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Design educators reflecting on the call for the decolonisation of education

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A Holistic Approach to the Decolonisation of Modules in Sustainable Interior Design

Giovanna Di Monte-Milner
University of Johannesburg

Abstract

This paper stems from the need to develop and deliver a new module in sustainable interior design (BASD6B2) at a 2nd year level within a new Degree programme at the University of Johannesburg, in 2017. This module's development however relies on a reflection on another sustainable interior design module (BASD6B1) in the curriculum, offered at a 1st year level. The paper also secondly arises from the national call for the transformation and decolonisation of education programmes in South African tertiary institutions. This new BASD6B2 module thus needs to demonstrate a deeper connection with African roots, rather than make use of over-emphasised Eurocentric ideals. Like the global Ubuntu education approach, decolonisation requires an advancement of indigenous knowledge, expertise, teaching and learning. Thirdly, there is also a need for interior design education, worldwide, to align itself with changing notions of sustainability, which requires educators to embrace a new, emerging ecological paradigm. In this paradigm, regenerative thinking seeks to push sustainable design from merely sustaining the health of a system, towards more holistic, systems thinking, reconnecting us to place and the rituals of place (Reed 2007, p. 677).

A reflection on both the sustainable interior design modules' designs reveals several gaps. Firstly, there is no specific requirement that the emerging ecological paradigm, and the notion of regenerative thinking, be taught within the module. Secondly, one of the module outcomes requires that students be taught about sustainability through the use of a rating tool, the Green Star SA (GSSA) Interiors Rating Tool, which, while valuable, is too mechanistic and does not support holistic thinking. Thirdly, another gap is that the Green Building Council of South Africa's (GBCSA) Green Star SA – Interiors v1 Technical Manual includes little to no reference of African studies, methods and skills in the technical manual. This issue is revealed in my ongoing PhD study, which uses a constructivist grounded theory approach. Fourthly, the tool is based on an Australian tool which is, in turn, based on an American tool, and it thus deploys western constructs. The aim of this paper is thus to develop a teaching strategy that can complement the design of both modules, with a focus however on the new module BASD6B2, in order to teach students about sustainability more holistically, while celebrating and advancing African building methods and skills. The main findings reveal that the sustainable interior design modules (based on the given outcomes) do not support a holistic and decolonised approach to teaching and learning. A holistic teaching strategy is thus necessary to promote an African identity. The paper concludes that this pro-active teaching strategy can augment the sustainable interior design modules. Firstly both modules can include a holistic introductory lesson. A second tactic in the strategy could be to include diverse curriculum content and regenerative design concepts into the BASD6B2 module. This

strategy generally aims to advance students' mindsets about sustainable design, while encouraging them to be co-creators of local knowledge, while designing sustainably, for an African identity.

Keywords:

Decolonisation of education; sustainable interior design; regenerative design; GBCSA's GSSA Interiors Rating tool

Introduction

While preparing for the new Sustainable Interior Design 2 (BASD6B2) module at the University of Johannesburg, there was a simultaneous need to 'decolonise' the module. The structure of the paper is such that it begins with a presented methodology, followed by a review of the curriculum's sustainable interior design modules, and their outcomes, as issued to the facilitators. The subsequent subsection provides a review of the literature pertaining to the concept of decolonisation of education, *sustainability* and the new emerging ecological paradigm. Thereafter, a literature review regarding the concepts of *place* and *story of place* in *regenerative design* is presented. Next, a review of gaps in the modules is presented, which is then followed by a proposed holistic teaching strategy to advance the teaching of *sustainability* in design, while celebrating Afrocentric education.

Methodology

This study falls in the constructivist paradigm, and uses a qualitative research design. It is ontologically interpretive and epistemologically subjectivist. The authenticity and quality of the study is supported by the presenting of my research bias and of self-reflection as facilitator. The aim is not to provide absolute truth, but valid truth. An earlier on-going PhD revealed gaps in the GSSA – Interiors v1 Technical Manual which also needed to be taught in the new BASD6B2 module. This became the catalyst for writing this paper. In the PhD there is also an exploration of the concept of sustainability, the new ecological paradigm, and regenerative design, which are also lacking in the BASD6B1 and BASD6B2 modules' designs. The research method used in this paper is a review of the modules' design, as well as a review of research (as a guidance to situate the study in the current knowledge base of the field regarding sustainable design and a decolonisation of education). The CGT method used in the PhD will be explained briefly.

A review of both modules' information was done to uncover the gaps that a new proposed teaching strategy can address. Next, a review of literature followed relating to the concepts of decolonisation and Ubuntu education, needed for curriculum transformation. The next review of various research was done to realise theoretical underpinnings of the new whole/living systems ecological paradigm, sustainability, and its complementary approach called regenerative design.

The CGT method, was one deployed within the PhD study. It is an interpretive and theory-building method. Access to the technical manual is only made possible to Green Accredited Professionals and design educators (of which I am both). Of the thirty-five credits in the manual, only 26 were analysed and coded, using a content analysis programme called Atlas.ti. These included: Indoor Environment Quality 1 to 9; Energy 1 and 2; Transport 1, 2 and 3; Materials 1-7; Land Use and Ecology 1; Emissions 1 and 2; and Innovation 1 and 2. This revealed a lack of reference to local studies, building methods and skills. A proposed teaching strategy was then developed. This is based on these reviews of literature explained above, on personal research interests into sustainability, the ecological paradigm, and regenerative design, and also on the on-going PhD.

Sustainable interior design modules in the curriculum

There is a continual need for colleges and universities to teach students about sustainability issues (Corcoran & Wals, in Wahr 2010, p. 1). Many academic programmes worldwide have incorporated sustainability into design education (Gürel 2010, p. 185). The University of Johannesburg introduced a new degree programme in interior design in 2016: the Bachelor of Arts degree was instituted in 2016, with the first cohort now in 2nd year in 2017. The three-year degree course includes only two sustainable interior design modules. Sustainable Interior Design 1 (BASD6B1) takes place in the second semester of the first year, and

Sustainable Interior Design 2 (BASD6B2) takes place in the second semester of the second year BASD6B2. It is required that students who undertake the BASD6B2 module have completed the BASD6B1 module, which is offered by the architecture department, as part of a multidisciplinary approach to the programme. In order for the instructor to develop the BASD6B2 module, basic module information was provided about both BASD6B1 and BASD6B2. This includes qualification details and codes, details about assessments, the module purpose and outcomes. Both module purposes and outcomes are presented below.

The purpose of the BASD6B1 module, as stated in the module information document, is to "introduce students to fundamental concepts of sustainable building construction." (unpublished source). The expected module outcomes are listed below. They require students to:

- demonstrate an understanding of basic concepts of ecology and of human settlements;
- discuss climatic implications on macro and micro climates;
- describe the implications of orientation, building form, landscaping;
- select materials that are appropriate in terms of embodied energy, recycling and environmental impact; and
- select appropriate energy sources and service installations.

The purpose of the BASD6B2 module, as stated in the module information document, is to "refine the students' knowledge of sustainable design through focusing on interior design principles, requirements and application within the built environment" (unpublished source). The expected module outcomes are listed below. They require students to:

- demonstrate an understanding of sustainable design principles that impact on the interior design environment;
- understand and apply the *GSSA Interiors Rating Tool's* categories and associated principles; and
- examine and evaluate sustainability requirements and reflect on the impact on the ecosystem.

This paper will later present a reflection on gaps uncovered within these abovementioned modules, their purposes, and outcomes, in order to formulate a holistic teaching strategy that can augment the teaching of both modules.

Review of literature

Introducing decolonisation of education into sustainable interior design modules

There is also a global call for transformation of education in previously colonised countries. In 2016, the notion of Ubuntu in education was explored within a special journal issue titled Ubuntu! Imagine a Humanistic Education Globally. The issue emerged from the 59th annual conference of the Comparative and International Education Society, held in 2015 in Washington D.C. The word Ubuntu is a southern African word for expressing "solidarity and togetherness" (Oviawe 2016, p. 5). An Ubuntu approach to education aims to be less positivistic, Eurocentric and individualistic, and instead more holistic, transformative and emancipatory (Oviawe 2016, p. 2). This approach can also be infused into design programmes. Chmela-Jones (2015, p. 49) notes that the philosophy of Ubuntu should specifically shape future curricula within design programmes at institutions of higher education in South Africa.

Concurrently, on a national level, South African students and academics are appealing for a similar concept of transformation in education, a concept called 'decolonisation'. According

to the University's 2017 Draft Charter on Decolonisation, this need arose from years of suppression of indigenous knowledges and practices, with preference for, and over-reliance on, Eurocentric ideas, this even after colonisation ended in Africa (Assié-Lumumba 2016).

Some of the principles of Ubuntu in education can be seen to parallel those presented in the national approach to decolonisation of education. Importantly, both concepts require a holistic approach towards transforming education (Oviawe 2016). The University's Draft Charter on Decolonisation shares many similarities with the literature on Ubuntu, including the aim for:

- cultural inclusiveness (Biraimah 2016, p. 51);
- culturally-responsive instruction and assessment methods (Biraimah 2016, p. 51; Brock-Utne 2016, p. 41);
- culturally diverse curricular content that advances indigenous knowledge and expertise (Assié-Lumumba 2016, p. 22; Biraimah 2016, p. 55; Piper 2016, p. 109);
- rootedness in the community, the country and the world (Biraimah 2016; Assié-Lumumba 2016; Brock-Utne 2016; Oviawe 2016; Piper 2016); and
- quality education in the global South (Oviawe 2016, p. 2; Piper 2016).

These similarities above offer insightful principles that can aid the development of a holistic teaching strategy, a main aim of this paper.

Sustainability within an emerging ecological paradigm

In order to develop the BASD6B2 module, it is important to understand that the concept of sustainability within design is varied and multifaceted (Wals and Jickling 2002, p. 222; Gürel 2010, p. 185). The concept refers to an approach to building that benefits the environment, society and the economy (termed the triple bottom line). Within this approach, progress should meet the needs of "the present without compromising the ability of future generations to meet their needs" (Brundtland, in Stieg 2006, p. viii; Jones 2008, p. 54). However, within sustainability, terms like sustainable design, sustainable development, and green design have all been used to explain the built environment's responses to the call for environmentally responsible design. Due to the variations that exist, this paper makes use of Cole's preferred definition of sustainability as an "overarching globally scaled, evolving aspiration" (Cole 2012, p. 47), while incorporating "community-based thinking that integrates environmental, social and economic issues in a long-term perspective" (Robinson 2004, p. 381).

Sustainable design is currently experiencing a shift towards a new, emerging paradigm. Since 2007, an ongoing failure to move toward the goal of sustainability was reported (Fischer et al. 2007). Sustainable design has been criticised for being neutral, in that it is simply aimed at sustaining the health of the planet's organisms and systems, rather than improving it (Reed 2007). From this has emerged an ecological worldview of wholeness, and values that oppose the earlier, mechanistic worldview. One of the important focus areas within this holistic ecological worldview is for humans to be "seeing the whole world" (Hes & du Plessis 2015, p. 29). This requires humans to view the self as part of a community, and not separate to it, and that a person exists in relation to others (Hes & du Plessis 2015). Many other values underpin this worldview, and many approaches are also used in this view, such as, regenerative design.

Within an ecological worldview, regenerative design is one of the various approaches that can be used to achieve an overarching sustainability or environmentally responsible design. To illustrate the meaning and position of regenerative design within this worldview, it is helpful to examine Reed's trajectory of environmentally responsible design (2007, p. 675), as depicted in Figure 1. In this trajectory, sustainable design is placed in the middle, and is

positioned as a neutral approach. Regenerative design is placed at the top (a positive approach), whereas conventional practice is placed at the bottom (a degenerative approach). The difference between the terms used in the trajectory (green, sustainable and regenerative design) is "doing less harm, doing no harm, and doing some good, respectively" (Cole, in Svec, Berkebile, & Todd 2012, p. 82). The regenerative design approach to the built environment complements the goal of sustainability, and is not separate from it. It aims for design and construction that heals the whole system by using a deeply integrated worldview (Reed 2007, p. 675). Regenerative design views constructed projects as having the capability to build natural and social capital (Cole et al. 2012, p. 100).

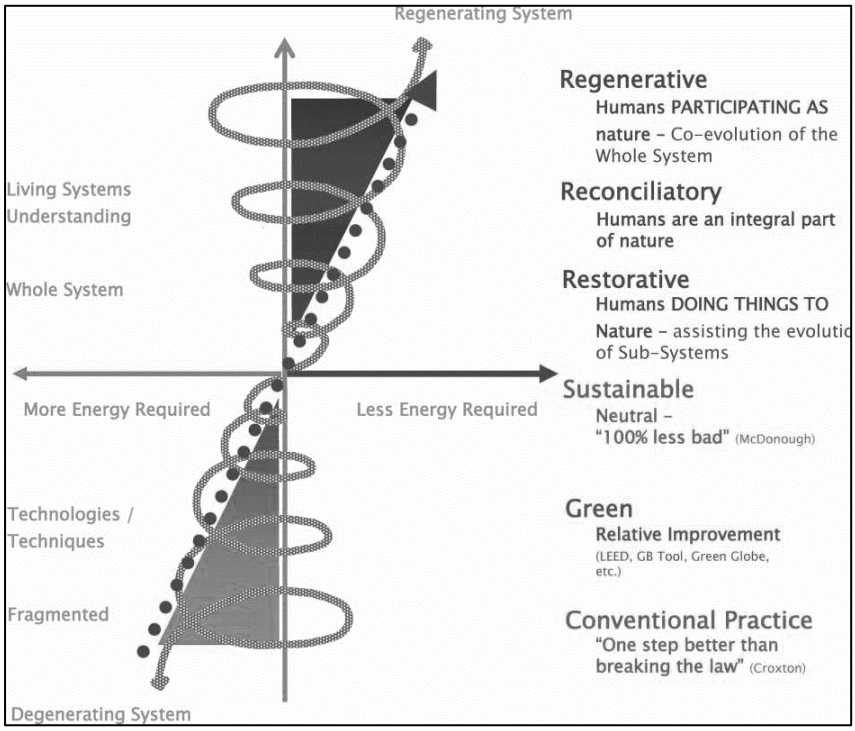

Figure 1: Reed's trajectory of environmentally responsible design (2007:676).

The importance of regenerative design's place and story of place

It is important to next reflect on the importance of place and story of place within regenerative design. Place includes "far more than topography, climate, light and tectonic form. It is a construct which emerges from the entire network of ecological and cultural systems and their interactions within a geographic area" (Hes & du Plessis 2015, p. 117). A sustainable design project requires fundamental research into the context (Heine 2012, p.6), and physical information about the site must be defined early in order to help understand the site's reach and context in a design project. However, place also refers to a system of interactions and stories in this place. Stories are historically known to shape and maintain relationships that exist between a place and its people for past and future generations (Hes & du Plessis 2015, p. 119). They also reveal core patterns and complex relationships of activities, and the co-creative interplay between nature and culture in a particular place, further giving a place its recognisable character and nature (Mang & Reed 2012, p. 32). Story of place thus illuminates the importance of geological, natural and cultural aspects of a place that have interwoven through time (Mang & Reed 2012, p. 32). It helps to reveal the historical and contemporary patterns in the place's natural, social and economic areas. Place and story of place are both important concepts in regenerative design that encourage systems thinking.

A review of non-holistic gaps in the modules

Literature suggests that institutions need to address sustainability issues in their modules from a holistic perspective (Urbanski and Filho, in Hooey, Mason, & Triplett 2017, p. 280), and to re-examine the traditional way that courses are delivered (Blackburn, in Hooey et al. 2017, p. 285). Upon reflection on the modules' purposes and outcomes, and concepts of decolonisation, the ecological worldview, regenerative design, and its focus on place and story of place, I identify gaps that could be addressed when developing a holistic teaching strategy in these modules.

First, there is no clear reference made to teaching about neither the new ecological paradigm, nor the regenerative principles in the BASD6B1 or BASD6B2 module designs, even though sustainability needs to include holistic, whole/living systems thinking. A regenerative approach to design is represented in the shift from mechanistic and anthropocentric worldviews towards ecological and eco-centric worldviews (du Plessis & Cole 2011; Mang & Reed 2012). My interest in regenerative thinking stems from an ongoing PhD study exploring the regenerative approach within sustainable interior design. A personal interest to supplement both modules with regenerative thinking supports Wahr's statement that successful academic development may rely on reflective facilitators (2010).

Secondly, the second of the listed BASD6B2 module outcomes requires that students are taught to understand and apply a national rating tool. Sustainable design rating tools are devices that designers use to measure the environmental performance of buildings. Some examples include LEED (US); BREEAM (UK); CASBEE (Japan); Green Star Australia (AUS); and Green Star SA (RSA). Recent research, however, suggests that these global assessment tools can be mechanistic rather than holistic in their approach, and that they represent reductive and fragmented thinking (Reed 2007, p. 674). Du Plessis and Cole (2011, p. 445) also note that the tools are too building-performance focused, reductive, measurable, and replicable, which does not support whole/living systems thinking. Rating tools are however also valuable in promoting "the selection of sustainable interior surface materials" (Deminey 2017, p. i). Their value in reaching sustainable design goals can therefore not be denied, but there is a risk associated with teaching a measurement tool, and its technical manual, without supplementing this with a more holistic approach.

Thirdly, an ongoing PhD study of the GSSA – Interiors v1 Technical Manual reveals an overemphasis on references to, and guidance from, western standards, studies and organisations. The technical manual exists as a guide for users to understand how to apply and complete the rating tool itself, and it also explains the credits used within the tool, as well as the criteria used to measure these credits. The manual thus needs to be taught in the BASD6B2 module in order to understand the tool. This on-going coding shows an overemphasis on international standards, studies and organisations. It exposes a lack of references to local studies, and to traditional building methods or skills; as such, an African identity is compromised.

The last gap identified relates to the BASD6B2 module's reference to a tool that is based on Western precedents. Education can be seen as the "primary instrument of enculturation" (Assié-Lumumba 2016, p. 14) and, because the identity of South Africa may be lost when education focuses only on colonial contexts, these losses of identity should be addressed. A decolonised approach is thus needed in the teaching of the BASD6B2 module - one that entails cultural inclusivity in teaching and learning. This is currently not the case because, the GBCSA's GSSA Interiors Rating Tool is based on an Australian rating tool which, in turn, is based on an American system; it is thus lacking in applicability to an African identity. Academic programmes need to be critiqued insofar as they fail to redress colonising attitudes (Wahr 2010, p. 5) and this module thus requires innovative educational reform.

A proposed holistic teaching strategy

A holistic teaching strategy, which includes two tactics, is proposed to address these abovementioned gaps in the modules.

The first proposed tactic is to supplement the introductory section of the BASD6B1 module with information about the new ecological paradigm, the position of sustainability within it, and the need for other complementary approaches such as regenerative design which aims to surpass simple sustainable design. This introductory overview can then be repeated in the beginning of the BASD6B2 module to reinforce the concepts, however at a deeper level. Teaching sustainability is impossible without regeneration (Reed 2007, p. 112), and institutions need to re-assess what sustainability is in order to ensure commitment (Bertel et al., in Hooey et al. 2017, p. 290).

Although in 2016 the facilitator of BASD6B1 already included local examples to explain orientation, building form and landscaping, diverse curriculum content can be added in greater complexity in the BASD6B2 module in 2017 by introducing an appreciation for place and story of place into the teaching of the manual and the tool. The second tactic can therefore include assignments in BASD6B2, whereby students can research and evaluate local African building methods and skills both in literature, and in stories from their respective communities. By encouraging students to explore local stories of place, they may understand the importance of the community in that place, which may anchor them in their own context (Assié-Lumumba 2016, p. 23). This tactic also supports Biraimah's idea of Ubuntu, wherein culturally responsive instruction should be implemented, such that it reflects students' own cultural experiences (Biraimah 2016, p. 52). Assignments can further assist in building local knowledge about African building methods and skills related to the specific criteria within the GBCSA's GSSA Interiors Rating Tool and its technical manual. Due to the fact that colonial systems in Africa in the past did not accommodate the type of education that existed before colonialism (Assié-Lumumba 2016, p. 14), local content is lost; and such assignments could help advance Afrocentric course content, supporting a holistic decolonisation goal.

Conclusion

This paper recognises the facilitator's need to develop and teach a new sustainable interior design module (BASD6B2), while adhering to an institutional request to decolonise the curriculum. First the methodology used in this paper was explained. Next, both sustainable interior design modules in the curriculum were explored. Thirdly, a review of the concept of decolonisation, the new ecological worldview and its complementary approaches was provided, followed by discussion of the principles of place and story of place within regenerative design. From this discussion, it became clear that a more holistic approach to culturally inclusive teaching and learning is required in the development of the module. Fourthly, upon review, certain gaps were identified which were seen to hinder holistic teaching. The first of these is that the new emerging ecological paradigm, and regenerative and systems thinking is not explicitly required within the two sustainable interior design modules in the curriculum. The second gap relates to a BASD6B2 module outcome that requires that students be taught about sustainability through the use of a rating tool that does not support holistic thinking. The third gap shows a lack of reference to African studies, methods and skills in the technical manual. The last gap identified relates to the fact that the GSSA Interiors Rating tool can be seen as a colonised construct proposed holistic and pro-active teaching strategy to supplement both modules, especially BASD6B2. The strategy can offer a holistic perspective in line with the principles of Ubuntu and decolonisation in education, and in sustainable design education. The first tactic of teaching students about the ecological paradigm, the position of sustainability within it, and regenerative design can

alter their values, and surpass the notion of sustainable design as the end-goal. Tactic two proposed includes introducing a deep exploration of place and story of place in teaching the module, which can help shift the mind set of students away from design as an exercise in box-ticking. The holistic teaching strategy proposed can assist them in becoming co-creators of knowledge, and reflective practitioners in the new paradigm, that deploys holistic thinking about context, reach, stories and patterns of a place, in order to make their place healthy, and ignite an interest in African method and skills.

References

Assié-Lumumba, N. T. 2016. Evolving African attitudes to European education: Resistance, pervert effects of the single system paradox, and the Ubuntu framework for renewal. *International Review of Education*, 62 (1), pp. 11-27.

Biraimah, K. L. 2016. Moving beyond a destructive past to a decolonised and inclusive future: The role of Ubuntu-style education in providing culturally relevant pedagogy for Namibia. *International Review of Education*, 62 (1), pp. 45-62.

Brock-Utne, B. 2016. The Ubuntu paradigm in curriculum work, language of instruction and assessment. *International Review of Education*, 62 (1), pp. 29-44.

Chmela-Jones, K. A. 2015. The ethics of Ubuntu and community participation in design. In: Breytenbach, A. and Chmela-Jones, K. A. (eds). *Ethics and Accountability in Design: Do they Matter? DEFSA Conference Proceedings*. [online] http://www.defsa.org.za /sites/default/ files/downloads/2015conference/DEFSA%20Introduction%202015.pdf [Accessed on 12 July 2017].

Cole, R. J. 2012. Transitioning from green to regenerative design. *Building Research and Information*, 40 (1), pp. 39-53.

Cole, R. J., Busby, P., Guenther, R., Briney, L., Blaviesciunaite, A. and Alencar, T. 2012. A regenerative design framework: Setting new aspirations and initiating new discussions. *Building Research and Information*, 40 (1), pp. 95-111.

Deminey, M. 2017. External factors influencing the selection of sustainable interior surface materials by Johannesburg-based interior designers. Dissertation (Magister Technologia: Interior Design) submitted to the University of Johannesburg.

Du Plessis, C. and Cole, R. J. 2011. Motivating change: Shifting the paradigm. *Building Research and Information*, 39 (5), pp. 436-449.

Fischer, J., Manning, A. D., Steffen, W., Rose, D. B., Daniell, K., Felton, A., Garnett, S., Gilna, B., Heinsohn, R., Lindenmayer, D. B., Macdonald, B., Mills, F., Newell, B., Reid, J., Robin, L., Sherren, K. and Wade, A. 2007. *Mind the Sustainability Gap*. Canberra: Fenner School of Environment Society

Gürel, M. Ö. 2010. Explorations in teaching sustainable design: A studio experience in interior design/architecture. *International Journal of Art and Design Education*, 29 (2), pp. 184-199.

Heine, U. 2012. Teaching sustainability in design without greenwashing. Proceedings of the PLEA2012 - 28th Conference: Opportunities, Limits & Needs Towards an environmentally responsible architecture, Lima, Peru, 7 - 9 November 2012. [online] http://plea-arch.org/ARCHIVE/2012/files/T09-20120130-0034.pdf [Accessed on 10 July 2017].

Hes, D. and Du Plessis, C. 2015. *Designing for Hope: Pathways to Regenerative Sustainabilit*y. Oxford: Routledge.

Hooey, C., Mason, A. and Triplett, J. 2017. Beyond greening: Challenges to adopting sustainability in institutions of higher education. *The Midwest Quarterly*, 58 (3), p. 280.

Jones, L. 2008. Environmentally Responsible Design: Green and Sustainable Design for Interior Designers. New Jersey: John Wiley & Sons.

Mang, P. and Reed, B. 2012. Designing from place: A regenerative framework and methodology. *Building Research and Information*, 40 (1), pp. 23-38.

Oviawe, J. O. 2016. How to rediscover the Ubuntu paradigm in education. *International Review of Education*, 62 (1), pp. 1–10.

Piper, B. 2016. International education is a broken field: Can Ubuntu education bring solutions? *International Review of Education*, 62 (1), pp. 101-111.

Reed, B. 2007. Shifting from 'sustainability' to regeneration. *Building Research and Information*, 35 (6), pp. 674-680.

Robinson, J. 2004. Squaring the circle? Some thoughts on the idea of sustainable development. *Ecological Economics*, 48, pp. 369–384.

Stieg, C. 2006. The sustainability gap. *Journal of Interior Design*, 32 (1), pp. vii–xxi.

Svec, P., Berkebile, R. and Todd, J. A. 2012. REGEN: Toward a tool for regenerative thinking. *Building Research and Information*, 40 (1), pp. 81-94.

Thornberg, R. 2012. Informed grounded theory. *Scandinavian Journal of Educational Research*, 56 (3), pp. 243-259.

Wahr, F. 2010. Attempting to decolonise academic development: Designing an action learning approach to integrate sustainability into the higher education curriculum. In: *Proceedings of the 8th World Congress on Participatory Action Research and Action Learning*, 6 – 9 September, Melbourne, Australia. [online] http://wc2010.alara .net.au/Formatted%20Papers/4.2.6.SEC.1.pdf [Accessed on 10 July 2017].

Wals, A. E. and Jickling, B. 2002. 'Sustainability' in higher education: From doublethink and newspeak to critical thinking and meaningful learning. *International Journal of Sustainability in Higher Education*, 3 (3), pp. 221-232.

