Journal of Geography Education in Africa (JoGEA)

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

Commentary

The Green Box Project: Environmental Education in a Crate

Ruth T. Massey (https://orcid.org/0000-0002-8154-4039)

Anneri Pretorius (https://orcid.org/0000-0001-8826-1472)

[a]University of Huddersfield Queensgate, United Kingdom R.T.Massey@hud.ac.uk

[b]Department of Geography, University of the Free State, PO Box 339, Bloemfontein, South Africa, 9300, coetzeea1@ufs.ac.za.

*Corresponding author

How to cite this article: Massey, R.T. and Pretorius, A.. (2018). The Green Box Project: Environmental Education in a Crate. *Journal of Geography Education in Africa* (JoGEA), 1: 70-75.
DOI: https://doi.org/10.46622/jogea.v1i.2548

Abstract

Although the quality of teaching and learning of geography in many schools is worrying, another more basic problem is that of teachers lacking basic resources to use in their classrooms. Higher education institutions are expected to engage with and be of service to society and its needs. The Green Box Project is reported on as a practical and sustainable solution to address the resource constraints that many teachers of geography contend with; a way of improving the quality of teaching and learning in schools; and a model to be used by higher education institutions for community engagement.

Keywords: Curriculum; Environmental Education; Geography; Teaching Resources.

Introduction to the Green Box

While several educators in poorer primary schools are eager to teach their Social Sciences Geography classes, they lack the basic resources to do so. Some of these missing resources are as simple as basic stationery, visual aids and map work equipment. Many learners come from under-resourced backgrounds and are unable to bring these resources to school themselves. The Green Box is a recycled plastic crate containing worksheets, training materials, visual aids and resources for teaching, learning and active engagement in Geography (within the Social Sciences) classes. The Box is made up of basic stationery (pencils, erasers, scissors, paper, crayons, glue, permanent markers, prestick, and so forth), map work equipment (compasses and topographic maps for use in group work), worksheets and a standard South African school atlas (to be used as a visual aid by educators).

The Box also contains a felt storyboard and characters (that link with the worksheet activities), the "Climate Change Memory Game" (which enhances learners' memory capabilities and teaches various climate change facts) and the "Sustainable Development Puzzle Game" (which,

although not directly part of the school geography curriculum, teaches valuable lessons about the importance of rural and urban development that is socially, environmentally, and economically sustainable) (figure 1A-E).

All illustrations, concepts, games and activity development as well as the worksheets were designed by Dr Ruth Massey at the University of the Free State and are therefore copyright free. The Green Box is designed for use at the Intermediate Phase of schooling (Grades 4, 5, 6) and the worksheets and activities provided in the box are aligned with the Curriculum and Assessment Policy Statements (CAPS), which is the new curriculum. The Box aims to provide curriculum support through worksheets and activities. Table 1 illustrates themes covered by the Green Box worksheets and demonstrates Grade and content links to the Social Science Geography curriculum of the intermediate phase.

Each worksheet has a fact sheet section that provides theory on the specific topic (linked to the curriculum), an activity section (all resources needed for these activities are provided in the box) and a "take it home" section for further learning and practice at home. Each worksheet is laminated to ensure that they last longer and are easily photocopied. All items in the box are locally sourced, robust and without copyright.

Details of the Green Box Project roll-out

The Society of South African Geographers (SSAG) provided funding for project leaders at the University of the Free State to roll out the Green Box Project concept. During April 2015, thirty boxes were delivered to ten schools (3 boxes each) in the Bloemfontein area over the course of two weeks. The boxes were distributed at workshops run for Grade 4, 5 and 6 representative educators of each school. Some schools sent more than 1 teacher for each grade and some even sent their subject/department heads. The chosen schools were divided into 3 groups and so three workshops were held at 3 different school venues (figure 2(A-B)). The workshop's purpose was to introduce the educators to the contents of their Green Box and to take them through the various worksheets and the activities attached to the worksheets. This included assisting educators with using a compass and readings maps. The sessions were well attended, and the educators were very thankful for the resources. One teacher said: "We were getting a little bored with teaching Geography, but this has made us excited again". Another teacher commented that the box and the worksheets were very appropriate for the current curriculum and that she was very grateful to have new teaching ideas.

The media attention received from this initial rollout led to the Green Box being identified as a special project for the Botshabelo Mandela Day celebrations in July 2015 (near Bloemfontein). The Mandela Day organising committee raised enough money to provide another thirty boxes to another ten under-resourced schools in the Botshabelo area (a township area outside of Bloemfontein). With permission from the SSAG, the project used the leftover money from the initial project to buy thirty textbooks for this round of the workshops offered on the Green Box Project.

The future: The Green Box Project as a model for community engagement and improving the quality of teaching and learning in schools

The authors have proposed the use of the Green Box Project as a means to reassess the state of geography in schools, to make a case for using the Green Box Project as a model, not only for community engagement, but also as a way to improve the quality of teaching and learning in schools. It is well-known that there are major inefficiencies in the South African school system. Poor quality teaching and learning is a result of such inefficiencies (Wilmot & Dube, 2015). According to data from the Department of Basic Education, Geography was the fourth most popular school subject in Grades 10 – 12 in 2014 and 2015 (DBE, 2016a and 2016b). However, between 2011 and 2015 the majority of learners' performance

ISSN: 2788-9114

consistently lay between 30-39%, with a sharp and disappointing decline in performance from 2014 to 2015 (DBE, 2016c). Problems identified in the Subject Report for Geography (Wilmot & Dube, 2015) are lack of content knowledge, map work skills, and GIS knowledge. Based on the 2015 examination results, several suggestions for improvement have been made by the DBE. Amongst others, geography teachers should be:

- up-to-date with relevant topical issues and current events (conducting informal research should it be required);
- proficient themselves in teaching map work calculation techniques and GIS;
- fully aware of relevant subject content, consulting more than one textbook if possible.

In addition, enquiry-based learning is advocated in the Geography Curriculum Statement, but, similar to findings in Harber and Serf's study (2006), much is lost between policy and practice. In the research that Wilmot and Dube (2015) conducted with teachers in selected public schools in Grahamstown, Eastern Cape, it is reported that little evidence could be found of teachers fully grasping the enquiry-based approach advocated in the policy.

Experiential learning is another element in Geography teaching that is widely recognised as important, and which should be gained through fieldwork. This will remain a far-fetched dream, as for the majority of schools in the country, there is a lack of sufficient funds to carry out meaningful fieldwork. Where funds may be acquired, it is not guaranteed that a teacher knows how to do it or can find the time in their own class or get consent from other teachers in the school who have to give up teaching time to allow for geography excursions (Wilmot & Dube, 2015). Textbooks, well-functioning libraries, computer access, and Internet availability are additional constraints, rather than helpful resources, that geography teachers are faced with.

Table 1: Green Box worksheet themes and connections to the intermediate phase Social Science Geography Curriculum

Themes of Worksheets in the Green Box	Social Science Geography Curriculum Grade and Content Link
Map Work: • Symbols and Keys, • Grid References, • Compass work, • Africa and South Africa on the Map, • Latitude and Longitude, • Scale	Grade 4: • General map skills Grade 5: • Africa Grade 6: • The world
Physical Geography: • Water and Waste, • Biodiversity and Conservation, • Weather and Climate, and • Landscape Features	Grade 4: • Water in South Africa Grade 5: • Physical features of South Africa • Weather, climate and vegetation of South Africa Grade 6: • Climate and vegetation around the world
Human Geography: • Population, • Development (Rural and Urban, incl. Sustainable Development), • Migration, Food and Farming, • Transport and Trade.	Grade 4: • Food and Farming in South Africa • Places where people live (settlements) Grade 6: • Trade • Population

ISSN: 2788-9114

Figure 1 (A-E): The Green Box and its contents. B - Worksheets; C - Story Board; D - Climate Change Memory Game; E - Sustainable Development Game (Source: Authors)

As geographical knowledge and skills are not assessed in the Annual National Assessments (ANAs), similar diagnostic reports are not available for primary school geography, but, based on poor performance in numeracy and literacy in 2014 assessments, it can be inferred that standards for geographical thinking are not met (Wilmot, 2016). The lack of basic resources in senior geography classrooms is, without surprise, persistent problems in primary school classrooms. The actual steps to acquire and ensure improvement in the teaching and learning of geography in schools are not detailed in official reports issued by the DBE (DBE, 2016c). Wilmot and Dube (2015) refer to previous interventions to improve teacher competence as costly, and unsuccessful.

The solution might just be found in partnerships between Geography Departments in higher education institutions and schools in their communities. Wilmot and Dube (2015) argue for a community of practice between university-based teacher educators and geography teachers in Grahamstown; whilst the Network of Alliances for Geographic Education in the United States is a well-established example of such partnerships.

Outreach to and establishing partnerships with the community form the basis of higher education institutions' community engagement. Community engagement is broadly defined as the exchange of knowledge and resources that occur when higher education institutions collaborate with the community in which it finds itself (Driscoll, 2008; Osman & Petersen, 2013). The Green Box Project is an example of this outreach.

The positive feedback from the workshops held is testimony to the need for and value of the Green Box Project on a continuous and ordered basis. Teachers need assistance in effectively teaching geography and in staying abreast of developments in the discipline. The sharing of a love for a discipline; of classroom successes, and failures; of resources; of innovative teaching ideas; along

ISSN: 2788-9114

with no-fail traditional 'recipes'; is at the heart of a geography teaching community. The Green Box Project can serve as a kick-starter to establish partnerships between Geography Departments of higher education institutions and schools in their towns or cities. Offering workshops for geography teacher development serves several purposes: 1) the institutional requirement of community engagement is partially addressed; 2) Geography Departments get to spend time with their 'little brother', i.e. stay in touch with the curriculum taught at the school level and gain a better understanding of where students in the first year class come from; 3) creates opportunities for research collaboration between Geography Departments and Education Faculties; and 4) provide support to a valuable resource, geography teachers, the ones inspiring children to pursue a career in geography.

The Geography Department of the University of the Free State friendly challenges other Geography Departments across the country to collaborate with their Education faculty, to adopt the Green Box Project as a model, adapt the content for different school levels, and engage with the teachers in their communities on a regular basis.

Lessons learnt

Several lessons were learnt from this project that may be useful for future initiatives of a similar nature:

- Resource material should cater for all types of learning style
- Resources should be distributed along with training so that educators are not left with materials they do not know how to use appropriately
- Lessons plans and worksheets that are distributed to schools should be accompanied by the equipment needed to teach them. Otherwise, educators may be reluctant or unable to carry out the lessons or worksheet activities
- Educators need new ideas and inspiration in teaching Geography in schools
- Tertiary institution educators should assist and network with primary and secondary school educators to ensure that Geography is taught appropriately at all levels

Conclusion

Not only is the quality of teaching and learning geography in schools a concern, but basic resources to teach are often lacking. Higher education institutions are expected to engage with and be in service of society and its needs. The Green Box Project can be used by Geography Departments to engage with their communities, address teaching and learning issues, and provide basic teaching resources to teachers in need of them.

Anyone interested in rolling out the Green Box Project at their school or in their community is welcome to contact Ruth Massey or Anneri Pretorius at the University of the Free State to receive the full contents list and electronic copies of the resource materials.

References

Driscoll, A. (2008). Carnegie's Community-Engagement Classification: Intentions and Insights. *Change: The Magazine of Higher Learning,* 40(1), 38 – 41. DOI: 10.3200/CHNG.40.1.38-41.

Harber, C., & Serf, J. (2006). Teacher education for a democratic society in England and South Africa. *Teaching and Teacher Education,* 22(8), 986 – 997.

Osman, R. & Petersen, N. (2013). An introduction to service learning in South Africa. In R. Osman & N. Petersen (Eds.), *Service Learning in South Africa* (pp. 2-32). Cape Town: Oxford University Press.

South Africa. (2011). Department of Basic Education. *Curriculum and Assessment Policy Statement – Grades 4-6 Social Sciences.* Pretoria: Department of Basic Education.

ISSN: 2788-9114

South Africa. (2016a). Department of Basic Education. *2015 National Senior Certificate Examination – Examination Report.* Pretoria: Department of Basic Education.

South Africa. (2016b). Department of Basic Education. *2015 National Senior Certificate Examination – Schools Subject Report*. Pretoria: Department of Basic Education.

South Africa. (2016c). Department of Basic Education. *2015 National Senior Certificate Examination – Diagnostic Report*. Pretoria: Department of Basic Education.

Wilmot, P.D., & Dube, C. (2015). Opening a window onto school geography in selected public secondary schools in the Eastern Cape Province. *South African Geographical Journal,* 98(2), 337 – 350. http://dx.doi.org/10.1080/03736245.2015.1028989

Wilmot, P.D. (2017). 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 for Southern Africa,* 1, 1 – 13.

ISSN: 2788-9114