong, made the government's position very clear:

> *Our second strategy to meet future competition is to gather talent and make Singapore a cosmopolitan city ... Attracting global talent is essential for creating the best for Singaporeans ... Singapore must become a cosmopolitan, global city, an open society where people from many lands can feel at home.* (Goh Chok Tong, 1997)

To attract the talent, Singapore needed to be ready to provide services that would be important in providing economic and social mobility opportunities including the education of their children. While the growth in the number of international schools took up some of the demand, Chong and Cheah (2010) noted that they were largely full and expatriate parents were having to turn more and more to the local schools. They cited one primary

school that had 39 different nationalities represented among its students. The result was a widening range of English language skills in schools, from those equivalent to a first language to those of a foreign language.

Chong and Cheah (2010) reported that there was a tendency for children to collect together in ethnic groupings and that even participation in some activities was based on ethnicity. This was related to cultural and language barriers that the schools needed to help students overcome. There was a danger in students forming ethnic cliques and schools needed to find ways of getting the groups to learn to work together.

A further need was to prepare students to be lifelong learners. It would no longer be the case that students would leave school and then enter a job for life. The ever-changing population, and technological and economic forces, would mean that people needed to be prepared to learn new skills and enter new jobs throughout their lives. They would need to be lifelong learners and would need to develop the skill of self-directed learning at school.

Chong and Cheah (2010) felt this was an area where schools in Singapore may have difficulties for two reasons. One was the continuing dominance of high-stakes assessment that led to many students relying on rote-learning to get by, an approach that had served them well in the past. The second was the reluctance or inability of some teachers to switch from a 'transmitting' mode of teaching to a facilitative approach. These two factors resulted in a tendency to focus on the content of subjects rather than on the processes of learning that students would need to master to become lifelong learners. Moreover, the assessment system and the transmission approach were systems that parents knew well, understood and therefore expected. Despite these barriers, Chong and Cheah (2010) pointed out that the Ministry of Education had already started on redirecting the focus in school by looking at the assessment system, reducing syllabus content and promoting the use of ICT. There had also been some attention paid to developing students' resilience, team spirit and resourcefulness.

Chong and Cheah (2010) believed Singapore's education had been very successful and was universally admired. However, this did not guarantee the future. There was a need for national and international research to investigate what skills were required in this new age, the results of which could help in the development of a new curriculum. Schools could also learn which skills would be in demand in the future through partnerships with industry.

Language barriers in school

Kiss and Mizusawa (2018) described how, at independence, Singapore's education system had started out in an English as a Foreign Language (EFL) situation and an EFL pedagogical approach, with the main aim of having all students achieve literacy in English as quickly as possible. Over time, as English assumed a greater role in schools and society in general, the approach shifted to critical literacy, the skill of reading a text while checking for the writer's unspoken point of view or stance. However, the authors noted that the entry of immigrants (mainly from Southeast Asia) meant that the teachers had not been able to give up EFL approaches completely.

Having students with a variety of abilities in English and from a range of cultural backgrounds increased the need to develop a multicultural education. For Chong and Cheah (2010), a multicultural education was one that ensured equity across ethnic and ability groups, and across the representation of their cultures and views. This development was necessary not only because of the growing diversity of Singapore's population but also because of the growing need to communicate with other cultures overseas.

In the classrooms of modern Singapore, there could be a range of languages and language skills. The first language of the school was English but, when entering school, students' familiarity with English could vary widely from those whose dominant home language was English (speakers of English as a first language) through those for whom English was used in some domains such as shopping (speakers of English as a second language) to those for whom English was largely unknown (speakers of English as a foreign language). Teachers had to work with all these students and prepare all of them for the national examinations. Kiss and Mizusawa (2018) felt that this could lead to the teachers adopting a mixture of approaches taken from a range of teaching approaches, some of

which were originally designed for first language learners and some for foreign language learners.

Zhang, Gu, and Hu (2008) noted that one study of bilingual sixth and seventh grade Spanish and English speakers in the USA had seemed to indicate that weaker readers felt they needed to keep separate their reading skills in the two languages as otherwise they could become confused. They held a bottom-up view of reading with an emphasis on being able to recognize the sounds of each individual word. In contrast, the more successful readers used what they had learnt when reading in one language to help them understand what they were reading in the other. They approached reading from a top-down perspective. However, it had not been established whether the different approaches were a result of different teaching approaches being used with the students.

Zhang et al. (2008) then looked at the reading strategies of a small group of fourth to sixth grade students in Singapore. They found that the more proficient readers were better able to talk about the strategies they used. They also found that the older learners used strategies focused on global meaning while younger learners were focused at the word level. The younger learners were also less able to adjust their strategies to the context and purpose of their reading. Overall, the authors felt the shorter concentration span of the younger learners affected their approach to reading. However, the authors emphasized that, while it was true that it was the older students who made better use of comprehension skills, it was reading ability rather than age that was the deciding factor and it was those lacking general language skills in English who had the greatest difficulty going beyond the basic decoding skills of recognizing individual words and, instead, focusing on the meaning of the text as a whole.

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Developing language skills

Vaish (2012) pointed to the global increase in the number of children who came from non-English speaking homes within countries where English was the main national language or the medium of Instruction in school. Like Kiss and Mizusawa (2018), she reported the difficulty teachers had in helping such children catch up in English literacy so that they could profit from the main English medium classes. In Singapore, a Language Support Programme (LSP) had been developed to help those who needed support in the early primary years. Some 30% of the LSP groups reported the inclusion of children from other countries and regions (Korea, China, Thailand, Nepal, the Philippines, Burma, Malaysia, Japan, Taiwan, Mongolia and India). This programme was likely to have students with varied exposure to English. However, the assumption seemed to be that all student language developed in the same way regardless of their previous exposure to the language they were learning.

This immersion approach to language learning was mirrored in some of the programmes in the UK and the USA and, Vaish (2012) commented, there was indeed some evidence that non-native learners of English progressed much as did their English dominant peers in word reading and phonological processing. There was also other evidence that pointed to the possibility of transfer from one language to another including the ability to sound out words. Such transfers could even take place from a non-alphabetic language such as Chinese to an alphabetic one such as English. However, Vaish (2012) reported this transfer did not seem to hold for the macro skills and children from non-English speaking homes rarely did as well in reading and oral skills as their peers from English speaking homes. She thus emphasized the importance of drawing a distinction between the two.

An approach to helping students of diverse backgrounds gain English literacy and generally improve their English language skills was put forward by Koskinen et al. (1999). They reported on the success of using class libraries with lots of ability- and age-appropriate books with small groups of students. Having first observed the groups, the teachers worked with each, introducing them to a book they believed relevant to that particular group. Together with the teacher, the group then talked about the cover, predicted the content, read the book together, talked about what they had read and then related it to their own lives. The book was

then placed in a basket so that students could select the same book to read again and again. They could read it alone or with other students during class time set aside for individual reading.

In some classes, the students could borrow the books to take home; in others, they could also borrow recordings of the book being read so that they could learn to pronounce the words they did not know. In each recording, there were two readings. The first was a slow reading so that the students could follow the text word by word with their finger and learn the pronunciation of unfamiliar words. The second reading was done at a natural pace so that the students could learn the appropriate rhythm.

The teachers sent notes to the parents about why the school was asking the students to read at home and made suggestions how they could help by, for example, reading with their children if they could or providing somewhere quiet for the children to read. These notes were often sent to parents in their home language to ensure that parents would be able to understand and thus help. As children improved their oral reading skills, they became more confident in and proud of their own skills. The teachers found that the students were spending more and more of their free time reading and their general language skills improved. Of the different combinations used, it was the combination of group reading and taking the book home together with a recording that was found to have the best results. Teachers felt that the small group introduction to the books were particularly important to those students for whom English was a second language.

In their study of the beliefs of Singapore's Learning Support Coordinators (LSCs), Vaish (2012) found that most believed in an immersion approach to language learning. They thus discouraged the children from speaking other languages in class and never invited parents from non-English speaking homes to do activities with the class. Moreover, they were far more likely to talk to the English teachers in their schools than to the Mother Tongue teachers.

Despite these beliefs, the LSCs did appear to hold some contradictory views. For example, while enforcing English only in their classrooms, a majority (particularly of the more experienced teachers) believed that the Mother Tongues could be of help in teaching English and half had reservations regarding English-only school events. In fact, Vaish (2012) found a range of beliefs from those who believed strongly in immersion to those who believed in some form of bilingualism. Moreover, some teachers did not always follow their espoused beliefs. One teacher who believed in immersion was observed using the Mother Tongue in a number of ways to help her students. Unfortunately, not all the teachers were aware of the different problems for children from different backgrounds. For example, Vaish (2012) pointed out that Malay children could learn one script and apply that (with variations) to both their Mother Tongue and English but children from Chinese, Indian, Thai and Korean backgrounds had to learn multiple scripts and teachers might not always take this into account.

Vaish (2012) argued that, considering the evidence, there was a need to emphasize in teacher training that there was no one size that could fit all. The teachers needed to learn about the possibility of language transfer and interference from previous learning. With the number of languages being brought into the school, it was unreasonable to expect any teacher to have some knowledge of them all, and the support of Mother Tongue teachers and parents should be sought, especially where the language of the child was not taught in school and was not spoken by any of the staff.

One problem for teachers when students used Singlish was highlighted by Pua, Lee, and Rickard Liow (2017). They noted that some of the features of Singlish, such as the lack of changes in verb endings, were similar to features in the language of children having language difficulties. Thus, referral rates were believed to be lower than they should be. Despite this, Pua et al. (2017) believed that reports from teachers and parents, when combined with the results of standardized testing, might prove to add useful information. They compared the results of 85 Primary 5 students on teacher and parent reports and standardized tests and found that teacher reports correlated highly with the tests. The authors felt that the teacher reports, and even the parent reports, could thus be considered together with the standardized tests as, despite some inaccuracy, they could include comments on features that might go unnoticed with-

out their input. The teachers had one further advantage over parents in that they could compare any single child with what they had learnt about many children over a number of years. Their reports could be improved further if they were helped to understand what features of Singlish might lead to error in their judgment. They could also learn to take socioeconomic and caregiver education aspects into account. The authors also suggested the standardized tests being used needed to be calibrated for each of the students' home languages as these could also make a difference to the results.

Developing writing skills

Kiss and Mizusawa (2018) pointed out that the 2010 curriculum required that teachers introduce a variety of texts into the classroom that were 'rich in content and concern[ed] themselves with a variety of ideas, issues, topics and themes' (Curriculum Planning & Development Division, 2008, p. 129). However, in the writing practice they had observed, they felt that formulas and models continued to be used as examples of good writing. They felt there was a need to introduce more meaningful forms of writing where, rather than the focus being on circumscribing what students wrote, it was on the *how* and *why* of writing and the involvement and motivation of the students.

Kiss and Mizusawa (2018) believed that it was the examinations that were bringing about the focus on formulas and models and this resulted in the sociocultural decontextualization of the writing in schools. Even video watching had been turned into examination preparation with students being encouraged to simply take notes that they could then revise for the examinations. The teachers did see the need to engage the students and often chose interesting topics and videos but then did not use them for intercultural discussion, citing the need to get on with the syllabus and prepare for examinations. The result was a teacher dominated classroom.

Kiss and Mizusawa (2018) further suggested that there was a tendency in the schools to equate competence in (the English) language with cognitive abilities and this disadvantaged those learning English as a second or foreign language. They felt that the teachers were judging the general ability of the students by their ability to use standard English. As a result, they were underestimating the general skills of their students. In this situation, the teachers depended on repetition, practice of language forms and model answers. They did not consider that the students might have prior knowledge of the topic of the text being used and have something to contribute. Also, they did not appear to question whether their own approach might be the reason for the student's apathy and poor writing. The result was the students did not see the writing they did in school as being relevant to the outside world. It was merely preparation for an examination.

In a case quoted by the authors, the students questioned the plausibility of a task the teacher had given them (a letter to a previous teacher who had returned to the UK and who was now asking about Singapore). In response, the teacher tried to adjust the task but the adjustments created further problems. The authors commented that it was clear that the letter was not actually meant to be a real piece of communication – it was just an exercise in listing places of interest in a letter format.

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The teachers in the study by Kiss and Mizusawa (2018) also felt cautious about discussing cultural aspects with their students. While they did not stop their students raising questions about culture, they cautioned the students that the issues could be sensitive and warned them to be careful.

Multiculturalism

Chong and Cheah (2010) noted that the ease with which a child adopted the language of a new environment was often an indicator of the child's ability to adapt to the new culture. They felt that an 'intercultural proactive' school was one where teachers were working to develop activities that promoted understanding and relationships. They supported cross cultural conversations through working with parents and other friends of the school. Tolerance could be learnt indirectly in school and involved respect for different identities, values and lifestyles related to several factors

including ethnicity and abilities.

In developing multiculturalism among the students, Chong and Cheah (2010) warned against depending solely on tokens such as wearing ethnic costumes, eating certain food and organizing activities to celebrate particular festivals. While there was no harm in this, it was more important that the different ethnic groups be brought together to work on projects and other activities so that they learnt to work together.

The authors suggested that there might be a need to adjust Singapore's bilingual policy of English plus one of Chinese (Mandarin), Malay or Tamil as the number of ethnic languages diversified, possibly resulting in the need to expand the number of formal Mother Tongues. Wee (2014) suggested that it would be better that all Singaporeans, including those for whom English was their home language, be required to learn English and one other language of their choice. There were a number of advantages in promoting such greater multiculturalism. One potential was the possibility of improved international relations and trade. Others included cultural enrichment, social inclusion and educational enrichment. However, to reap these benefits, the education system needed to invest in the support of the different language groups. The key was to promote tolerance and avoid intolerance in the education system, which could be a difficult balance to achieve. (See also Bryan & Vavrus, 2005.) Despite the dangers, Chong and Cheah (2010) felt that it was important to make the effort to make the necessary changes so as to guide the development of good intercultural relations beginning with the schools. Being multilingual and culturally sensitive were important skills in the globalized age.

In what could be seen as support for this view, Potts and Moran (2013) reported on a study of a multi-ethnic, multi-lingual classroom in Canada where languages represented included Cantonese, Vietnamese, Tagalog and Spanish. While lessons were conducted in English, the children were allowed to use their home languages where they found it helpful and the teacher called on the different students as experts in their languages and cultures. For example, one of the Spanish speakers was consulted not only as to the pronunciation of the Spanish heading in a Social Studies article on Mexico City's infrastructure but also for his interpretation of the significance of the heading. In subsequent group work, the student was more responsive and became an informant for the group. A Tagalog speaker in the class was similarly encouraged and felt more confident in the presentation of her project (in English) after having expressed for herself her feelings in Tagalog. The students were also encouraged to integrate pictures and graphics into their projects and Potts and Moran (2013) believed that the use of two languages as well as graphics helped the students to better develop their ideas and gave them confidence. Some students who rarely spoke in class contributed a lot more when they could use another language as well as English. For some, speaking their home language opened up the social space for others from their language group to join them and support each other. Potts and Moran (2013) saw the home languages as resources the students could use in thinking and feeling as well as the means of signalling their identities.

Variety in mother tongues

Another manifestation of the change in the language background of the Singapore population can be seen in Table 1, which compares the dominant home language of two age groups in 2015, those aged from five to nine and those aged 75 and over. As can be seen from the table, the percentage of the resident population (citizens and permanent residents) using English as their dominant home language in the lower age group in 2016 was close to 60% while, in the older age group, it was only 12%. Also, the proportion using Chinese as the dominant home language had dropped perceptibly. This change was even more startling when the figures in this language group were broken down further. For the five to nine group, the almost 25% for whom Chinese was the dominant home language broke down into 23.98% for whom Mandarin

Table 1

Dominant home language for two age groups

Age Group	English	Chinese	Malay	Indian languages	Others
5 to 9	59.57%	24.58%	9.85%	5.11%	0.93%
75 and over	11.98%	75.37%	9.05%	3.53%	0.07%

Data from Singapore Department of Statistics (2016a)

was dominant and only 0.60% for whom other dialects dominated. For the older age group, the over 75% broke down to 17.24% choosing Mandarin and 58.12% choosing other dialects.

What relevance does this socioeconomic and cultural diversity in background have for the school and the classroom? Ebbeck, Saidon, Rajalachime, and Teo (2013) pointed out that care needed to be taken at the transition points, the points such as when children moved from home to pre-school and later from pre-school to primary school. Particularly, in the earlier transitions from home to school and from pre-school to primary school, it was important to involve all the stake-holders – children, parents, the pre-school and the primary school. Ebbeck et al. (2013) argued that it was not simply a matter of the child needing to be ready for school. The school should also be ready for the child. 'Ready schools' were those schools that were prepared to meet the needs of students of various backgrounds, ability and culture. The needs of students coming into a new environment could appear to be very simple – such things as being able to take a rest whenever they wanted for students moving from pre-school to primary or to speak the language they were comfortable with. However, the teachers and schools needed to be sensitive to the range of such issues.

As a result, there was a danger that any acknowledgment of the cultural aspect was little more than tokenism with snippets of language placed on the wall and the classroom celebration of various cultural events.

Guo (2017) noted how tough it was for the pre-school teacher to be ready for every child regardless of their socioeconomic, cultural and language background. As a result, there was a danger that any acknowledgment of the cultural aspect was little more than tokenism with snippets of language placed on the wall and the classroom celebration of various cultural events. This was not surprising as the main role of the school globally had always been to pass on a central body of mainstream ideas and parents had been rarely consulted. Guo (2017) pointed out that even more rarely consulted were the students whose opinions could be important.

Guo (2017) found that, in New Zealand, generally such a separation of roles of teachers, parents and students was assumed by all involved. In her study, she found that the parents of Chinese students and the students themselves were more comfortable with this separation and students were embarrassed when their parents appeared too close to school and their classrooms. The minority students did not want to appear different and so de-emphasized cultural differences such as language and cultural events. They wanted to be included into the larger group. The result was that their culture was tacitly excluded from the school by teachers, parents and students.

Language in school subjects

Dixon (2005) reported that the results of the TIMSS 1999 Third International Math and Science Study placed Singapore first in Maths and second in Science out of 38 countries. While Singapore's students were banded into ability levels, the 4,966 Secondary 2 students who took the test had been chosen in proportion to the numbers in the different levels and thus fully reflected the skills of the Secondary 2 students they represented. They were tested through the language of instruction in school, i.e. English, even though only 27% of the total indicated that they used English at home all the time. Singapore's students achieved this success when competing against students who were tested in their first languages, whether that was English or another national language.

Even so, Dixon (2005) pointed out that there were differences across the ethnic groups within Singapore. In the Primary School Leaving Examination (PSLE) results at the end of primary school in 2001, 90% of the Chinese passed the Maths examination, as opposed to 69% of the Indians and 57.2% of the Malays. The gap was smaller for the Science PSLE results with 94.5% of the Chinese passing compared to 84.1% of the Indians and 76% of the Malays. Dixon (2005) reported that there were similar gaps in the O Level Maths examination normally taken at the end of Secondary 4. However, Dixon (2005) suggested that the differences might not have been directly related to ethnicity but rather to socio-economic status with the Chinese students coming from homes with a higher median household income than the Indians and the Malays. The parents' higher incomes were generally associated with the professions and thus a better education. Parents with a higher socio-economic status were

thus generally better able to help their children with their education and could more easily afford to pay for extra tuition.

At PSLE, almost all students pass their English examination, seemingly, according to Dixon (2005), making English almost a neutral subject ethnically and socially. However, there were differences at O Level in 2001 with the Indians having a pass rate of 87%, the Chinese 80.4% and the Malays 70.9%. Dixon (2005) pointed out that these high pass rates in English did not link directly to pass rates in other subjects and this suggested that English was not the only key to educational success in Singapore.

Unsworth (2001) noted that learning the language of science was not just a matter of learning some new technical vocabulary. It also entailed the learning of new grammatical forms more typical of written rather than spoken text. Control of these grammatical forms was crucial to the ability to 'construct' scientific ideas rather than just express them. To learn these forms, students needed the explicit help of their teachers. They needed to not just read the relevant texts: they needed to talk about them with their teachers and fellow students. One particularly difficult aspect was the use of the grammatical metaphor typical of such texts. Unsworth (2001) argued that, to help students understand the texts, teachers could 'talk out' the highly nominalized text. The teachers could then scaffold the students' production of their own similar texts.

Seah and Yore (2017) agreed that the language of science was different from that used in other areas inside and outside school and could impose big demands on students. They felt little was known about teacher understanding of these differences and their effect on student learning, especially in multilingual classrooms. They suggested that, unfortunately, it was generally felt that Science teachers did not pay enough attention to language in their areas, while, at the same time, language and literacy teachers did not consider the special language needs related to science. Seah and Yore (2017) felt that it was this perception of the lack of background knowledge of the two groups of teachers that had resulted in a lack of research in this area. Their study therefore focused on the understanding of and transition between three languages – daily language, school language and science language. In the classroom where students come from different language backgrounds, the students could well be learning several new languages at the same time, including the language of instruction (English) and the language of the discipline. The authors declared that, in learning Science through language, the students learnt the language and learnt about the language at the same time even if this was not a conscious process. Students whose language was not English were learning both everyday and academic language at the same time. Unfortunately, often the language teachers' lack of knowledge of Science meant they had difficulty helping those students learn the language of Science.

In their study, Seah and Yore (2017) looked at a class that included Singaporean students from each of the main ethnic groups (Chinese, Indians and Malays) as well as a small minority born outside Singapore but mainly from Asian countries. The authors found that the language demands were extensive and involved labelling, explaining and differentiating although some of the demands related as much to everyday and academic language as to the language of scientific concepts. The study suggested that the idea that students learnt language in a sequence from the everyday to academic to subject specific was perhaps simplistic. Students, in fact, had to develop all three concurrently.

Seah and Yore (2017) cautioned blaming the teacher for any difficulties faced by a student. Individual students varied greatly in what they brought with them in terms of knowledge, experience and language skills and it was difficult for a teacher to be fully aware of all the learning needs of all the students in a class. In these classrooms, the end target was, inevitably, preparing the students for the examinations. As the examinations were in written form, the teachers' focus was on giving the students the necessary writing skills. Seah and Yore (2017) worried that, as a result, the students were learning responses through rote-learning rather than through understanding.

Looking at language in the Maths class, Schleppegrell (2007) noted student problems similar to those in the Science class listed by Unsworth (2001). The students needed language forms different from those used in general conversation. Schleppegrell (2007) felt the Maths teacher needed to help the students learn this language as

this was part of the learning of Maths. She felt that there was a number of ways this could be done. Maths used different ways of representing meaning including symbols, language (written as well as spoken) and visuals such as graphs. These were not independent of each other and had to be learnt together. Schleppegrell (2007) suggested that teacher and student talk could be one mechanism through which the students could develop the language skills they needed. The students had to learn the use of long noun phrases combined with verbs of *being* and *having* that presented meaning relationships. They also needed to work with conjunctions that had special meanings in the Maths context. To learn the language of Maths, it was important the students built on their general language skills to develop the required competence. This they could only do by practising the skills of constructing meaning using symbols, language and visuals. Generally, textbook explanations were too dense and listening to teacher explanations could help students. Schleppegrell (2007) suggested that students could be given practice as they solved problems by being asked to explain without using 'it' and other pronouns. This would help the teacher to clearly follow their arguments and check their understanding. A further technique was for the teacher to revoice a student's non-technical answer, i.e. for the teacher to repeat the answer using the formal mathematical language. A third possibility was to get the students to write not 'maths stories' but procedures, explanations and findings.

Ho, Rappa, and Tang (2018) reported that this development of literacy across subjects in Singapore schools was an important aspect of the work of the English Language Institute of Singapore (ELIS). The Whole School Approach to Effective Communication in English (WSA-EC) had been initiated in 2012 and the related support model included professional learning courses, collaborative school-based research, the provision of resources as well as the possibility of interaction with experts in this area. The courses were targeted at Maths, Science and Humanities teacher leaders from both primary and secondary schools. The courses aimed to create awareness of the role of language in conveying the content and skills in each subject. They emphasized the role of talk and writing in the learning of the subjects. In line with Unsworth (2001) and Schleppegrell (2007), they underlined the importance of integrating the language and content learning within each of the subjects.

A 21st century competence: Collaborating across socio-cultural groups

Bryan and Vavrus (2005) suggested that one of the burning questions for society in the current period of rapid globalization was whether the different national, racial, ethnic, and cultural groups would learn to live together in a borderless world or whether they would end up with large cultural chasms that would lead to conflict. Already gaps had appeared between the rich and poor in rapidly growing economies. The authors pointed out that the developing ease of communication across the new telecommunication channels that, potentially, could bring people closer together could also exaggerate cultural differences and bring about even greater intolerance.

The authors pointed out that the developing ease of communication across the new telecommunication channels that, potentially, could bring people closer together could also exaggerate cultural differences and bring about even greater intolerance.

Education was often presented by international organizations, according to Bryan and Vavrus (2005), as the means to solve issues such as poverty, injustice and conflict. However, Bryan and Vavrus (2005) pointed out that there was a large amount of evidence that, in fact, education tended to reproduce social, racial and gender inequalities. (See also Schleicher & Zoido, 2016.) It was natural for people to build their identity in contrast to others. However, this could develop into an objectification and dehumanization of those who were different. This could happen when a group saw themselves superior and saw their group under threat from others. In some cases, the education system had been turned into a tool to promote such divisive beliefs. It was thus important that a balanced view of education be given so that educators could remain aware of the dangers as well as the benefits afforded by education. Even well-intentioned attempts to promote interculturalism could backfire if the cultures were presented superficially as merely interesting exotica, an ap-

proach that could result in a further marginalization of the target culture.

While the dangers needed to be pointed out, Bryan and Vavrus (2005) emphasized that properly planned approaches could result in greater tolerance. Indeed, there was evidence of some students themselves resisting racism and intolerance and that children did not necessarily accept expressions of racism in popular discourse.

Conclusion

From the point of view of society, it is important that every one of its members leads a positive and useful life. From the point of view of each individual, it is important that they are treated fairly and are given the same chances to learn and to gain employment and related assets as everyone else. The reviewed literature suggests that this can only be done if society and, in particular, the education system make a real effort to ensure equity for all in education so that the students in school learn not only their academic subjects but also to appreciate the languages and cultures represented in school and society as a whole.

Particularly at primary level, involving parents more in the education of their children could be useful for teachers, especially where the children come from a different language or cultural background. Teachers would learn more about the students and, if the parents know why their children are being given certain activities to do at home, for example, they may be able to help and support them. If children can be made to feel that the reading and writing they are doing are relevant outside school, they are more likely to take an interest and learn more. The children need a sense of being involved and a sense of their own learning. It is important not to judge students solely on the basis of language. Students from non-English backgrounds may have difficulty expressing themselves in that language without that necessarily indicating weakness in other areas. They can be encouraged to contribute, especially in areas where they are the experts, for example, with regard to their own culture and language. In this way, the 'tokenism' against which a number of writers have warned can be avoided.

It is also important to recognize that language may be used in different ways in different subject areas. All students, whatever their background, need help not just in understanding the concepts in those subjects. They need to learn the difference in the role of language in subject areas and how it is used in combination with other meaning-making resources such as symbols and visuals.

Finally, students need to learn to engage with the culture of others and to accept others as they themselves would wish to be accepted. In this way, they can prepare for life and employment in the 21st century by developing the ability to communicate and collaborate in the multicultural environment predicted for the future.

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