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Lessons for South Africa from Singapore's gifted education – A comparative study

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Since 1999 South African learners have participated in various international studies but sadly the learners have continued to perform dismally, which brings to question the quality of their education. Meanwhile, Singaporean students have been among the top achievers in all these competitions. Many comparative studies have been done between different nations and Singapore, but in few, if any, of these studies the focus has been on comparisons regarding gifted education. Singaporean policies and practices on gifted education generally prioritise a commitment to engaging learners from all ability levels with appropriately challenging curricula and instruction. In this article we report on a comparative study between the Singaporean and South African education systems. Three frames, (a) political context (b) curriculum structure and (c) loose coupling shaped the analysis. Results show that both countries had similar challenges at the point of independence from colonial rule and yet, they responded differently to those challenges. Singapore implemented inclusive education driven by excellence while South Africa's inclusive education is driven by equity without excellence. South Africa has a one-size-fits-all curriculum, whereas Singapore has alternatives that create multiple pathways for learners to reach their full potential. Although gifted education is being proposed in current South African pronouncements, there is no evidence of coherence in terms of its implementation. Meanwhile, Singapore has a coherent system that ensures their policies move from theory into practice. All these are lessons that South Africa can learn.

Keywords: comparison; coupling; frames; gifted education; inclusive education; Singapore; South Africa

Introduction

The Trends in International Mathematics and Science Study (TIMSS) is a series of international assessments of the mathematics and science knowledge of students around the world. The first TIMSS assessment was conducted in 1995 and has been administered every 4 years thereafter (National Centre for Education Statistics, n.d.). South Africa has participated in these studies since 1999 but sadly, South African school learners have continued to perform dismally in these TIMSS studies, thus bringing to question the quality of its education. Meanwhile, Singaporean students were among the top achievers in all the years from 1995 to 2015. Singapore's first-place ranking in many of these studies indicates that its success has not been coincidental. What comes to mind then is the question on what we can learn from Singapore's practices.

Literature Review

TIMSS provide a thoughtful and in-depth look into what the participating countries' mathematics and science teachers teach and their students learn, in comparison to their counterparts in other nations of the world. Although the specifics of Singapore's education system remain explicit to Singapore, the lessons from its education journey to supremacy can be generalised for other settings. In fact, the design of Singapore's education system owes a lot to lessons from other parts of the world (Organisation for Economic Cooperation and Development [OECD], 2010). Ironically, Singapore looked to Africa for lessons on how to grow its economy as confirmed by Kenya's former Prime Minister (2008–2013), Raila Odinga, in his recalling of a visit to Kenya by a team of Singaporeans who wanted to learn "our" lessons, since "we" were then a more developed country than they were. In 2008, 41 years later, Odinga took a study trip to Singapore with six ministers to learn from that country's experience.

Today, many countries have compared their education systems with that of Singapore. The questions that have been raised by these other nations include: How has this little red dot on the map, as Singaporeans frequently refer to their country, evolved from an undeveloped economy into a world economic and educational leader in such a short period of time? What education policies and practices has Singapore employed and what relevant lessons can other countries learn from Singapore's experiences? Proponents for comparative studies assert that the real value in international studies lies not in the comparisons themselves, but in the insights that we may gain into our own education systems (Naroth & Luneta, 2015). Admittedly, attempts have already started in South Africa to try to import some ideas from Singapore. For example, the Organisation for Educational Resources and Technological Training (ORT) joined forces with Bidvest and introduced Singapore Mathematics at six primary schools in the Alexandra township to test the project design and material for future use throughout South Africa and Africa. In addition, more than 80 South African schools are using Singapore Mathematics to improve their mathematics learning outcomes. However, few, if any, of these efforts have focused on comparisons of gifted education.

There is evidence to show that gifted education is what drives Singapore's success given that the country's vision was to build an inclusive society with many peaks of excellence (Lee, 2006). The country states the purpose of gifted education as seeking "to prepare talented youth for responsible leadership and service to

country and society" (Ministry of Education [MoE], Singapore, 2013:1). For that reason, we were interested in comparing Gifted Education in South Africa with that in Singapore. This is important because a study of the methods and successes of another society in addressing its curriculum goals has the potential to be mutually enriching as one community learns from the practices of the other and adopts as well as adapt some of its goals and methods for local use (Clarke, 2003).

Conceptual Framework

We start the outline of the comparison between South Africa and Singapore with an explanation of the framework that we used for our analysis. Our article is premised on the view that current educational practices for mathematics learners in South Africa deviate from what is expected of them (learners are failing) but that there are no simple or obvious explanations why. Weick, Sutcliffe and Obstfeld (2005) suggest that when the current state of the world is perceived to be different from the expected state of the world, or when there is no obvious way to engage the world, an instance of a sensemaking process is initiated. Weick (1988, 1993, 1995) and Weick et al. (2005) are proponents of sensemaking theory as a perspective or framework that can help in the understanding of intricacies that take place in organisations, groups and individuals. The theory of sensemaking is described as a set of processes initiated when an individual or organisation recognises the inadequacy of their current understanding of events (Klein, Moon & Hoffman, 2006). According to Weick et al. (2005), sensemaking is a way of creating a shared understanding that is plausible enough for a group to move toward action. In one of the seven properties of sensemaking, Weick uses the language of frames and cues as a way of drawing attention to assumptions with which people approach any matter. Frames are like an individual's belief system which predisposes a person's sensemaking activity, hence the process of sensemaking is highly dependent on unique perspectives and frames.

So, the conceptual tools of sensemaking and frames served as a guide for us to analyse and compare the Singaporean and South African school systems. Our argument is that, as humans, we create frames to label a situation in which we find ourselves, identify and interpret specific features that seem key to us in understanding the situation, and to communicate that interpretation to others.

A frame may be defined as a psychological construct that furnishes one with a prevailing point of view that manipulates prominence and relevance in order to influence thinking and, if need be, subsequent judgment (Wendland, 2010). Frames are also defined as collections of perceptions and thoughts that people use to define a situation, organise information, and determine what is important and what is not (Bolman & Deal, 2003). These frames help us to interpret the world around us and represent that world to others. The frames enable us to consolidate multifaceted phenomena into coherent, understandable categories. A frame invites an audience to view the topic from a certain perspective, offers a perspective and manages the observer's alignment in relation to the subject. Thus, frames provide meaning through careful simplification, by filtering people's perceptions and giving them a field of vision for a problem.

Although a single frame can be used to organise information, multiple frames can also be used collectively to reframe the same thing from multiple perspectives that lead us to gain clarity, generate new options and find strategies that work (Bolman & Deal, 2003). Maxwell (2017) wrote about the lessons from the Singapore Education System and pointed to practices for achieving success that would work irrespective of the culture in which they were applied.

Methodology

This was a historical and cross-cultural qualitative research in which we adopted document analysis as our analytical approach. Whereas document analysis has served mostly as a complement to other research methods, there are some specialised forms of qualitative research that rely solely on the analysis of documents. For example, document analysis may simply be the only viable source of data in historical and cross-cultural research (Merriam, 1988). Associated with document analysis, is content or thematic analysis which is a form of pattern recognition within the data, with emerging themes becoming the categories for analysis (Fereday & Muir-Cochrane, 2006). This is so because document analysis requires data selection, instead of data collection. The documents we analysed took the form of curriculum documents, reports in newspapers, journal articles, government publications and press releases. Although various frames/themes from which Singaporean and South African practices could be analysed exist, three frames shaped our analysis: (a) political context, (b) curriculum structure and (c) loose coupling.

Findings and Discussion

Political Contexts

Countries' educational development and perceptions of giftedness are influenced by social and political contexts of the time (Callahan & Hertberg-Davis, 2013). So, we start with a presentation of a brief historical overview of the political and educational trajectory that influenced practices and facilities about giftedness and gifted education in South Africa. South Africa was a

former British Colony after which racial segregation and white minority rule known as apartheid (an Afrikaans word meaning separateness) applied from 1948 until 1994 when all South African citizens took part in the first democratic election in the country.

South Africa is one of the first few sub-Saharan countries that paid attention to gifted education (Oswald & De Villiers, 2013); although such education was predominantly reserved for a minority of white learners in the apartheid system. Although research was done to highlight the needs of other gifted learners in the education system and a motivational report on the establishment of special schools for Black gifted learners was published in 1988 (Taylor & Kokot, 2000), research on gifted education declined dramatically after democracy in 1994.

The demise of apartheid lead to the implementation of compulsory education for all South African children and the elimination of segregated schooling practices. These changes went hand in hand with the closure of many centres for giftedness and rejection of gifted education as part of the legacy of the previous oppressive and exclusionary regime (Oswald & De Villiers, 2013; Roy & Wallace, 2007). The subsequent Education White Paper 6 (Department of Education, 2001:10) outlines the government's new policies for a single, undivided education system for all learners, including those with disabilities, in the hopes that inclusive education would provide "a cornerstone of an integrated and caring society." However, critics argue that inclusive education in South Africa has failed to correct the evils of apartheid. Hence, the country's education system still faces challenges that include inequalities in the school environment, a lack of quality education in a safe environment, insufficient funds for the provision of basic education, inadequate buildings, a shortage of qualified and skilled educators, and the inability of the school system to cater for learning differences (Hay & Beyers, 2011).

Singapore shares a common history with South Africa in that it also gained independence from Britain in 1959 followed by separation from Malaysia in 1965 (Kwang & Wong, 2019). Both regions shared a history of commodity and colonial exploitation, where the conquerors were sharply divided from the conquered by race. Singapore, therefore, seemed to have few advantages over South Africa at the point of decolonisation, but it is how the liberators from both sides responded to the evils of colonialism that set them apart.

At independence, Singapore had multiple ethnic groups, multiple religious groups, no common language, no common school system and no common curriculum (MOE, Singapore, 2013, 2014). Lee Kuan Yew's greatest fear was that his little country would suffer from the ethnic and religious struggles that have foiled the development of so many other societies, including South Africa. He realised that quality education could be one of the most important antidotes to this threat. As a result, the schools became the place where the country produced the skills and knowledge that would enable the students to succeed and become independent of their socioeconomic status. This vision drove a series of measures that were put in place to realise the Singapore pledge: "One united people regardless of race, language or religion" (Yew, 2000). At independence, most of Singapore's two million people were illiterate and unskilled. The focus of the survival period (1959–1978) was to expand basic education as quickly as possible (Yew, 2000). Schools were built quickly; many teachers were recruited and schools were united into a single Singaporean education system. A bilingual policy was introduced according to which all children would learn both their own language and English. The expansion was so rapid that Singapore attained universal primary education by 1965, and by the end of the survival-driven phase in 1978, the country had created a national system of public education (Yew, 2000).

With specific reference to the quality of education, Prime Minister Lee Hsein Loong, pledged his vision to build an inclusive society with many peaks of excellence (Lee, 2006). Singapore's effort to broaden conceptions of giftedness and develop national talent in non-academic domains is illustrated in that the MOE has a mainstream system, Global provider (GEP) system, Special Education system (SPED) and Special Schools. Thus, inclusivity has become the rhetoric in Singapore's educational landscape as well as the larger social context (Lee, 2014). What makes Singapore's inclusive education different from that in South Africa is that Singapore's inclusive education is built on an ability-driven education system in which students are nurtured in different academic streams based on their strengths and talents. The aim of the MOE who oversees the development of the entire system is to help students "discover their own talents, to make the best of those talents, to realise their potential, and to develop a passion for learning" (MOE, Singapore, 2012:1). As a result, racial and ethnic segregation, affecting many countries like South Africa, was circumvented.

The above developments have meant that Singaporeans do not associate gifted education with class differentiated access to the best schools. Singapore officially initiated "gifted education" in 1984 for two reasons, the first of which was educational. Singaporeans believed that intellectually gifted children need a high level of mental stimulation and challenge, which may be difficult to address in a regular classroom setting. The second reason for gifted education in

Singapore was socio-political. As a small, vulnerable nation, Singapore has no natural resources and as such relies on its human resource for advancement and success. Hence, the country considered it advantageous to nurture the ability of talented children. The stated purpose of gifted education in Singapore continues to be "to prepare talented youth for responsible leadership and service to country and society" (MoE, Singapore, 2013).

The gifted education programmes also seek to enhance teaching and learning in the mainstream classrooms of Singapore. For example, the MOE asked, in response to positive feedback and favourable academic results from the GEP programmes, the Gifted Education Branch to share its curriculum, pedagogical knowledge and skills with mainstream classroom teachers. As a result, pedagogies and enrichment strategies once reserved for the highest achievers were adapted and integrated into the mainstream schools. Today there is very little cultural and professional resistance to the idea of a highly differentiated education system that identifies intellectually gifted pupils at a very early age and then streams pupils into the highest achieving schools with the most able teachers. This is because Singapore perceives this differentiated system as common sense and not elitist.

Curriculum Structure

The South African curriculum is called the Curriculum and Assessment Policy Statement (CAPS), which was developed and is monitored by the national Department of Basic Education (DBE) (Parliamentary Monitoring Group, 2012). The CAPS is premised on the view that inclusive education would provide "a cornerstone of an integrated and caring society" and the regular classroom would meet the needs of diverse learners. The central message in inclusivity is simple: every learner matters and matters equally.

The reality is that a complexity arises when we try to put this message into practice. The curriculum is the central means for enacting the principles of inclusion and equity within an education system. However, if learning is defined narrowly as the acquisition of knowledge presented by a teacher, schools are likely be locked into rigidly organised curricula and teaching practices. Our argument is that South Africa is a typical example where learning has been narrowly defined and has led to a single curriculum for all learners learning in mainstream classrooms.

Practice shows that most curricula are designed for average learners and those not doing well while excluding the gifted in the current classroom designs and practices. Critics have warned that the CAPS document, based on inclusive education policies, enforces the one-size-fits-all trends in South African educational provisioning and curriculum development, which effectively excludes the very children it was intended for and undermines the intended focus on more equitable access to education for the poor (Harley & Wedekind, 2004). The reality is that inclusive education has left the nation's learners and graduate learners with insufficient skills to function in a modern economy. Studies indeed confirm this as noted in Pretorius and De Villiers' (2009) investigation on the perceptions of South African primary school teachers and principals about the inclusion of gifted learners in mainstream classrooms. Pretorius and De Villiers warned of the negative effects such as the overloading of teachers in over-crowded classrooms, which would leave the gifted learner with minimal attention in such an egalitarian and equalising approach to education.

On the contrary, Singaporeans do not think that it is appropriate to expect all learners to work and learn at the same pace. The efficient driven phase from 1979 to 1996, witnessed Singapore's education transformation from its earlier one-size-fits-all approach to schooling that would create multiple pathways for students in order to reduce the drop-out rate, improve quality and produce the more technically-skilled labour force needed to achieve the new economic goals (MoE, Singapore, 2014). Streaming (tracking) based on academic ability was introduced from elementary school level with the goal of enabling all students to reach their potential while recognising that all students do not grow academically at the same pace (OECD, 2010). In addition, Singapore developed, in 2004, an initiative to develop specialised schools that would serve the top 5% of students in specific domains of talent (Kwang & Wong, 2019).

Various specialised schools have been developed in the country. The Singapore Sports School, a boarding school that offers a strong academic programme along with intensive training in 10 sports, opened in 2004 with the aim of developing world class sports talent (Low, 2012). The National University High School of Math and Science (NUS High) followed in 2005, while the School of the Arts opened in 2008 and the School of Science and Technology opened in 2010 (Kwang & Wong, 2019). Noteworthy is that both the School of the Arts and the Sports School fall under the authority of the Ministry of Culture, Community and Youth, and not the MoE. The School of Science and Technology is closely associated with polytechnics. These variations allow the schools some freedom which is not possible in other schools. For example, they can hire professional coaches, practicing artists and technologists to support their programmes. As a result, the Singapore education system has a mainstream curriculum, which is differentiated to accommodate the 4% High Ability Learners who do not make the grade for the GEP. There are

SPED Schools, which provide customised educational and training programmes to cater for the diverse needs of children with special educational needs and the enriched curriculum in Gifted Education Programs, which is taught by teachers selected and trained by the MOE's Gifted Education Branch.

Loose Coupling

Several task teams have been appointed in post-apartheid South African education by the President, Minister of Basic Education and the Department of Science and Technology (DST) to investigate the challenges faced in the implementation of mathematics, science and technology (MST) strategies. Their findings were that, provincial education departments often seem to focus on under-performing schools to the neglect of gifted learners and learners with MST potential. Their recommendations were that (a) MST talent development programmes should be incorporated into the revised national MST strategy, (b) at least one dedicated mathematics and science academy or a special MST school should be established in each province, (c) the schools should preferably be boarding facilities to accommodate learners and teachers from across the province, and that (d) the schools should be managed nationally (Parliamentary Monitoring Group, 2012:48).

Another recommendation from the DST report was that vigorous mathematics talent searches were needed at school level, particularly in the rural areas where there is a huge reservoir of untapped talent. The focus on rural areas was justified when one considers that existing social and economic forces assure that the nation's best students continue to become more concentrated in the elite schools, which is not consistent with the country's democratic values. More recently the National Planning Commission (NPC) recommended that opportunities for excellence be provided to the most talented students (NPC, Republic of South Africa [RSA], 2012). In the pre-amble of the National Development Plan – Vision 2030 (NDP), the NPC envisages a South Africa where we participate fully in efforts to liberate ourselves from the conditions that hinder the flowering of our talents (Vision 2030). The plan states that schools are where talent is identified, career choices made, and habits learnt. Similarly, in the more recent South African curriculum documents inclusivity is now foreground and the gifted learner is mentioned as one category of exceptionality that should become the central part of the organisation, planning and teaching at school (DBE, RSA, 2011). All these recommendations emerged from the realisation that South Africa's collective failure to prioritise the development of its most talented students could be one of the major reasons why there is a crisis in the education system.

Our view is that such recommendations give hope to South Africans who have been ensnared in a system that has failed its citizens for decades. However, we draw on the concept of coupling in questioning whether such recommendations will be implemented. The terms "loose" and "tight coupling" usually appear in the literature together in a relative sense and with reference to the linkages of elements in organisations and the management of organisational change. Tight coupling operates in educational systems through formalisation and reliance on rules and procedures seeking to direct the behaviour of linked elements in an organisation. Glassman (1973) writes that loose coupling is present when systems have either few variables in common or that the variables they have in common are weak.

Admittedly, the contradictory nature of coupling concepts is prominent, and authors do not agree on whether loose coupling is a problem or a solution. However, our intention was not to enter too deep into these debates but to take the position that loose coupling was a problem in the South African education system that needed to be resolved. The pronouncement of new policies, in a tightly coupled system, assumes an equal existence of enough funding and capacity to deliver these policies (Wildeman & Nomdo, 2007). However, in South Africa it is not clear whether quality human and technical resources as well as funding are available, hence, our argument that the way gifted education is being proposed typifies loose coupling. Financial, technical and quality human resources are key factors that contribute to the proper implementation of any policy. According to the OECD (2014), loosely coupled systems have a tougher time bringing about reform initiatives and are often typified by an endless parade of new and sometimes conflicting policies, without building the capacity to meet them. Similarly, Sayed and Jansen (2001) explain that, while South African educational policies have been highly praised throughout the world owing to their dazzle, these policies are seldom brought to practice. In addition, Hope (2002) perceives implementation as a process of transforming educational policy into practice and the achievement of the desired goal of any public intention is the hallmark of policy realisation.

Singapore exhibits a strong alignment between policies and practices, thus showcasing a uniquely integrated system of planning. Singapore's government provides a very clear vision of what is needed in education. Its extraordinary forte is that no policy is announced and implemented before certainty exists that the needed capacity to meet it, is in place. For example, coherence of the programming and support for

gifted and talented students in Singapore is evident in its strong provision for full-time ability grouping with an appropriately challenging curriculum delivered by well trained teachers. These schools are also equipped with the latest technologies, benefit from both excellent funding aimed at supporting the programmes and the high-quality training available to teachers who wish to access it, and are required to deliver results. In this sense, Singapore's system can be described as a tightly coupled system in which the key leaders of the ministry, National Institute of Education (NIE), Singapore, and the schools share responsibility and accountability.

Furthermore, Singapore's attempts to become a global scientific hub are enabled by the collaboration between various arms of the government. The attempts bring together the finance ministry, economic development board, manpower ministry, education ministry, urban and environmental planning bodies and housing and immigration authorities to work towards the creation of the next platform for Singapore's growth. One of the most outstanding realisations when visiting Singapore was that the different ministries (manpower, national development and community development) as well as sectors of the universities, technical institutes and schools share the same clear focus on the same bold outcomes: careful attention to implementation and evaluation, and orientation towards the future. In addition, a shared understanding of national goals for the milestone courses focusing on the future, ensure that top officials from all the ministries are speaking as one. A focus on effective implementation is also shared throughout government because of the value placed on human resource development and the understanding of its critical relationship to economic development. This assists the MoE to design the policies and implement the practices that will meet this vision. Hence, the degree of institutional alignment in Singapore is, as noted by David Hogan, Senior Research Scientist at NIE, very unusual in global terms.

Conclusion

Our analysis was premised on the view that South Africa can learn from the Singaporean education system. Our particular focus was on gifted education owing to the global consensus that gifted learners become the critical human capital needed for driving modern-day conceptual economies. Yet South Africa's gifted students are neglected in inclusive classrooms where no special provision is made to help them develop to their full potential.

Our analysis shows, with reference to the political contexts of the two countries, that both shared a history of commodity and colonial exploitation when they attained independence from colonial rule. In addition, both implemented inclusive education as a remedy for the inequities that were brought about during the colonial periods. However, South Africa took inclusive education from an equity perspective at the exclusion of excellence. The end result has been that skills development has remained elusive.

In contrast, Singapore has demonstrated a consistent commitment to equity and meritocracy. Meritocracy, a foundation of Lee Kuan Yew's government from the beginning, guided the state's path on the most efficient way to run a government and the only way to create a peaceful multi-ethnic society. The colonial education system was highly elitist as well as ethnically and religiously divided. Lee Kuan Yew sought to replace this system with a universal state-funded system in which talent and hard work would prevail. Singapore's leadership argued that ruthless pragmatism was the only way to survive. Leadership also mobilised its multiple religious and ethnic groups around the Singapore pledge, "One united people regardless of race, language or religion" (Yew, 2000), using a thematic analysis: a hybrid approach of inductive and deductive coding and theme development. Under this pledge there was a shared view to intelligence as an important national and international human resource and as a possible vehicle for the advancement of society. Gifted education was accepted as reasonable and not elitist. Thus, educational investment had to be directed toward providing a suitable educational environment that would prepare talented youths for responsible leadership and service to country and society.

Lastly, our view on the current recommendations about gifted education in South Africa is that it is a noble vision. However, our fear is that it might never translate into practice because the gap between policies and their implementation at the school level, is mammoth. Yet, in Singapore every new development or change in policy is complemented by enormous attention to the details of implementation – from the MoE, to the NIE, cluster superintendents, principals and teachers. The result is a remarkable exact implementation with relatively little variation among schools in Singapore. While different mechanisms would be required in larger, more multi-layered or decentralised systems, finding ways to bring more alignment and to make all the parts work together to produce results in the classroom, is essential. These are the lessons that South Africa can learn from Singapore.

Author's Contributions

AHM did the basic research. AHM and MH wrote the manuscript. Both authors reviewed the final manuscript.

Notes

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References

Bolman LG & Deal TE 2003. *Reframing organizations: Artistry, choice, and leadership* (3rd ed). San Francisco, CA: Jossey-Bass.

Callahan CM & Hertberg-Davis HL (eds.) 2013. *Fundamentals of gifted education: Considering multiple perspectives*. New York, NY: Routledge.

Clarke D 2003. International comparative research in mathematics education. In AJ Bishop, MA Clements, C Keitel, J Kilpatrick & FKS Leung (eds). *Second international handbook of mathematics education* (Vol. 10). Dordrecht, Netherlands: Springer. https://doi.org/10.1007/978-94-010-0273-8_6

Department of Basic Education, Republic of South Africa 2011. *Curriculum and Assessment Policy Statement*. Pretoria: Author. Available at https://www.education.gov.za. Accessed 14 January 2019.

Department of Education 2001. *Education White Paper 6. Special needs education: Building an inclusive education and training system.* Pretoria, South Africa: Author. Available at https://www.vvob.org/files/publicaties/rsa_education_white_paper_6.pdf. Accessed 20 February 2021.

Fereday J & Muir-Cochrane E 2006. Demonstrating rigor *International Journal of Qualitative Methods*, 5(1):80–92. https://doi.org/10.1177%2F160940690600500107

Glassman RB 1973. Persistence and loose in living systems. *Behavioral Science*, 18(2):83–98. https://doi.org/10.1002/bs.3830180202

Harley K & Wedekind V 2004. Political change, curriculum change and social formation, 1990 to 2002. In L Chisholm (ed). *Changing class: Education and social change in post-apartheid South Africa*. Cape Town, South Africa: Human Sciences Research Council (HSRC) Press.

Hay J & Beyers C 2011. An analysis of the South African model of inclusive education with regard to social justice. *Africa Education Review*, 8(2):234–246. https://doi.org/10.1080/18146627.2011.603226

Hope KR 2002. From crisis to renewal: Towards a successful implementation of the New Partnership for Africa's Development. *African Affairs*, 101(404):387–402. https://doi.org/10.1093/afraf/101.404.387

Klein G, Moon B & Hoffman RR 2006. Making sense of sensemaking 1: Alternative perspectives. *IEEE Intelligent Systems*, 21(4):70–73. https://doi.org/10.1109/MIS.2006.75

Kwang K & Wong D 2019. Sixtieth anniversary of self-government: Singapore's pre-independence 'national day'. *Channel NewsAsia*, 18 February. Available at https://www.channelnewsasia.com/news/singapore/60th-anniversary-self-government-singapore-pre-independence-11591320. Accessed 18 February 2021.

Lee HL 2006. *Speech by Prime Minister Lee Hsien Loong at the Teachers' Day Rally on 31 Aug 2006, 8 pm. The Max Pavilion, Singapore Expo*. Singapore: Ministry of Education. Available at https://www.nas.gov.sg/archivesonline/speeches/record-details/7e69abe9-115d-11e3-83d5-0050568939ad. Accessed 19 January 2020.

Lee HL 2014. *Securing our future together*. Singapore: Prime Minister's Office.

Low LF 2012. Sports school goes from strength-to-strength. *Today*, March:24.

Maxwell D 2017. *Learning from Singapore*. Available at https://www.linkedin.com/pulse/learning-from-singapore-daniel-maxwell?trk=public_profile_article_view. Accessed 14 December 2019.

Merriam SB 1988. *Case study research in education: A qualitative approach*. San Francisco, CA: Jossey-Bass.

Ministry of Education, Singapore 2012. *Gifted education program: Special programs*. Available at http://www.moe.gov.sg/education/programmes/gifted-eduction. Accessed 15 April 2018.

Ministry of Education, Singapore 2013. *Gifted education*. Available at http://www.moe.gov.sg/education/programmes/gifted-eduction. Accessed 15 April 2018.

Ministry of Education, Singapore 2014. *Our education system*. Available at http://www.moe.gov.sg/education/programmes/gifted-eduction. Accessed 15 April 2018.

Naroth C & Luneta K 2015. Implementing the Singapore Mathematics Curriculum in South Africa: Experiences of foundation phase teachers. *African Journal of Research in Mathematics, Science and Technology Education*, 19(3):267–277. https://doi.org/10.1080/10288457.2015.1089675

National Centre for Education Statistics n.d. Available at https://nces.ed.gov/. Accessed 18 December 2019.

National Planning Commission, Republic of South Africa 2012. *National Development Plan 2030: Our future - make it work*. Pretoria: Author. Available at http://www.dac.gov.za/sites/default/files/NDP%202030%20-%20Our%20future%20-%20make%20it%20work_0.pdf. Accessed 16 January 2019.

Organisation for Economic Cooperation and Development 2010. *Education at a glance 2010: OECD indicators*. Paris, France: OECD Publishing. Available at https://www.oecd-ilibrary.org/docserver/eag-2010-en.pdf?expires=1613475149&id=id&accname=guest&checksum=5AD2489BE349967BE1839E333B313675. Accessed 16 February 2021.

Organisation for Economic Cooperation and Development 2014. *Education at a glance 2014*: *OECD indicators*. Paris, France: OECD Publishing. https://doi.org/10.1787/eag-2014-en

Oswald M & De Villiers JM 2013. Including the gifted learner: Perceptions of South African teachers and principals. *South African Journal of Education*, 33(1):Art. #603, 21 pages. https://doi.org/10.15700/saje.v33n1a603.

Parliamentary Monitoring Group 2012. *Department of Basic Education 2012 Annual report briefing*.

Available at https://pmg.org.za/committee-meeting/14937/. Accessed 20 February 2021.
Pretorius S & De Villiers E 2009. Educator's perceptions of school climate and health in selected primary schools. *South African Journal of Education*, 29(1):33–52. https://doi.org/10.15700/saje.v29n1a230
Roy R & Wallace P (eds.) 2007. *India's 2004 elections: Grassroots and national perspectives.* New Delhi, India: Sage.
Sayed Y & Jansen J (eds.) 2001. *Implementing education policies: The South African experience*. Lansdowne, South Africa: UCT Press.
Taylor CA & Kokot SJ 2000. The status of gifted child education in Africa. In KA Heller, FJ Monks, RJ Sternberg & RF Subotinik (eds). *International handbook of giftedness and talent* (2nd ed). Amsterdam, The Netherlands: Elsevier.
Weick KE 1988. Enacted sensemaking in crisis situations. *Journal of Management Studies*, 25(4):305–317. https://doi.org/10.1111/j.1467-6486.1988.tb00039.x
Weick KE 1993. The collapse of sensemaking in organizations: The Mann Gulch disaster. *Administrative Science Quarterly*, 38(4):628–652. https://doi.org/10.2307/2393339
Weick KE 1995. *Sense-making in organizations*. Thousand Oaks, CA: Sage.
Weick KE, Sutcliffe KM & Obstfeld D 2005. Organizing and the process of sensemaking. *Organization Science*, 16(4):409–421. https://doi.org/10.1287/orsc.1050.0133
Wendland ER 2010. Framing the frames: A theoretical framework for the cognitive notion of "frames of reference". *Journal of Translation*, 6(1):27–50. Available at https://eclass.uoa.gr/modules/document/file.php/ENL177/SIMPLE%20FRAMING%20AN%20INTRODUCTION%20TO%20FRAMING%20AND%20ITS%20USES%20IN%20POLITICS.pdf. Accessed 25 February 2021.
Wildeman RA & Nomdo C 2007. *Implementation of inclusive education: How far are we*? Pretoria, South Africa: Institute for Democracy in South Africa (IDASA).
Yew LK 2000. *From third world to first: The Singapore story*. New York, NY: Harper Collins.