



Journal of Geography Education in Africa (JoGEA)

Journal of the Southern African Geography Teachers' Association sagta.org.za

Advancing Geography Education in Southern Africa

Di Wilmot

Faculty of Education, Rhodes University, South Africa, Grey Street, Makhanda
(Grahamstown), 6140 (d.wilmot@ru.ac.za), <https://orcid.org/0000-0001-8184-4624>

How to cite this article: Wilmot, D. (2018). Advancing Geography education in Southern Africa: the role of the Southern African Geography Teachers' Association and the Journal of Geography Education for Southern Africa. *Journal of Geography Education in Africa (JoGEA)*, 1: 1-13.
DOI: <https://doi.org/10.46622/jogea.v1i.2534>

Abstract

The purpose of this article is twofold. Firstly, to affirm the establishment of the Southern African Geography Teachers' Association (SAGTA) and the Journal of Geography Education for Southern Africa (JoGESA)¹, and secondly, to comment on how these two partner organisations can (and should) play a role in strengthening and advancing geography education in South Africa and further afield. The key challenges facing geography education in South Africa are also discussed. These include the strength of its scholarly voice, the state of school geography and teacher education. The article raises key questions and makes some suggestions of how they could be addressed in relation to the work of these two organisations. The insights provided by this article may provide talking points that help to set an agenda for strengthening and enhancing Southern African geography education.

Keywords

School geography; professional bodies and networks; scholarly voice; quality education; learning outcomes; geography teacher education; community of practice; best practice.

Introduction

The establishment of a professional organisational structure, namely the Southern African Geography Teachers' Association (SAGTA), can bring together and help to connect members of the geography education community in South Africa, Southern Africa and further afield, the latter through SAGTA's affiliation to the American

Association of Geographers (AAG). Viewed from the perspective of a superstructure that transcends public and independent schools, higher education, and national boundaries, SAGTA may form the hub which connects groupings and networks of geography educators who collaborate in different ways through various fora. These include the biennial ISASA Conference, Naptosa (Kwa-Zulu Natal), the annual South African

¹ Editor's note: In 2020, the scope of the journal was broadened to include all African countries and so the name of the journal changed to the Journal of Geography Education in Africa.

Geographical Association conference, and the vibrant geography teachers' Google Group. SAGTA provides a much needed formalised professional structure in which classroom-retired teachers and academics, government officials, teachers-in-training, and non-governmental organisations may collaborate with a common purpose of strengthening and advancing geography education in a developing world South African context. It is argued that SAGTA and its official mouthpiece, JoGESA¹, are at the nexus of a complex, multi-layered, and diverse community of geography educators described above. They can, and should, form the core of an open and expanding system of geography educators. They can also provide a platform for collaborating and sharing ideas and practices.

Geography education in South Africa is characterised by unevenness and huge disparities in:

- the level at which our learners are performing in relation to national curriculum standards;
- the teaching and learning methods used in classrooms;
- resources and learning support materials; teacher knowledge, and teacher resourcefulness.

By drawing geography educators together to work as a community of practice with a shared vision and purpose, SAGTA may assist us in addressing the unresolved issue of quality education in school geography. SAGTA and JoGESA may also be used to support and strengthen the contribution Southern African geography educators are making to international debates about school geography in the 21st century. The journal opens up a new space in which to engage in contemporary debates on the purpose and nature of geography education in a context of complex, multifaceted, global and local environmental challenges. It also provides a platform from which to disseminate the knowledge being generated through research that responds to these and other curriculum

based practitioners in the public and independent school sectors, university-based geography teacher educators and researchers,

challenges. Furthermore, given the recent and current student protest movements taking place at South African universities, the journal may open up a space through the inclusion of 'points of debate' articles for conversations on how geography educators are responding to diversity in the curriculum and pedagogy.

The global and national societal context

Southern Africa, like many other parts of the developing world, is dealing with pressing environmental and sustainability issues and challenges including climate change, loss of biodiversity and a scarcity of freshwater resources (Lotz-Sisitka, 2011). South Africa faces many social problems and challenges, the most serious of which, according to the findings of a recent survey carried out by the Institute of Race Relations (2016), are unemployment, crime, housing, poor or slow service delivery and corruption. We are dealing with a depressed economy due to the slump in global commodities prices, increasing electricity tariffs, and a weak currency (South African Government. Statement on the Cabinet meeting, 13 January 2016; Rassou, 2015). We are also experiencing the worst drought in living memory, the consequences of which are retrenchment and job losses in the agricultural sector and rising food prices which will push up inflation (Stoddard, 2016). This alerts us to the global socio-ecological crisis we find ourselves in at present and the sustainability challenges at hand (International Social Science Council [ISSC]/ UNESCO, 2013).

Universities are grappling with how to re-orientate education to equip students to deal with this "accelerated change, increasing complexity, ambiguity, controversy and uncertainty both in terms of what is going on and what needs to be done" (Lotz-Sisitka, Wals, Kronlid, McGarry, 2015, p. 74). These authors argue for "a fundamental re-thinking of learning and teaching, and a change to

doing things differently rather than doing them better” (ibid., p. 74).

Geography Education: International responses

The need for geography education to respond to education for the environment and sustainability was proclaimed by the International Geographical Union [IGU] Commission on Geographical Education’s Lucerne Declaration on Geographical Education for Sustainable Development in July 2007. The 2016 Charter, produced in November 2015, asserts the following about the contribution of geography to education:

- Geography is a vital subject resource for 21st-century global citizens, enabling us to face questions of what it means to live sustainably in an interdependent world.
- Geographical perspectives help deepen understanding of many contemporary challenges such as climate change, food security, energy choices, overexploitation of natural resources and urbanisation.
- Geographical education is vital to equip the next generation of people with the knowledge, skills, attitudes, values and practices to value, care and make reasoned decisions for the planet. How best to teach geography to a range of learners is a deep concern and will require significant and ongoing research. We encourage policymakers and geography educators to build capacity in this endeavour to conduct both theoretical and applied research.
- Those who teach in primary and secondary schools as well as in further and higher education must be supported by research intelligence. They need the best, critical insights into (for example) the use of new technologies; problem-based learning strategies and futures education. This is because teachers are the key to improvement in education, and good teachers need the best tools to work with (IGU CGE, 2015, pp. 3-4).

The 2016 Charter cites several important research questions that need to be addressed, including, for example:

- What do geography students need to know, and how we can enhance their geographical knowledge, understanding and skills?
- What are the characteristics of effective teaching and learning material and resources, and teaching methods for improving the quality of geographical education?
- How can the training of geography teachers be improved to raise learning outcomes in school geography?

The 2016 Charter contends that research focused on these and other questions will help to refine curriculum, pedagogy and assessment practices; develop a **‘research orientation’ amongst geography teachers and educators that enables reflective and critical engagement with habitual practices and professional ‘habits of mind’** [emphasis added] (IGU. CGE, 2015, p. 4). It concludes with a six-point international action plan. It is argued that given the state of school geography in South Africa at present, the SAGTA and JoGESA have an important role to play in helping our geography education community to advance geography along the lines advocated by the IGU CGE’s 2016 Charter.

Geography Education: National Perspectives

According to Wilmot and Dube (2015), the position of geography in the South African school curriculum is not tenuous nor is it declining in popularity. There has been a steady increase in enrolment evident from the number of learners enrolled to write the State National Senior Certificate [NSC] (from 203 805 in 2011 to 310 300 in 2015) (South Africa. Department of Basic Education [DBE], 2016a, p. 19). Geography remains the fifth most popular school subject of choice in Grade 10 to 12, well ahead of history which had 158,451 learners enrolled for the NSC in 2015 (DBE, 2016a, p. 19). It is also the fifth

most popular subject in schools writing the Independent Examination Board National Senior Certificate examination, with 3 800 learners of a total of 10 221 writing geography in 2015. History, in seventh place, was written by 2 982 learners in 2015 (H. Sidiropoulos, email communication, April 20, 2016).

The upward trend in performance in the state NSC noted by Wilmot and Dube (2015) did not continue in 2015 (DBE, 2016b, p. 86). This dip is worrying because it challenges the assertion these authors made about school geography being in a healthy state. In 2014, 81,3% of the 236 051 learners who wrote the NSC Geography exam passed at 30% and above and in 2015 this dropped to 77,0% of the 2 303 985 who wrote, with only 50,4% of learners achieving 40% or more. The low level of learner performance at the Grade 12 level is an ongoing and persistent challenge. In stark contrast, learner performance in the IEB examination is very good, with 75,4% of learners achieving more than 70% and only 0.9% achieving less than 30%.

In a critical commentary on the levels of learner performance in the 2015 NSC, Spaull (2016a) discusses the consequences of the DBE's 'promotion policy'. This policy was aimed at improving access and efficiency in the system by allowing 'progressed students' to enter matric (consequently an increase of 21% learners wrote the 2015 NSC examination). He explains how it has caused a "huge crack in the matric standardisation process, one that is only starting to become apparent" (ibid.). Spaull maintains that a massive upward adjustment in marks took place with raw marks increased for 24 subjects. In a subsequent commentary, Spaull (2016b) provides the actual (pre-adjusted) statistics which show Maths Literacy had the biggest adjustment (33%) followed by Business Studies (21%) and Geography (11%). Using the raw marks, the pass rate in geography would have been 66%, not 77%. With the marks, mostly at the bottom end of the scale, being pushed up, Spaull is of the view that universities will be inundated with applications from students who would not

normally meet the entry criteria and who are "not even remotely prepared for higher academic study" (ibid., p. 5). There is uncertainty as to whether universities are ready to respond to the need for additional academic support by this group of students. Admitting students who only met the entrance criteria through mark inflation has implications for what and how we teach geography content and teaching methods in our university teachers education programmes.

The DBE's 2015 NSC Examination Diagnostic Report for Geography gives an overview and detailed analysis of learner performance for each question in the Exam: Paper 1 and Paper 2 (DBE, 2016b, pp. 87-98). Despite providing general suggestions for improvement each year, the same perennial problems persist, namely candidates' lack of content knowledge and a lack of basic definitions of concepts; they do not understand the meaning of verbs and what is expected in the answer; they do not cope with questions that require middle- and high-order thinking skills and application of knowledge; basic knowledge of calculations and map interpretation, and GIS. Similar challenges were identified in recent research on the state of secondary school geography from the perspectives of teachers in selected Eastern Cape public schools, especially Quintile 1 to 3 township secondary schools (Wilmot & Dube, 2015). This suggests that the majority of students enrolling for geography courses at university have low levels of literacy, numeracy and graphicacy. An analysis of the 2015 IEB Geography examiners' reports provides little, if any, evidence that the same applies to the learners who wrote the 2015 IEB NSC examination.

While regular annual feedback and diagnostic reports on learners' performance in the NSC examination are provided by the DBE and the IEB, there is little, if any, information available on primary geography. With Annual National Assessments [ANAs] not being implemented and used to assess geography knowledge and skills development in

geography in the Social Sciences learning area at lower levels of the national system, we do not have data on how well South African children are performing in relation to national curriculum standards or international standards. What we do know from the 7,1 million primary school children who wrote the ANAs in 2014 is that the majority are not meeting the curriculum standards for numeracy and literacy (DBE, 2015). One may infer that they are probably not meeting the standards for geographical thinking either.

There is a dearth of research on school geography in South Africa. The findings of a small scale exploratory study on primary geography revealed different approaches to teaching and learning in primary school classrooms, an unevenness in resources and sources of information used for teaching, and little evidence of map work being taught (Wilmot & Irwin, 2015). The writer concurs with the 2016 Charter's assertion that we need more information on what young children are learning and how they are learning in primary geography classrooms, the resources being used, and the level of geographical thinking and skill development. According to Wilmot and Irwin (2015), the situation in school geography in South Africa is complex. It is exacerbated by a lack of alignment between the physical provision of schooling and the structure and organisation of schooling into bands and phases which is mirrored in the structure and organisation of the national curriculum. Thus, with Grade 7 located in primary schools and Grades 8 to 12 in secondary schools, it means that all too often there are low levels of collaboration between primary and secondary teachers despite Grades 7 to 9 falling into the GET band. This impacts on and negatively affects continuity and conceptual progression.

The challenges facing school geography described above raises the question of what role can, and should, SAGTA play in building communities of practice and collaborative partnerships where university researchers and teachers work together in mutually beneficial ways to strengthen school geography. How

can JoGESA enable the sharing of good practices? And how can SAGTA ensure that its membership is representative of the full spectrum of South African schools? Addressing these questions is important given the huge inequalities that characterise South Africa's school system.

In 2015 there were 12, 8 million children enrolled in 25 691 South African public and independent schools with the vast majority (95,6%) enrolled in public schools (South Africa. Department of Basic Education [DBE], 2015:1). The independent school sector is a small but expanding sector as parents seek alternate forms of schooling. There are 566 194 (4,4%) children enrolled in 1 786 independent schools (6,9% of the total number of schools in South Africa) (South Africa. DBE, 2015:1). Public schooling in South Africa is in a crisis characterised by poor learning outcomes and systemic inefficiencies (Spaull, 2013). Taylor (2011) refers to a two-school sub-system in South Africa: one which is functional and well-resourced offering quality education for a minority of South African children (20%), and another which is dysfunctional, offering poor quality education to the majority of children (80%) – most of whom are Black South African children (Spaull, 2013). Given this statistic, SAGTA has a moral imperative to include teachers and educators from the full spectrum of South African schools so that quality geography education becomes a reality for all our children learning geography. It has a critical role to play in enabling better teaching and learning through sharing good practices and resources with teachers in marginalised and dysfunctional schools. SAGTA can play an important role alongside universities and the state in enabling teacher professional development and capacity building.

In addition to having to cope with different curriculum orientations and design features, teachers are tasked with ensuring that school geography is relevant and responsive to the environmental crisis facing the world in the 21st century. The Curriculum and Assessment

Policy Statement (DBE, 2011) like its predecessor, the National Curriculum Statement (NCS) (DoE, 2002, 2003), has a very strong environmental content focus which needs to be integrated into all subjects and across all levels of schooling. Geography is seen as a key subject for this integration with more than 50% of the content focused on environment and sustainability learning. Despite this, Dube's research (2012) describes the conceptual and pedagogical difficulties geography teachers at selected schools in the Western Cape experienced with integrating environmental education into their teaching. Similarly, Wilmot's experience of piloting the UNESCO Climate Change module for teachers and teacher educators in 2012 (Wilmot, 2012), provides insights into the knowledge and pedagogical challenges facing teachers. Re-orienting teachers is not a straightforward or quick process, and it is exacerbated by the diversity and complexity of the school landscape that still characterises South Africa two decades after democracy. One may infer that teachers' understanding of, commitment to, and capacity for, effective enactment of new knowledge and pedagogical approaches will vary.

South African Geography Education: Participation in national and international organisations and forums

Given that geography is seen as making an important contribution to education for the environment and sustainability and global citizenship, one would assume that geography educators would be at the forefront of curriculum development and innovation. At present, this is not the case with global and national curriculum initiatives mostly driven from outside rather than from inside geography education. This is evident, for example, when one considers South African geography educators' participation in global fora organised by the International Network of Teacher Education Institutions (INTEI) associated with the UNESCO Chair on Re-orienting Teacher Education to Address Sustainability. Only one South African geography educator (Wilmot, 2011)

participated in piloting and further developing course materials for the UNESCO Course for Secondary Teachers on Climate Change for Sustainable Development (UNESCO, 2013). SAGTA offers exciting opportunities for building a strong community that can participate more fully in re-orientating education and developing the resources to do so.

In a Southern African context, initiatives responding to the need for quality and relevance in education and re-orientating education towards environment and sustainability have been conceptualised and driven by multi-partner, open knowledge networks. In 2011, the National Environmental Education Teacher Education Network was established to develop resources for integrating environmental education into the CAPS curriculum. The findings of initial research on teachers' environmental and sustainability context knowledge carried out with teachers (including geography teachers, most of whom work in poor, rural schools) registered for a Bachelor of Education (Honours) degree at a South African university, revealed that while all the teachers demonstrated a fair understanding of local environment and sustainability issues, the depth of their knowledge was a concern as was the finding that "the majority had difficulty in dealing with environmental knowledge that is contested, not certain or not available." Secondly, there was little evidence that the teachers themselves were equipped to teach in ways that encouraged their learners to "... challenge established norms or engage with contested knowledge" (Lotz-Sisitka, 2011, p. 45).

Insights from this and other research undertaken by the Environmental Learning and Research Centre at Rhodes University have been used to inform the design of the Fundisa for Change, a partnership programme involving many of South Africa's major environmental organisations including state, parastatal, NGO and private companies which have an interest in teacher education. Fundisa's primary goal is to strengthen the

teaching of environmental concepts in schools (Fundisa for Change homepage, 2016). To develop teacher capacity for transformative environmental learning aligned to the national curriculum, generic 'core' orientating texts and subject-specific materials have been developed. Teaching Climate Change (Vogel, Misser & Vallabh, 2013) and Teaching Water (Kahn, Dickinson & Heath, 2014) are two 'common property' resources that are being used to integrate environmental concepts into geography teacher education programmes. These materials will also be used for short courses that are endorsed by the South African Council of Educators (SACE) for Continuous Teacher Professional Development (CTPD) purposes. SAGTA can help with advocacy and dissemination of information and resources such as these, and JoGESA creates a platform for teachers to report the findings of classroom-based research, focusing on how these and other resources are changing their practice. Importantly, the association and journal - like the Association of American Geographers and the Geographical Association in Britain, and their geography education-focused journals - provide a formal structure in which resource development and use, classroom innovations and experiments (best practices) can be shared and they will stimulate much-needed conversations and debates in geography education in South Africa and other Southern African national contexts.

South African geography education: Scholarly and professional voice

SAGTA and JoGESA can play a catalytic role in advancing geography education in Southern Africa by strengthening our scholarly voice. This is necessary if we are to stay abreast with what is happening in our subject in other national contexts and participate in global debates about the relevance and quality of geography education in the 21st century. Participation in national and international conferences, networks and forums, and research outputs may be used as

a proxy for evaluating the strength of our scholarly and professional voice.

A preliminary review of Southern African geography educators' participation in international geography education conferences, in particular the International Geography Union's [IGU] Commission on Geography Education [CGE], the largest international geography education association, reveals a low and uneven level of participation with no more than three, and often no papers, being presented at any one conference. From this one may infer that the Southern African geography education voice is intermittent and barely audible in contemporary international debates on geography education in both school geography and geography teacher education. The finding of a review of geography education publications in selected prominent geography education journals (see Appendix A), albeit tentative and partial rather than comprehensive and complete, shows that 45 articles have been published by Southern African researchers during the past 27 years (1998 to 2016). This equates to less than two per year, with Wilmot having authored or co-authored 11 (25%) of the articles published, followed by Le Grange and Beets with four, and Raselimo and Golightly having authored three. Of the 44 published, only three articles have been published in the past three years (2013-2015) in the South African Geographical Journal, the scholarly voice of geography in South Africa (Britz & Webb, 2016; Wilmot & Dube, 2015; Raselimo, 2013) and only four articles have been published in international geography education journals (Golightly, 2015; Wilmot & Dube, 2015; Wilmot & Irwin, 2015; Raselimo, Wilmot & Irwin, 2013). Furthermore, there have been very few articles focused on geography education in selected prominent accredited South African education journals during this period: none in *Perspectives in Education*, *Education as Change*, and the *Journal of Education*; and only two were published in the *South African Journal of Education* (Anyanwu, Le Grange &

Beets, 2015; Raselimo, Wilmot & Irwin, 2013).

Gathering data on the level of research outputs at a postgraduate level (Master's and PhD theses) in geography education has been a challenge and has not yet been completed. In the absence of a full set of data, it is not possible to make conclusive comments. The evidence on hand suggests that the level of postgraduate research output is low and that we still have a way to go. It is really important that we address this situation so that we produce knowledge that can inform and strengthen teaching and learning in our schools. JoGESA can, and should, play an important role in encouraging and enabling classroom-based teacher-researchers and university-based researchers to put their work into the public domain. This will help to stimulate and enhance the level of debate in geography education nationally and enable us to develop a more coherent and audible voice in the international geography education arena.

SAGTA and JoGESA: in search of an agenda for the future

SAGTA and JoGESA provide us with exciting new spaces in which we can deliberate and debate:

- the quality and relevance of *what* we are teaching and learning, *how* we are teaching and learning, *who* we are teaching and *for what purpose* in geography at all levels of schooling and in our teacher education programmes;
- how we create and share resources and best practices;
- how we develop a strong scholarly and professional voice through participation in national and international debates, forums and publications;
- how we may deepen our understanding and strengthen our practices through research, the type of research we need, why we need it and by whom it should be done, and
- how we disseminate the knowledge we generate through practice and research to

the wider national and international geography education community through conference presentations and journal articles.

Conclusion

In conclusion, it is significant that South Africa has the highest number of university geography programmes at all levels (Bachelors to PhD) in Africa (Moseley & Otiso, 2010, p.9). This is seen as providing the critical mass for the creation and sustenance of a national level geography society and journal (the Society of South African Geographers and the South African Geographical Journal respectively) (ibid., p.10). Given that school geography (albeit packaged as part of the Social Science Learning Area) is compulsory until the end of Grade 9 and the fifth most popular subject of choice in Grade 10 to 12, one may infer that there is a critical mass for creating and sustaining a national association of geography educators and a journal. SAGTA and JoGESA provide a mechanism for drawing this mass together, enabling us to expand existing and create new, mutually beneficial partnerships characterised by collaboration, agency and activity, cutting through and across levels and structures, public and independent, theory and practice, to address the challenges we face as a subject, a nation and world, both immediately and in the future.

References

- Dube, C. (2012). Implementing education for sustainable development: The role of geography in South African secondary schools, Unpublished PhD dissertation, Department of Curriculum Studies, University of Stellenbosch, Stellenbosch. Available at <http://scholar.sun.ac.za/handle/10019.1/71683>.
- Fundisa for Change homepage. (2016, March 5). www.fundisaforchange.co.za

- International Geographical Union [IGU] Commission on Geographical Education [CGE], 2015. 2016 *International Charter on Geography Education. Draft 15 November, 2015* with amendments based on comments made in the August 2015 IGU CGE meeting in Moscow and the September 2015 EUGEO meeting in Budapest.
- International Social Science Council (ISSC)/ UNESCO. (2013). *World Social Science Report 2013: Changing global environments*. Organisation for Co-operation and Development (OECD) Publishing and UNESCO Publishing: Paris.
- Kahn, A., Dickinson, J., & Heath, G. (2014). *Teaching Water. Geography Grades 10-12*. Fundisa for Change Programme. Environmental Learning and Research Centre. Rhodes University, Grahamstown.
- Lotz-Sisitka, H., Wals, A., Kronlid, D. & McGarry, D. (2015). Transformative, transgressive social learning: re-thinking higher education pedagogy in times of systemic global dysfunction. *Current Opinion in Environmental Sustainability* 16:73-80. www.sciencedirect.com
- Lotz-Sisitka, H. (2011). National Case Study: Teacher Education Professional Development with an Education for Sustainable Development Focus in South Africa: Development of a Network, Curriculum Framework and Resources for Teacher Education. *Southern African Journal of Environmental Education, Vol. 28*: 30-65.
- Moseley, W.G., & Otiso, K.M. (2010). Assessing sub-Saharan Africa's university-level of geography resources: A preliminary investigation. *African Geography Review* 29(1), pp. 5-19.
- Rassou, P. (2015, October 16). *SA flounders in financial storm*. <http://mg.co.za/article/2015-1015-sa-flounders-in-financial-storm>
- Sidiropoulos, H. (2016, April 20). Assessment Specialist, Independent Examination Board, Johannesburg. E-mail communication.
- South African Government. Statement on the Cabinet meeting of 13 January 2016. <http://www.gov.za/speeches/statement-special-cabinet-meeting-14-jan-2016-0000>.
- South Africa's most serious problems. (2016, 29 February). <http://businesstech.co.za/news/genrral/114762/south-africas-most-serious-problems/>
- South Africa. Department of Basic Education (DBE) (2016a). 2015 National Senior Certificate Examination: Technical Report. Pretoria: Government Printer.
- South Africa. Department of Basic Education (DBE). (2016b). 2015 National Senior Certificate. Diagnostic Report. Pretoria: Government Printer.
- South Africa. Department of Basic Education (DBE). (2015). 2014 Annual National Assessment Report. Pretoria: Government Printer.
- South Africa. Department of Basic Education. (2011). Curriculum and Assessment Statement (CAPS) for Geography in the Further Education and Training Band. Pretoria: Government Printer.
- South Africa. Department of Education (DoE). (2002). Revised National Curriculum Statement Grades R-9: Geography. Pretoria: Government Printer.
- South Africa. Department of Education (DoE). (2003) National Curriculum Statement Grades 1012 (General): Geography. Pretoria: Government Printer.
- Spaull, N. (2016a). Matric cracks starting to show. <http://nicspaull.com/2016/01/10/matriccracks-starting-to-show-my-ST-article>
- Spaull, N. (2016b). Matric 2015 standardisation matters. <http://nicspaull.com/2016/01/24/matric2015-standardisation-matters/>
- Spaull, N. (2013). South Africa's Education Crisis: The quality of education in South Africa 1994-2011. Report commissioned by the Centre for Development and Enterprise.

Johannesburg: CDE. Stoddard, E. (2016, January 14). SA's worst drought in memory adds to economic gloom. <http://www.moneyweb.co.za/news/south-africa/sas-worst-drought-in-memory-adds-to-economic-gloom/> Taylor, N. (2011). Priorities for Addressing South Africa's Education and Training Crisis. <http://www.jet.org.za/publications/research/Taylor%20NPC%20Synthesis%report%20Nov%202011.pdf/view> accessed on 15 December 2011.

UNESCO. (2015). *Rethinking Education. Towards a global common good?* UNESCO: Paris. <http://www.unesco.org/open-access/terms-use-ccbysa-en>

UNESCO. (2013). *Climate Change in the Classroom: UNESCO Course for Secondary Teachers on Climate Change Education for Sustainable Development*. UNESCO: Paris.

Vogel, C., Misser, S., & Vallabh, P. (2013). *Teaching Climate Change. Geography Grades 10/12*. Fundisa for Change Programme. Environmental Learning and Research Centre. Rhodes University, Grahamstown.

Wilmot, D., & Irwin, P. (2015). Geography in primary schooling in South Africa. *Review of International Geographical Education Online (RIGEO)*, 5(2), 137-150.

Wilmot, D. & Dube, C. (2015a). Opening a window onto school Geography in selected public secondary schools in the Eastern Cape Province. *South African Geographical Journal*. <http://dx.doi.org/10.1080/03736245.2015.1028989>

Wilmot, D., & Dube, C. (2015b). School Geography in South Africa after two decades of democracy: Teachers' experiences of curriculum change. *Geography 100*(2), 94-101.

Wilmot, D. (2011). Report on the Pilot Test of the UNESCO Climate Change Module for Secondary School Teachers. Rhodes University, Grahamstown.

Appendix A

Journal Articles on School Geography in South Africa (1989-2016)

1. H.W. Britz, & P. Webb. (2016). The effect of an intervention using GIS-generated geospatial data on the promotion of spatial cognition and spatial perspective taking in grade 11 learners. *South African Geographical Journal*, 98(1), 182-193.
2. Wilmot, D., & Irwin. (2015). Geography in primary schooling in South Africa. *Review of International Geographical Education Online (RIGEO)*, 5(2), 137-150.
3. Wilmot, D., & Dube, C. (2015). Opening a window onto school geography in selected public schools in the Eastern Cape Province. *South African Geographical Journal*. <http://dx.doi.org/10.1080/03736245.2015.1028989>
4. Wilmot, D., & Dube, C. (2015). School Geography in South Africa after two decades of democracy: Teachers' experiences of curriculum change. *Geography 100*(2), 94-101.
5. Anyanwu, R., Le Grange, L., & Beets, P. (2015). Climate change science: The literacy of Geography teachers in the Western Cape Province, South Africa. *South African Journal of Education*, 35(3). www.scielo.org.za/pdf/saje/v35n3/05.pdf
6. Raselimo, M., & Wilmot, D. (2013). Geography teachers' interpretation of a curriculum reform initiative: The case of the Lesotho Environmental Education Support Policy (LEESP) project. *South African Journal of Education*, 33(1), 116-131.

7. Raselimo, M., & Wilmot, D., & Irwin, P. (2013). Exploring the congruence between the Lesotho Junior Secondary geography curriculum and environmental education. *International Research in Geographical and Environmental Education (IRGEE)*, 22(4), 303-321.
8. Raselimo, M. (2013). Integration of environmental education into geography lessons: is there change in school geography following the LEESP intervention? *South African Geographical Journal*, 96(2): 119-133.
9. Golightly A & Muniz OA. (2013). Are South African Geography education students ready for problem-based learning? *Journal of Geography in Higher Education*, 37(3), 432-455.
10. Innes, LM. (2012). South African School Geography: Underpinning the foundation of geospatial competence. *South African Journal of Geomatics*, 1(1), 92-108.
11. Breetzke G, Eksteen S & Pretorius E. (2011). Paper-based GIS: A Practical Answer to the implementation of GIS education into resource-poor schools in South Africa. *Journal of Geography*, 110(4), 148-157.
12. Golightly, A. (2010). Microteaching to assist geography teacher-trainees in facilitating learner-centered instruction. *Journal of Geography*, 109(6):233-242.
13. Nel, C., Richter, B.W. & Van Der Westhuizen, C.P. A. (2010). Framework for the integration of DVD technology in geography teaching and learning. *Journal of Geography in Higher Education*, 34(4): 561-580.
14. Scheepers, D. (2009). GIS in the geography curriculum, *PositionIT*, 40-45.
15. Wilmot, D. (2009). A critical review of a school-based intervention in Grade 9 Human and Social Sciences at two South African schools. *Journal of Educational Studies* 8(3), 94-111.
16. Mwenosongole, E.M. (2009). The factors influencing learner achievement in geography mapwork at Grade 12 Level. *International Journal of Learning*, 16(8), 529-544.
17. Golightly, A. (2008). The digital versatile disc as a learning support medium in the teaching and learning of map work. *Journal of Geography*, 107(4), 131-141.
18. Beets, P.A.D., & Le Grange L.L.L. (2008). Has geography curriculum reform in postapartheid South Africa strengthened continuity and progression? *South African Geographical Journal* 90(2), 68-79.
19. Breetzke, G.D. (2007). A Critique of Distance Learning as an Educational Tool for GIS in South Africa. *Journal of Geography in Higher Education*, 31(1), 197-209
20. Webb, N.L. (2007). Geography Education in the Context of "Academic Disadvantage" in South Africa. *Journal of Geography*, 106(2), 61-68. <http://dx.doi.org/10.1080/00221340701460654>
21. Mather, C. (2007). Between 'Local' and the 'Global': South African Geography after Apartheid. *Journal of Geography in Higher Education*, 31(1), 143-159
22. Beets, P.A.D., & Le Grange L.L.L. (2005). Continuity and progression: the Achilles' heel of the National Curriculum Statement for Geography? *South African Journal of Education* 25(3), 190-197.
23. Le Grange L & Beets P. (2005). Geography education in South Africa after a decade of democracy. *Geography* 90(3), 267-277.
24. Wilmot, D. (2005). The development phase of a case study of outcomes-based assessment policy in the Human and Social Sciences Learning Area of C2005. *South African Journal of Education* (25)2, 69-75.

25. Wilmot, D. & Norton, S. (2004). Issues-based enquiry at two South African schools. *Teaching Geography* 29(3), 128-132.
26. Wilmot, D. & Van Harmelen, U. (2004). Learning strategies. In W.A. Kent., E.M. Rawling, & A. Robinson (eds.), *Geographical Education: Expanding horizons in a shrinking world*, pp.124-127. *Journal of the Scottish Association of Geography Teachers (Special Edition) Vol 33*. In association with the Commission on Geographical Education, International Geography Union Conference, 13-20 August 2004, Glasgow.
27. Rambuda, AM & Fraser, WJ. (2004). Perceptions of teachers of the application of science process skills in the teaching of Geography in secondary schools in the Free State province, *South African Journal of Education*, 24(1), 10-17.
28. Tengbeh, GT. (2004). South Africa: An unknown Country to its Geography Students? *South African Geographical Journal*, 86(2), 76-84.
29. Fairhurst, U.J., Davies, R.J., Fox, R.C., Goldschagg, P., Ramutsindela, M., Bob, U., & Khosa, M.M.. (2003). Geography: The State of the Discipline in South Africa (20002001)¹. *South African Geographical Journal*, 85(2), 81-89.
30. Wilmot D. (2002). Investigating Children's Graphic Skills: A South African Case Study. *International Research in Geographical and Environmental Education*, 11(4), 325-340.
31. Magi, L & Maharaj, B & Fairhurst, J. (2002). Guest Editorial: In Transition – Geography and South Africa at the Dawn of the New Millennium. *South African Geographical Journal*, 84(1), 1-3.
32. Nicolau, MD & Davis, NC. (2002). Restructuring South African Geography. *South African Geographical Journal*, 84(1), 12-20.
33. Ramutsindela M.F. (2001). The shifting sand of geography in South Africa. *Norsk Geografisk Tidsskrift–Norwegian Journal of Geography*, 55(1), 34-37.
34. Smit J.M. (2000). Image and reality: A Perspective from South Africa. *International Research in Geographical and Environmental Education*, 9(2), 166-171.
35. Nel, E. (1999). The Geography Discipline Network Guides to Good Teaching, Learning and Assessment Practice: a southern African perspective. *Journal of Geography in Higher Education*, 23(2), 252-257.
36. Lemon, A. (1999). Shifting Inequalities in South Africa's Schools: Some Evidence from the Western Cape. *South African Geographical Journal (Special Issue June 1999)*, 81 (2), 96-105.
37. Lemon A & Stevens L. (1999). Reshaping Education in the New South Africa. *Geography*, 84(3), 222-232.
38. Ballantyne R, Oelofse C & Winter K. (1999). Geography educators' perceptions of teaching environmental education in South African schools. *South African Geographical Journal (Special Issue)* 81(2), 86-90.
39. Binns T. (1999). Is geography going places? *South African Geographical Journal* 81(2), 69-74.
40. Nel E., & Binns, T. (1999). 'Changing the geography of apartheid education in South Africa. *Geography*, 84(2), 119-128.
41. Van Harmelen U. (1999). Where has all the Geography gone? A social constructivist perspective of Curriculum 2005. *South African Geographical Journal* 81(2), 80-85.
42. Wilmot, D. (1999). Graphicacy as a form of communication in the primary school. *South African Geographical Journal (Special Issue, June)* 81(2), 91-95.

43. van der Merwe CD. (1998). Has geography lost its 'place and 'space' in secondary education? *Education Practice 1*, 34-43.
44. Winter K. (1992). Inquiry learning in geography education. *South African Geographical Journal 19*(1), 141-145.
45. Clarke EAG. (1989). Geography as a school subject in South Africa, 1839-1989. *South African Geographical Journal 71*(1), 46-55.