

Perspectives

INDIGENISING AFRICA'S ENVIRONMENTAL EDUCATION THROUGH A DEVELOPMENT EDUCATION DISCOURSE FOR COMBATING CLIMATE CHANGE

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Abstract: Africa is one of the regions that bear the harshest effects of climate change, yet its efforts to combat climate change through environmental education are not strongly linked to its ecological conditions. The encounter of Africa with colonialism in the past and the current impacts of globalisation and neoliberalism have kept African indigenous knowledge in the margins of its educational systems, thereby impeding its environmental education efforts for effective climate change adaptation. This paper presents the argument that, a development education discourse on indigenous knowledge in the lens of critical theories of education such as critical pedagogy and postcolonial theory can create spaces for the revitalisation and inclusion of indigenous knowledge in African educational systems for combating climate change. Based on a literature analysis of papers by some African postcolonial scholars, the author weaves the usefulness of African indigenous knowledge into a development education discourse, not only for combating climate change, but also for challenging hegemonic knowledge forms.

Key words: Development education; indigenous knowledge; environmental education; education for sustainable development.

Several assessment reports published over the years by the United Nations (UN) Intergovernmental Panel on Climate Change (IPCC) have not only confirmed the reality of climate change, but have also underscored the importance of incorporating indigenous knowledge (IK) into climate action (Downing et al., 1997; McNamara and Westoby, 2011). The incorporation of IK into climate action is said to be useful in developing 'effective adaptation

strategies that are cost-effective, participatory and sustainable' (Boko et al., 2007: 456). For African countries, the need to combat climate change is particularly urgent given the peculiarity of Africa's climate change situation. Though the least contributor to the anthropogenic causes of global climatic changes, Africa bears the harshest brunt of climate change (Hope, 2009a, 2009b) and is poorly represented in global efforts to combat climate change as evidenced for example in the small number of African scientists on the IPCC (Masters, 2011). Climate change poses a serious threat to Africa's sustainable economic development and if not combated, risks derailing the socio-economic gains already made by African countries (Hope, 2009a).

Climate change policies and programmes are mostly framed as mitigation and adaptation strategies (Kpadonou, Adégbola and Tovignan, 2012), with some as educational strategies that aim to change 'lifestyle, economies and social structures' that contribute to excessive production of greenhouse gases, and also equip people and communities with the appropriate knowledge and skills to adapt their lifestyles and livelihoods to the impact of climate change (Anderson, 2010: 4). Human activities have been found to contribute significantly to climate change (IPCC, 2013), and education as a tool for social change has a vital role to play in not only changing behaviours that contribute to climate change, but also in instilling adaptive knowledge and skills towards the accommodation of climate change impacts. Combating climate change is part of a broader global sustainable development agenda (Sathaye, Shukla and Ravindranath, 2006), as can be seen in the inclusion of a climate change goal in the proposed UN Sustainable Development Goals (SDGs) due to be adopted in September 2015 (Picot and Moss, 2014). For climate-related education programmes to be successful in creating a climate-aware citizenry in any society, the indigenous forms of knowledge based on the lived experiences and local ecological conditions of such a society must be incorporated into such programmes (Wiid and Ziervogel, 2012). This important indigenous perspective to environmental education (EE) is notably missing in most African countries, due to the de-contextualised nature of educational policies and programmes, traceable to Africa's past experience with colonial

domination (Kayira, 2015), the result of which has been the marginalisation of African IK in contemporary educational policies and programmes (Shizha, 2013).

This paper presents the argument that a development education (DE) discourse around EE in some African states can provide opportunities for indigenising school curriculum content for combating climate change. With its transformative potentials and theoretical roots in Freirean critical pedagogy and postcolonial theory, DE can provide a critical discursive framework within which assumptions held about African IK can be examined and challenged while also providing a narrative to understand and address the marginalisation and subjugation of IK the world over, and in African educational systems. The paper will first discuss the evolution of the Environmental Education Movement (EEM) in relation to DE, and the linkages that exist between these concepts. The second section will delve into a theoretical discussion of how IK is manifested in DE discourse in relation to critical pedagogy and postcolonial theory. This is followed by a discussion of IK and its importance in climate change adaptation practices in African communities and further touches on some global and regional policy initiatives that promote IK in development processes. The last section discusses the de-contextualised nature of Africa's education, while citing some efforts to revitalise indigenous knowledge in the school curricula in some African states. Challenges that hamper the integration of IK into African school curricula are examined too.

The evolution of an environmental education movement vis-à-vis development education

The EEM has been at the forefront of global and national educational efforts since the 1960s in creating awareness on what the environment is and how humans should relate to it in order to safeguard it. In one of the earliest international symposia, the 1970 Nevada workshop, EE was defined as 'the process which leads to the development of abilities and attitudes necessary to make people comprehend and appreciate the relationship between them, their culture and the biophysical environment' (Skanavis and Sarri, 2004: 271).

The first intergovernmental conference on EE was later held in 1977 in Tbilisi, Georgia, USSR, and ended with guidelines and recommendations for the wider implementation of EE in formal, informal and non-formal education settings across different countries (Hogan and Tormey, 2008; Palmer, 2008). This has seen the implementation of school-based and community-based environmental education programmes in both developed and developing countries. Though discussions on EE in the above cited conferences, among others, established a link between the human environment and social and economic development, the practice of EE over the years has focused more on the protection of the human environment, thereby giving it a more environmental outlook (Hogan and Tormey, 2008).

DE as an area of learning has evolved over the years in its aims, especially in Europe, from educating people about global development issues to challenging conceptions of power, justice and fairness in efforts to focus global attention on the impact of development efforts by countries in the global North in the global South, but also to educate people in developing countries about issues of human rights, self-reliance and social justice. Though DE practitioners focused their efforts more on the social and economic dimensions of development in its early days, with time it became apparent that the social and economic wellbeing of people required the preservation of the environment, calling for the incorporation of environmental issues in DE (Tilbury, 1997). DE and the EEM have enjoyed some collaboration in promoting sustainable development (SD), though sometimes this relationship has been characterised by tension and competition (Dolan, 2012; Hogan and Tormey, 2008). DE and EE have interacted as complementary disciplines, driving global discussions on education for sustainability that is aimed at the promotion of social and ecological justice, the results of which for example, culminated in the 2005 declaration of Education for Sustainable Development (Atkinson and Wade, 2012; Bourn, 2005; Tilbury, 1997).

Global development issues such as climate change, natural resource depletion, environmental degradation and poverty, among others, are at the

centre of discussions in the two educational approaches of DE and EE. In other instances however, DE and EE have competed over space and legitimacy in driving the global agenda of education for sustainable development, a difference mainly expressed in emphasis on either environmental issues or social and economic issues (Hogan and Tormey, 2008). Within the EEM, the concept of ESD emerged in the 1980s amid global concerns and discussions around environmental protection and SD. ESD has been widely promoted in recent times, and has become a buzzword in global discussions on educational policies and programmes geared towards promoting SD, and later given significant impetus by the launch of the UN Decade for ESD in 2005 (2005-2014). The decade for ESD was to see to the integration of ‘the principles, values and practices of sustainable development into all aspects of education and learning, and to encourage changes in behaviours that allow for a more sustainable and just society for all’ (UNESCO, 2012: 5). ESD is said to have emerged to improve and strengthen EE, and to deal with issues of inequality, social justice, sustainability and North-South relationships, among other global development issues, which hitherto were missing in EE programmes in countries across the globe (Blum et al., 2013; Jickling and Wals, 2008). For this reason, ESD is thought to be a more all-encompassing educational approach to dealing with climate change and other SD issues.

The declared aims of ESD notwithstanding, there are those who see the shift from EE towards ESD as an attempt to homogenise EE across different countries, and warn that this move holds the risk of eventually reducing ‘the conceptual space for self-determination, autonomy, and alternative ways of thinking’ (Jickling and Wals, 2008: 4) around dealing with issues of environmental challenges. ESD has also been cited for being complicit with neoliberal economic growth that contributes to deepening inequality, poverty and environmental denudation, as well as advancing a neoliberal educational agenda that carries globalising forces and neocolonial tendencies (Selby and Kagawa, 2011). In light of the criticisms levelled against EE for its narrow focus on environmental issues and, latterly, of ESD for harbouring globalising and neocolonial tendencies, DE as an educational

practice could play an important role in addressing these shortcomings, given its roots in approaches informed by critical and postcolonial theories. But DE also has to collaborate more closely with EE and ESD in order to strike a balance between the pursuit of social and economic justice on the one hand, and environmental sustainability on the other (Hogan and Tormey, 2008).

Though many African states have committed themselves to ESD principles, and are incorporating these principles into their educational policies and programmes (UNEP, 2008), the term EE as a descriptor for educational policies and programmes aimed at addressing environmental challenges generally and climate change in particular, still dominate the narratives of environmental protection in the school curricula of some African countries. With regards to the conceptions and practice of DE in some African states, as for example in Ghana, DE is narrowly limited to citizenship education with a specific focus on promoting citizens' support for public institutions and policies, and therefore lacks in Freirean critical dimensions that empower citizens to be critical agents of change (Eten, 2015). The introduction of Freirean critical approaches of DE into existing DE and EE practices in some African countries therefore holds the prospect of strengthening these practices for SD.

Indigenous knowledge in development education discourse

DE's educational practice offers learning frameworks that question dominant paradigms and narratives of development that are disempowering and marginalising, particularly in the global South, and is motivated and driven by principles such as equality, justice, respect, inclusion and solidarity (Skinner et al., 2013). DE has its theoretical foundations in the ideas of Paulo Freire (1970) and is anchored in and guided by critical theories of education such as critical pedagogy and postcolonial theory. These critical theories within a discourse of DE seek to equip learners with critical competences to engage critically with local and global development issues and in the process examine assumptions held by themselves and others about people of the global South (Eten, 2015). Within such a liberating and empowering educational framework, this paper argues that DE discourses

can interrogate the negative assumptions held about IK as alternative forms of knowledge. DE can also create spaces for the inclusion of IK in educational processes (Odora-Hoppers, 2010), while highlighting its potential usefulness in EE for combating climate change in African societies.

Critical pedagogy promotes diverse and multiple ways of knowing and creates spaces in educational systems for IK to equip learners with broad perspectives of the human experience, but also uses indigenous knowledge as a counter-narrative to challenge hegemonic knowledge. Dei and Darko have noted that indigenous knowledge systems (IKS) can serve as alternative episteme and reference points for critical pedagogy ‘to challenge the prevailing dominant ideological, political and socio-economic apparatus, structures and systems of mainstream schooling’ (2015: 76). A similar view is expressed by Sandy Grande when she posits that, indigenous communities and their knowledge systems are ‘living critiques of dominant knowledge systems ... providing critical knowledge and potentially transformative paradigms’ (Grande, 2004, cited in Dei and Darko, 2015: 79). In the specific field of EE, critical pedagogy is of potentially immense value through DE discourse. This can be seen in David Gruenewald’s conceptualisation of ‘critical pedagogy of place’, a synthesis of critical pedagogy and place-based education. Gruenewald (2003) offers ‘critical pedagogy of place’ as an educational response that challenges commonly held assumptions that prevail in dominant cultures, while also providing an emancipatory pedagogy for decolonising educational systems in colonised societies, and placing education firmly within the ecological conditions of these societies.

Within a DE framework, postcolonial theory provides a counter-hegemonic narrative of development that seeks to deconstruct the impact of colonialism on colonised societies towards the reconstruction and transformation of current development in such societies (Kayire, 2015). Postcolonial theory, in doing this, seeks to counter the homogenising narrative of history that disregards the impact of colonialism and domination on colonised societies. Dei (2000) asserts that, an appreciation of indigenous histories and cultures of colonised societies must be a starting point, and

proceed from the situated account of colonised people themselves for a transformative dialogue in the decolonisation process. Dei further notes that colonisation and neocolonisation have thrived on the ascription of a false status and identity to colonised people through the privileging of western knowledge forms over IK forms. He therefore proposes an anti-colonial discursive framework as appropriate for discussing IK, which employs indigenous knowledge as an entry point in examining the power configuration that lie in knowledge production systems and how these contribute to maintaining and perpetuating colonialism in all its new forms in the current global order.

The case for IK in EE policies and programmes in Africa

IK, in this case, African Traditional Knowledge or rural people's knowledge or cultural knowledge in Africa (Millar et al., 2006) has been defined by Mosha as:

“local knowledge generated and transmitted, over time, by those who reside in a particular locality, to cope with their agro-ecological and socio-cultural environment; it is knowledge that develops from the experience of people, passed down from generation to generation” (1999: ix).

The import and relevance of this definition as it relates to EE pertains to the fact that IK evolves from a people's interaction with their environment over time, and gets embedded in their ways of living to become part of their cultural traditions and beliefs, whilst serving as a guide in discouraging lifestyles that may be injurious to the environment. IK is often contrasted with modern, scientific and dominant western-based knowledge (Boko et al., 2007), and often identified with various features, among which have been outlined by Senanayake (2006) as locally-based, orally-transmitted, inter-generationally transmitted, fragmented in distribution, sustained by repetition, and a product of practical engagement with the environment in everyday life.

The processes and benefits of adaptation to climate change are local, and cannot be meaningfully pursued without considering the local socio-cultural context within which knowledge is produced for use in such adaptation practices (Kpadonou, Adégbola and Tovignan, 2012). IK is often labelled as local and traditional because it is produced in a local context for solving local problems of the environment (Masuku van-Damme, 1997), and this explains why the usefulness of IK in climate change adaptation practices is popular (Boko et al., 2007; Downing et al., 1997; Wiid and Ziervogel, 2012). In rural communities in Africa, indigenous methods of weather forecasting are particularly useful owing to the inadequacy or non-availability of scientific weather forecasting instruments and weather data, and reliance on IK for weather forecasting, farming and food storage practices in such contexts is locally useful (Kaya, 2014; Risiro et al., 2012). There exists within African knowledge systems, the wealth of information on patterns of climate change and associated warning signs, crop varieties, planting seasons, vegetation patterns and changes (Dei and Darko, 2015), which are useful for climate change adaptation practices. The IPCC (2007) for example cites indigenous food security practices amongst women in Africa, who are able to use IK to select drought and pest resistant crop seedlings for planting to protect their families against food insecurity during droughts and famine.

The usefulness of IK to climate action and to development processes generally have been acknowledged in many global and regional policy initiatives that exist to protect and promote indigenous knowledge. For example, as far back as 1977, the intergovernmental conference organised by the United Nations Education, Scientific and Cultural Organisation (UNESCO) on EE produced twelve principles known as the Tbilisi Declaration to guide EE, and one of these principles emphasised the need to consider the diverse socio-cultural and historical context of learners in educating them about issues of environmental protection (UNESCO, 1978; Van Damme and Neluvhalani, 2004). This principle has served as a foundation upon which calls for incorporating IK into EE have been made.

A United Nations Conference on Environment and Development (UNCED) in 1992 ended with the adoption of a blueprint for SD, known as Agenda 21, which had some of its recommendations directed at strengthening indigenous communities' capacities to protect and use natural resources for the promotion of sustainable development (Van Damme and Neluvhalani, 2004). Discussions at the Rio Earth summit in 1992, having highlighted the usefulness of IK in achieving SD, put IK high on the agenda of policy discussions and initiatives, and thereafter saw the establishment of regional IK resource centres across the world.

The New Partnership for Africa's Development (NEPAD) also gives recognition to the importance of IK in efforts to surmount Africa's challenges to SD, and through NEPAD's policies and programmes, IKS are being protected and promoted (Kaya and Seleti, 2013; Muchenje and Goronga, 2013).

The challenges of IK in African education

Despite the innumerable benefits IK can bring to development processes generally, and to climate action in particular, educational systems in Africa are said to lack in IK; often described as de-contextualised (Shizha, 2013). The de-contextualised nature of Africa's education systems has been attributed to the continent's past colonial experience, which consciously subjugated African forms of knowledge (Kayire, 2015; Muchenje and Goronga, 2013; Ngugi, 1986; Senanayake, 2006). Odora-Hoppers (2002) has noted that, in colonial times IK was systematically omitted from history textbooks in African schools, and in their stead, western knowledge and cultures were promoted, a phenomenon that can still be seen in most educational institutions in Africa. Kayira (2015) has also noted that, the impact of colonialism has not only been felt in territorial expansion, but has affected the epistemological foundations of the colonised, and led to a knowledge power imbalance between Africa and the western world, which is further maintained and perpetuated by forces of neoliberalism and globalisation (Shizha, 2010).

An examination by Shizha of the school curricula of a number of African countries in relation to content and practice around IK has revealed that, postcolonial curriculum innovations in Africa have been heavily influenced by western countries, and that some of the changes that were introduced ‘were a “copycat” of Western curriculum forms’. These initiatives were carried out as projects promoted and sponsored by western countries and multilateral organisations like the World Bank (2010: 29). There are however a number of studies (Kayira, 2015; Mueller and Bentley, 2009; Shava, 2005) that point to the fact that some African states, especially in the southern African region, are beginning to mediate the influences of western forms of knowledge in their educational systems by introducing IK into their school curricula. A study by Mueller and Bentley (2009) on the Ghanaian Environmental and Science Education curriculum reveals conscious efforts of curriculum reform towards conserving and protecting IK on community ecosystems for a sustainable future. Discussions on the suitability of IK as valid knowledge and challenges of integrating IK into educational systems are well documented (Agrawal, 1995; Dei, 2002; Shizha, 2013), and a detailed rehashing of these challenges lies beyond the space of this paper.

Among these challenges regarding African school curricula, are issues of lack of autonomy on the part of African curriculum designers to incorporate IK contents into mainstream school practice without western influences. They also have to contend with the effects of globalisation and neoliberalism which continue to promote and spread Euro-American knowledge forms, while displacing IK in the process (Shizha, 2013). There are also concerns which stem from the heterogeneous nature of IK and limitedness in their potential general applicability to all contexts as well as their ability to fit neatly into standards of scientific enquiry (Agrawal, 1995). The documentation and discussions of these challenges may well be a good starting point to further action on systemising indigenous knowledge for the school curricula.

Conclusion

The persistent neglect of IK in African educational systems in post-colonial times cannot be entirely blamed on the entrenched knowledge power imbalance between Africa and the west, but also on the fact that, African elites, scholars and education policy makers are doing little to engage rural communities on their indigenous knowledge and practices towards the systemisation and incorporation of these indigenous knowledges and practices into the school curriculum (Kaya, 2013; Muchenje and Goronga, 2013). It may not be possible or even necessary to call for a replacement of western forms of knowledge in the African school curriculum, as there are obvious and enormous benefits to be gained from western knowledge forms. This article has instead called for IK to be revitalised and to occupy the African school curriculum side by side with western forms of knowledge (Dei, 2002; Muchenje and Goronga, 2013; Odora-Hoppers, 2002) especially for subjects that relate to the protection of the environment. There are global political and economic interests that stifle the incorporation of IK into educational processes in Africa and keep these forms of knowledge in the margins of development processes. However, a development education discourse around IK holds the prospect of exposing these global economic and political interests for what they are, whilst paving the way for the utilisation of IK to promote sustainable development in African states. Indigenous knowledge has the potential of building the adaptive capacities of people for climate resilient communities in Africa, and this underscores their usefulness in the African school curriculum and the urgent need for their revitalisation and utilisation.

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Acknowledgement: The author wishes to thank Prof. A A Apusigah, Dean of the Faculty of Education of the University for Development Studies, Ghana, for her useful comments on the draft of this paper.

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