NEOLIBERAL GLOBALISATION, SCIENCE EDUCATION AND AFRICAN INDIGENOUS KNOWLEDGES

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INTRODUCTION

The imposition of neoliberal globalisation and Eurocentric science education in Southern Africa raises questions on how African people develop their African humanity and sociability. Neoliberal globalisation has been imposed on African educational philosophies to determine curriculum developments and implementation, especially in science and technology. Neoliberal globalisation and indigenous knowledges are in a state of contestation. Indigenous knowledges have become colonial captives within science education that ignores indigenous philosophies as peripheral to contemporary society. If neoliberal globalisation marginalises indigenous African knowledges/sciences, how can African students and people reclaim indigenous sciences to act upon their natural world? Indigenous knowledges are known for their resilience and ability to describe, explain, predict and negotiate nature. Can African indigenous philosophies and ways of knowing survive the onslaught of neo-colonialism and globalisation?

In this chapter, I define African indigenous science as culturally-specific knowledge that belongs to the original peoples of Africa that is based on their philosophies. The knowledge incorporates their social and natural wellbeing, their cosmos and their spiritual world. It includes plant biology, the ecological system, manufacturing, agriculture, food processing, civil engineering, animal husbandry, medical practices, transportation, mining, and communication (Snively & Corsiglia, 2001). Indigenous science catalogues contextual everyday activities, objects and events and interprets how the local environment works through a particular cultural perspective to interpret and understand social and natural phenomena. In addition, rational observation of natural events, classification, and problem solving are woven into all aspects of indigenous cultures. It is a science that should be alive in contemporary African schools because it is a living science that mirrors the peoples’ lived experiences. Students exposed to this knowledge are capable of making sense of their lives and develop a cultural identity that is symmetrical to their social and cultural communities, and acknowledges their existence. Non-indigenous people ostensibly criticize African science as lacking rationality and relevance to contemporary technical life. They argue that ‘western’

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science epitomises advanced contemporary societies and is an epistemology for a fact-transmission oriented pedagogy.

This chapter argues that indigenous knowledges and sciences contribute to global knowledge and help in identity formations of African indigenous learners. It also discusses how African students can become knowledgeable in both African indigenous knowledges and Western dominant scientific knowledge through critical pedagogies and a pedagogy of place. A hybridisation of sciences provides students with critical philosophies in developing scientific knowledge, skills and attitudes, if the social contexts of science education are emphasised.

LITERATURE REVIEW

Curriculum Policy and Science Education

An important intellectual challenge posed by globalisation is how Enlightenment science interacts with traditional non-Western worldviews. The battle by indigenous communities to achieve empowerment and self-determination through the preservation, protection and revitalisation of their cultures eroded by colonisation, Western culture, and more recently by globalisation has experienced a renaissance as indigenous communities have recognised the importance of documenting and sharing their cultural heritage. Recent events and studies indicate that indigenous knowledge has been recognised as a valuable science that deserves recognition in the school science curriculum. The formal education that indigenous African students receive does not merely serve the purpose of transmitting formal lessons and bestowing credentials, but also develops social and cultural identities. Nevertheless identities built on cultural learning are under threat from neoliberal constructs of scientific knowledge. Neoliberal globalisation creates artificial wants, both material and symbolic, often leading to individualism and the destruction of communities, ecology, and cultures.

A scrutiny of science curriculum innovations implemented in most African countries indicates a Western bias in the content and practice that alienates African students. The effects of science education on students’ identity formations are largely determined by the science curriculum in place, in this case, Western. Innovations introduced after independence did not focus on the culture and the place of learners in science learning raising critical questions about whether innovations were introduced to please foreign donors or to bring about substantive changes in education. Expectations were that after independence African governments would decolonize their science curricula by integrating socio-cultural perspectives.

While curriculum changes were deemed necessary to refocus knowledge and pedagogy on African perspectives, research indicates that most curriculum changes were promoted by outsiders, mainly Western governments and donors. Some changes were ‘copy cats’ of Western curricula. In Francophone Africa, curricula were borrowed from France and implemented with little or no local input (Holsinger & Cowell, 2000). In South Africa, the origins of an outcomes-based