Mindscapes and Landscapes: Grounding Sustainability Learning and Socio-Ecological Systems Education Under the Feet of Africa's Youth

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Introduction

> *"All Education is environmental education. By what is included or excluded, students are taught that they are part of or part from the natural world…" (Orr, 1994, P.12).*

Human-environment interactions are inevitable and have defined Africa's socio-ecological development processes for many years (Barton and Dlouh, 2014). Evidence of impacts of such interactions have become pervasively verifiable in most communities. From mass poverty, mass migration, biodiversity destruction, water and sanitation, public health, extreme disaster events, population growth, resource exploitation to violent conflicts within and between nations, these interconnected challenges manifest differently in many of Africa's diverse communities to define Africa's sustainable development challenges. Of significant concern is the fact that as these challenges unfold and manifest in their different forms, it is also becoming increasingly clear that the emergent reality of global climate change and associated impacts are exacerbating existing conditions (Collier, 2008; Hope, 2009a, 2009b; Kerr et al., 2017; Niang et al.,2014).

Perhaps even more worrying is the fact that as climate change unleashes its insidious impacts on local communities and socio-ecological systems in African, not many people, especially the youth, living in their different places, know and understand the challenges of the time and implications for sustainable development processes. They are not equipped with the

requisite capacity and disposition to respond to these challenges and neither do they have any real opportunities to bring their thoughts to current unsustainable practices and to help them build the capacities to respond. At the current rate of change, vulnerability and collective inaction especially from Africa's youth, there is no doubt that a lack of intentional processes of education, learning and pragmatic actions would render any prospect of sustainable development in Africa grim (). From this perspective, Africa's sustainable development prospects remain imperiled and while many factors are involved, there is no doubt that the lack of focused education and learning pedagogies especially in formal educational systems have contributed greatly in disengaging the minds and thoughts of Africa's young people from environmental and ecological issues.

The result is a generation of young people who care less about the systems of nature that supports their very existence. This, as I have indicated, is an education and learning issue and one that requires intentional actions of unlearning old habits and values, as well as relearning new ways of living and acting on a fragile planet. To be able to do this will require bold, proactive and pragmatic educational responses from both formal and non-formal educational systems; they will have to provide the requisite pedagogical logic to the socio-ecological challenges of the time (Manteaw, 2012). But, sadly, however, most of existing educational institutions, especially higher education, across Africa remain hopelessly ill-equipped and incapable of providing the needed leadership in this regard. Learning remains abstract and theoretical as the purpose of education is, for the most part, reduced to serving narrow economic rationalities and market-driven imperatives that ignore social, ecological and cultural considerations in education and learning ().

This paper foregrounds place-based education and experiential learning processes as an avenue to bring Africa's youth closer to nature and also as a way to bring the mindscapes of Africa's young people closer to the landscapes that support their existence. Using examples from higher education in Ghana, the paper demonstrates how teaching and learning could be 'grounded' in immediate local contexts to provide learners the opportunity to bring knowledge, as acquired in school lecture room, alive in local realities to facilitate the development of place attachment and socio-ecological competencies. Locating these discussions within student's field-based learning experiences in Ghana, the paper explores how such pedagogical practices influence students socio-ecological knowledge development, as well as their dispositions towards sustainability thinking and practices. More importantly, perhaps, the paper discusses how higher education in Africa can respond to current sustainability challenges with the appropriate pedagogical logic.

Mindscapes and Landscapes

> *"The ecological crisis raises fundamental questions about the dominant cultures way of knowing, its moral values, and its way of understanding human/nature relationships" (Bowers, 1997, p65).*

Africa's young are increasingly becoming disconnected and disengaged from the natural systems that support their existence. They have acquired tastes and lifestyles that somehow alienate them from socio-cultural traditions and practices. They have increasingly become technology obsessed and in the process have become o ecologically illiterate (Orr, 1992). All this is happening against the backdrop of a number of complex and interconnected socio-ecological challenges facing most of Africa's communities (Mutanga et al., 2013). Ranging from food and water securities, biodiversity loss, environmental degradation, population growth, sanitation,

surge urbanization, sanitation challenges and public health dilemmas, Africa's challenges are complexly nested and they define the sustainability and socio-ecological systems change challenges in most of in Africa (Kilroy, 2015).

These are enduring challenges that are currently being exacerbated by the insidious impacts of climate change. Unfortunately, however, and despite the increasingly pervasive evidence of climate change-induced social and environmental changes in Africa's different communities, most people, especially the youth, living in their diverse places lack awareness, knowledge and understanding of these changes and how they affect both individual and community lives. Not many are aware of the fact that human interactions with nature and nature's systems are both a cause and a function of current observed socio-ecological systems changes. This, as Orr, (1994) observed, is a sinful omission and one which is unfortunately widespread in many of Africa's communities. It constitutes what I describe in this work as a total disengagement of 'mindscapes' from landscapes.

In Mindscapes and Landscapes, therefore, I highlight the lack of appreciation of the linkage between human systems and natural systems and the fact that the underlying cognitive and learning imperatives of human-nature interactions are lost to many of Africa's youth. It is also what I describe as 'socio-ecological cognitive deficiency' which, in its simplest explanation, is the lack of understanding of the workings of the systems of nature and the appreciation of the complex interconnectedness of these systems (Capra, 2005). At the heart of this deficiency is the normalized tendency and the taken-for-granted assumptions of human entitlement to dominate nature and nature's resources. While science and education continue to equip humans with sophisticated knowledge, skills and technology to take and transform nature to serve almost all

our needs, our progress or development-focused actions, and inactions, have also demonstrated ever so often the human lack of the requisite wisdom to imagine what potential consequences we face if we do not change cause (Orr, 2016). It is inherent in this problem that the notion of cognitive deficiency, as implied in this work takes its meaning.

Even though the learning imperative in the current socio-ecological change and climate crisis is widely acknowledged, institutions of learning in Africa have been slow to provide the logical responses both in philosophy and approach. “Against the test of sustainability…” as Orr (1992) observed, “our ideas, theories, sciences, humanities, social sciences, pedagogy, and educational institutions have not measured up” (p.83). His observation is further corroborated by Norbeg-Hodge’s (2000) assertion that “[Modern Education] isolates children from their culture and from nature, training them instead to become narrow socialists in Westernized urban environment” (p.110-113). All these assertions may not necessarily have been directed at Africa in any particular way, but from current experiences they are as they are as apt then and even more so now. Educational thinking and practice in Africa remains colonial and obsessively focused on capitalist values that continue to cause grievous damage to socio-ecological and cultural systems. Education systems and approaches therefore remain complicit in the evolution of current socio-ecological challenges and Africa’s youth have become products and victims of these institutions.

The mindscapes of Africa’s younger generations are totally detached from the landscapes that support their very existence and in ways that validates This isolation and disconnection have contributed significantly to the lack of knowledge and subsequently the lack of leadership in current climate and environmental change challenges in many communities. To change this

means learning, and in particular, higher education institutions must be transformed. As climate change continues to unleash it insidious impacts on ecosystems, resources and communities, it has become even more worrying that not many people realize or understand how human modifications of natural systems have and continue to contribute to this phenomenon and also how the lack of understanding of its dynamics impede abilities to take appropriate adaptive actions. If human adaptation to climate change, either planned or autonomous, is a response to climate change impacts and socio-ecological systems changes, then the lack of knowledge and understanding of the dynamics of human-nature interactions and of socio-ecological systems change processes becomes a barrier to effective adaptation (Folke, 2016). To build the adaptive capacity especially of Africa's young people means creating experiential learning opportunities for young people to see how these problems emerge and evolve and how they could be addressed. People need to know and understand their roles in socio-ecological systems changes processes; they also need to appreciate climate change as both a cause and a function of socio-ecological change dynamics. It is in this regard that both climate change adaptation, resilience building and sustainability processes become learning issues (Loff, 2011); and, it is also the reason it becomes critically important that current efforts towards the building of adaptive capacity and socio-ecological systems resilience in communities consider the underlying learning imperatives and to respond appropriately.

In 'mindscapes and landscapes', therefore, I draw attention to a missing foundational piece in current sustainability discourses and socio-ecological systems change processes in Africa's different communities. In spite of current focused efforts towards achievement of the different Sustainable Development Goals (SDGs), There is an obvious disconnect between the

'inner landscapes' of local people — 'mindscapes', and the outer landscape which anchors their existence. Much as the focus here is on Africa, the disconnect between mindscapes and landscapes is widespread and largely taken for granted. Reality remains that the world is faced with a socio-ecological systems change crisis yet not many are aware or understand the linkages that exist between human actions or inactions on natural systems. This Ultimately, is a cognitive challenge and a learning issue which requires innovative and pragmatic pedagogic responses.

Place-Centered Sustainability Praxis and Pedagogy

"…our cultural experience is "placed" in the "geography" of our everyday lives, and in the "ecology" of the diverse relationships that take place within and between places". (Gruenwald,2008, p.137).

Place-Centered Sustainability Praxis, according to Evans (2012), is rooted in an ontology in which humans and their other-than-human neighbors exist and maintain systems stability through reciprocal relationships with each other in local places. As societies across the world, and more so in Africa, continue to face the stark reality of growing social inequality, economic uncertainties, environmental degradation and climate change challenges, the urgency for transformative solutions has become imperative and requires new approaches to how people live and act in their places. As these challenges evolve in their different forms to become ever more complex, it has also become increasingly necessary that focused attention is given to how we learn to live well in our places. Gruenewald (2003) has called this "decolonization and reinhabitation", a process of unlearning and relearning to know our places more intimately, to

understand how changes have happened in these places and to explore how to remake our places better. Similarly, Chambers (1999) has described this process as Self-Critical Epistemological Awareness (SEA), a processes of critical self-introspection to literally *see* what is wrong in the places we live and how we can live well in our places. I call this 'Place-Centered Sustainability Praxis and Pedagogy' to signify the much needed shift in paradigm towards education and learning for sustainability in local places.

Sustainability as has become increasingly common in contemporary development discourses has become the ultimate destination and the aspiration of many. While there have been many contestations regarding the meaning and application of both the discourses of sustainability and sustainable development, these contestations do not in any way suggest inaction and especially when verification of our unsustainable present requires no debates or augments. The socio-ecological and cultural degradations that constitute our unsustainable present are verifiably evident in our local places and if our behavioral choices are part of the problem then we have to find durable and potent solutions in the places we live. It is from this perspective that place-centered sustainability praxis finds its meaning and relevance. Place, and the importance of place in education and learning has been overlooked and underestimated over a very long time. For the most part, and to most educators, place is nebulous and its relevance as far as learning is concerned, is confined to the places of learning and in this regard the walls and built architecture of universities that defines the proverbial 'Ivory Tower'.

Thus, for the better part of history, education and learning especially in higher education all over the world have focused on classroom based pedagogical abstractions that have, for the most part, failed to bring any meaningful value to notions of place and the learning linkages that

exist between the places where schools are located and the immediate realities of such places. Formal education, as spearheaded by universities, have failed in the process to make the value of knowledge tangible within the immediacy of local realities and, it is from this perspective that various calls continue to be made for a paradigm shifts that reinvent education and learning. To do this means grounding education in local realities and to give students the chance to connect to a place, develop emotions, a sense of belonging and a care for place. The need to reinvent education, as Jucker (2002) advocates is to reconnect education to locality—the place where education and learning takes place.

Grounding Learning in Local Places

"Institutions of higher education are not well structured to encourage renaissance thinking; yet the logic of environmentalism requires no less."

To challenge the above assertion, a group of us, faculty, involved in sustainability and climate change teaching and research at the University of Ghana to embark on what we described at the time as transgressive pedagogies. Transgressive in the sense we go against conventional practices and bureaucratic rigidities to defy an existing tradition of class-room based learning. So, in 'grounding learning under the feet of our students, what we did was to institutionalize a culture of place-based education or place-conscious education. We unleash students into local communities and ask them to make creative connections between intellect and experience (Bath et al. 2007). We create the requisite situational opportunities for students to bring knowledge alive.

Greenwood and Smith (2008,) and others who have spearheaded this pedagogical tradition over the years have called it Place-Based Education (PBE) or Place-Conscious Education (PCE). Other parallel traditions such as Service Learning, Experiential Learning and many others have since emerged; truth remains that all these traditions challenge the rigidity of classroom based learning and champion outdoor learning approaches not as an alternative pedagogy, but as complementary. Greenwood and Smith (2008) have defined Place-Based-Education as a learning approach which introduces "children and youth to the skills and depositions needed to regenerate and sustain communities". This is made possible through the acknowledgement of local phenomena as an extension of the lecture room and a place to actualize theoretical knowledge as acquired in schools. In keeping to this tradition and in our desire to ground socio-ecological learning under the feet of our students, we send students s out into local communities to explore socio-cultural and ecological issues and to explore transformative solutions. As expected, different labels have been given to this approach; some have called it project-based learning or experience-based learning. However, what we have come to appreciate is that names or labels are immaterial; they at best help in providing a name, but what is key is the purpose for which the pedagogical tradition is aimed at achieving.

From Semester to semester we consciously embarked on what we chose to call "Sacred Cartography", a process of intimate engagement with the places of our communities. Sacred in the sense that students are on a mission, a critically important mission in a particular place with a view to making the place better. Both faculty and students take this seriously by engaging with community members explore critical socio-ecological and sustainability issues. Issues of climate change, water resources, food security, sanitation, public health, deforestation, environmental

degradation etc. are some of the common issues that students engage with. Students are challenged to take theories as they have learned in school classrooms and apply them in local contexts to explore solutions.

We define local broadly and much as it constitutes the immediate contexts of the location of our university, we also acknowledge the fact that students have come from all over the country; in fact, some have come from other African countries. Where and when necessary, we embark on field trips to carefully selected sites across the country and challenge students to identify critical issues of concern and demonstrate how they converge or diverge from lecture room theories. The aim of this exercise is to move away from the narrow and rigid lecture-room pedagogies that are practiced in abstract terms. That is our transgression, and as part of the mission to ground learning under the feet of students, subjects such as community water, waste and sanitation are discussed first in local communities where the problems exist.

Theoretical discussions may have taken place prior in lecture rooms, but we move the discussion into communities to provide opportunities for learners to experience the issues in real time and to imagine how they have come about and how they can be resolved. Here issues of cause and solutions are discussed and in most instances, as students eventually find out, solutions to some of these challenges are not only social, economic and environmental they are governance issues with political implications. The desire for holistic approaches to these place-based challenges clarifies notions of sustainability and sustainable development to students. More importantly students begin to realize that the challenges of sustainability in most local communities are governance issues and justifies the growing call for governance to be made an intrinsic part of any discussion on sustainability in Africa.

Lessons Learned

Increasingly, our "transgressive pedagogies" seem to be making significant impacts in the lives of our students and also in the communities that we visit. First, we have observed and recorded a significant shift in *students'* attitudes to learning. We call that: ***Transformative learning*** *and attitudes.* Here we have noticed that students' experiences in local communities and their efforts to understand socio-ecological issues eventually make them develop stronger pro-environment and social change attitudes. They embrace what we call ***sustainability behaviors****.* So our conclusion is that such pedagogic approaches and exposures help students to develop sustainability attitudes. Secondly, we have also observed that exposures of students to complex situations enhance their ***Personal Skills Development*** which enhances their performances both as students' and eventual professionals. This is confirmed in literature where is noted that professional skills training must be complemented with opportunities for personal skill development ((Arnold and Lermen, 2009; Barth et al., 2007; Barton and Dlouh,2014; Mintz and Tal, 2014; Molderez and Fonseca, 2017). ***Pragmatism and Agency*** is also a key attribute that we have seen developed by our students.

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There seem to be a disconnect between the 'mindscapes' of Africa's people and the landscapes that support their lives. This is especially the case among the younger generation whose obsession with western modes of thought and ways of living is fast-eroding traditional and time-tested socio-cultural affinity for nature and nature's resources. Formal educational philosophies, politics and approaches in most of Africa are complicit in this decline as education and learning processes at all levels rarefy theoretical approaches and narrow economic rationalities that prepare young people for job-readiness. Along this line, Orr, (1992) gained that warned:

> Not only are we failing to teach the basics about the earth and how it works, but we are in fact teaching a large amount of stuff that is simply wrong. By failing to include ecological perspectives in any number of subjects, students are taught that ecology is unimportant for history, politics, economics, and so forth. And through television they learn that the earth is theirs for the taking. ()

David Orr's assertion is not one that was made in history; it is applicable to Africa today as it was when the observation was first made. Most educational institutions in Africa continue to deny young learners in Africa the opportunity to acquire the capacity to observe and study the systems of nature in the places they live; they also deny them the chance to delve into nature and to make creative connections between theory, intellect and experience (Slattery, 2006). The result, as has become evident in most African communities, is the emergence of multitudes of young, care-free and technology-obsessed young Africans whose minds are devoid of any thoughts or knowledge about the life-sustaining dimensions of the global community (Orr, 1992).

The reach and expanse of the problem is still evolving, but it is undoubtedly a function of wrongful living and unsuatainable practices. Ultimately it is an educational issue requiring conscious processes of unlearning and relearning. The architecture of this necessary venture is what this study attempts to set out.