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The Pluto Problem: Reflexivities of Discomfort in Teacher Professional Development

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ABSTRACT

This article utilises narrative inquiry as a means to explore reflexively our roles as two scholars/teacher educators with extensive experience in education and international development initiatives in East and Southern Africa. It focuses on a teacher professional development program in Tanzania we helped initiate and facilitate for more than five years whose aim was to promote more critical, learner-centred approaches to teaching across the country's secondary school curriculum. We narrate several key incidents from the program that led us to examine our complicity in establishing and maintaining the very hierarchies of knowledge production and dissemination the program sought to challenge. Throughout, we engage reflexively with postcolonial theory in an effort to provincialise the Anglo-American assumptions about pedagogy implicit in learner-centred approaches to teaching that form a key aspect of contemporary global education reform.

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[T]here is no modernity without coloniality.

–Escobar, 2007, p. 185

Introduction

Friday, July 3 – Moshi, Tanzania: Forty-five Tanzanian secondary school teachers moved in small groups from one station to the next during the Activity Circus as they experimented with innovative teaching aids created from low-cost, locally-made materials. As participants in the Teaching in Action workshop, a week-long teacher professional development program led by a team of Tanzanian and U.S. teacher educators, the Tanzanian teachers experienced five days of learner-centred demonstrations designed to model the kind of active, engaged teaching promoted by the facilitators. Matthew, one of the authors and U.S. facilitators, stood at the Solar System station. He presented each group of teachers with scrambled planets he had cut to size out of construction paper and asked them to put the planets in order based on their distance from the sun. Magreth,¹ a Tanzanian geography teacher, helped her group to align the planets but seemed puzzled by a missing orb. 'Where's Pluto?' she asked Matthew, and he repeated the question back to her with a wry smile, as though perplexed by her query. 'Yes, where's Pluto?' Magreth asked a second

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time, and her Tanzanian colleagues also chimed in. Matthew explained to the teachers that Pluto was no longer considered a planet as it had been declared a dwarf planet in 2006. Magreth and her fellow teachers were incredulous. 'It's in our national syllabus that Pluto is a planet,' she explained. However, there was no time for further discussion once the bell rang for Magreth's group to move to the next station. They responded sceptically to Matthew's promise of finding information to verify this change in Pluto's status. After the Activity Circus ended, Matthew consulted with the other facilitators, with the Americans agreeing that Pluto was no longer a planet and the Tanzanians unsure about the matter. He then went to the computer lab, typed 'Pluto' into the search engine, and found that in 2006 the International Astronomical Union had, indeed, demoted it. Matthew printed this information and handed it to Magreth, who shook her head in disbelief and exclaimed, 'Why weren't we told about this?'

Western² schooling is undoubtedly one of the most enduring colonial legacies, and its impact on the curriculum, language of instruction, and testing regimes continues to be keenly felt around the world. During the past two decades, the fields of education and critical development studies have begun to move beyond the study of colonialism's vestigial effects on the content and organization of schooling to examine its enduring influence on the production, codification, and dissemination of knowledge itself. In this article, we utilise '*the Pluto problem*,' introduced above and elaborated below, as a metonym for a larger set of relations of power concerning the production and dissemination of knowledge in which we ourselves are implicated as scholars in the global North whose research and engagement with teachers has been primarily in the global South. Some of the questions generated by our reflexive analysis of these relations include the following: Who is authorized to determine meaningful and ostensibly universally-accepted categories of knowledge, such as planetary status in this case? Who does or does not have ready access to new knowledge about these categories? Who is positioned to convey this putatively 'modern' and irrefutable information to others? How might global norms about 'good' pedagogy reinscribe colonial hierarchies of knowledge and power?

These questions lie at the heart of the postcolonial³ critique of education and development as evidenced by several recent special volumes. For instance, the 60th anniversary issue of the *Comparative Education Review* entitled 'Contesting Coloniality: Rethinking Knowledge Production and Circulation in Comparative and International Education' aims to 'bring[...] to the fore the rarely acknowledged colonial entanglements of knowledge in the field of comparative and international education' (Takayama, Sriprakash, & Connell, 2017, p. S1). Similarly, a special issue of *Cultural Studies* on 'Globalization and the De-Colonial Option' illustrates an emerging 'modernity/coloniality research program' that 'reaches towards the possibility of non-eurocentric modes of thinking' marked most prominently by 'a hegemonic representation and mode of knowing that claims universality for itself' (Escobar, 2007, p. 184).

This critical exploration of the 'coloniality of power' (Grosfoguel, 2007; Quijano, 2007) parallels the growing interest in narrative inquiry as a means of fostering greater reflexivity by scholar-practitioners in the fields of education and critical development studies (c.f., Mosse, 2013). Defined somewhat differently depending on one's discipline, narrative inquiry in the social sciences generally means the recounting and analysis of stories that emerge from interviews, fieldnotes, and observations as told by research

participants and/or the researchers themselves (Clandinin & Connelly, 2000; Fox, 2008). As Connelly and Clandinin (2006) suggest,

narrative inquiry, the study of experience as story, then, is first and foremost a way of thinking about experience. Narrative inquiry as a methodology entails a view of the phenomenon. To use narrative inquiry methodology is to adopt a particular narrative view of experience as phenomena under study. (p. 477)

A recent example of the use of narrative inquiry to contest coloniality in education comes from Khoja-Moolji's (2017) study of 'decolonial praxis' in a teacher professional development (TPD) program in Pakistan. She explains that her use of a narrative inquiry approach enabled her to more fully 'interrogate the assumptions that structure norms of knowledge production and transmission,' and, in particular, 'assumptions about universal knowledges and distant, neutral, and detached speaking subjects' (p. S154).

Similar to Khoja-Moolji, we contend that narrative inquiry has the potential to advance decolonial educational praxis through its problematization of claims about the universality of certain kinds of knowledge as though untethered to the specific colonial histories that enabled its production and dissemination. However, we go a step further in arguing that narrative inquiry employed in this way is not only valuable for scholars in/from the South but also for researchers like ourselves based in Australia (Matthew) and the U.S. (Frances) who have served as conduits through which 'universal knowledge' flows from North to South. We consider this work with narrative inquiry to be deeply connected to and consistent with Chen's (2010) call for processes of deimperialisation amongst those implicated in imperialism as well as for decolonisation amongst the colonized.

As the Pluto problem suggests, we were involved in the development and facilitation of the Teaching in Action (TIA) program for Tanzanian secondary school teachers from its inception in 2007 to its expansion in 2015 at a second higher education institution in Tanzania. Along with our fellow U.S. collaborators,⁴ we were implicated in key incidents when we were 'giving knowledge,' as the Tanzanian teachers put it, whenever we presented information to which they did not have equal access. More frequently, though, we found ourselves pressing the teachers to question their own knowledge about good teaching whenever their beliefs and practices did not align with our own views, which we recognized more clearly over time as 'provincialized' in a particular Anglo-American tradition of pedagogy rather than reflective of supposedly universal norms of good teaching (Chakrabarty, 2000). Through the telling of several illustrative narratives from this TPD program, we use our experiences and critical examination of them as a way to foreground the common complicity of Northern education scholar-practitioners working in the South in the perpetuation of the coloniality of power. These moments raise critical questions about the broader global structures of knowledge production and dissemination, their ties to colonialism and imperialism, and, most personally, our own locations as educational development scholars and practitioners.

Specifically, we seek to perform a two-fold task in this article. First, we want to move to the forefront of educational studies an analysis of how 'modes of knowing' may differ for different teachers, meaning how knowledge for teachers is produced, and how and by whom it is disseminated (Quijano, 2007, p. 169). Teachers working in former

colonies – such as the United Republic of Tanzania that experienced both German and British rule – must contend with colonialism as a formally defunct mode of governance and the perpetuation of coloniality in the material, cultural, and epistemic domination by organizations and ‘experts’ from, or educated in, the North who, like ourselves, are often centrally involved in the design and implementation of educational development programs.

Our second task is to employ narrative inquiry to enable critical reflexivity on our own practice as U.S.-educated researchers and teacher educators who have played a central role in promoting in the South a particular approach to teaching and learning – learner-centred pedagogy (LCP) – without sufficiently engaging with the ‘epistemological diversity’ evident among participants in the TPD process (de Sousa Santos, Nunes, & Meneses, 2007, xix). *Intellectually*, we recognized at the time the different socially-situated experiences and knowledges that the Tanzanian teachers and teacher educators and the U.S. facilitators drew upon during the program (Vavrus, Thomas, & Bartlett, 2011); however, the two of us have had the longest engagement with the program among the U.S. team and an extended opportunity to contemplate together the moments when we did not fully recognize this diversity. It is these moments that form the narrative arc of this article.

In the following pages, we examine our complicity in promoting an ostensibly universal pedagogical approach without engaging sufficiently with the alternative epistemological claims made and held by Tanzanian teachers. Our interest is not in discerning whether the teachers are drawing on pre-colonial, indigenous views of education, as some postcolonial scholars seek to illuminate (Takayama et al., 2017). Rather, our concern lies in interrogating our own certainty about LCP as synonymous with ‘good teaching’ based on constructivist, child-centred ‘truths’, and how this conviction may have inhibited our ability to appreciate the distinctly different views about knowledge and intergenerational hierarchies expressed and demonstrated by many of the teachers in the program. Chen (2010) calls on scholars ‘not to repeat the mistake of an imperialist knowledge paradigm that maps an abstract and universal theoretical framework onto the earth’ (p. 64); to this end, we employ narrative inquiry as part of our own reflexive practice to, ideally, ‘learn not to repeat’ it in our scholarship and future practice.

In the field of education, Pillow’s (2003) scholarship shares an affinity with Chen’s deimperialisation project in calling for ‘reflexivities of discomfort’ as ontological, epistemological, and methodological work (p. 188). By this Pillow means that researchers should employ reflexivity as more than a method for increasing rigour or validity in one’s design. The discomfort, she contends, should ‘[push] us to question and deconstruct what is most hegemonic in our lives’ (2010, p. 278). We aver that such discomfort and reflexivity ought to be part of any serious critique of the politics of knowledge production and dissemination in which education scholars and practitioners, such as ourselves, are implicated.

The remainder of the article is organized as follows. First, we situate our work within critical development studies, which questions the concept of ‘development’ and its deployment by First World states (e.g. U.S./U.K.), largely for their own economic and political purposes. Second, we highlight how postcolonial scholarship has informed our reflexivity. Third, we describe the teacher education context in Tanzania and TPD program in which we were involved, and fourth, we narrate three incidents when our

positionality in this context reflected the ‘epistemic dominance’ of knowledge from the North (Takayama, Sriprakash, & Connell, 2107, p. 6). The concluding section reflects on these narratives in the context of the Pluto problem.

Education and the ‘development’ of the ‘global south’

The effort to address poverty and inequality on a global scale is a relatively recent phenomenon. Prior to the establishment of the United Nations in 1945, colonial powers paid little attention to the education and health of the colonized populations beyond that which was necessary to fill key administrative posts and maintain a viable workforce. The period from the 1920s through the late 1940s, especially in Africa and Asia, witnessed a shift from colonial discourses in which native populations were generally regarded as incapable of economic development without colonial intervention, to a developmentalist discourse in which the poverty of these populations became a problem to which new technologies and interventions could be applied. The ‘problematization of poverty’ in the immediate postwar period created a space for ‘experts’ in a variety of fields, including education, to apply theories and techniques developed in wealthier nations to the alleviation of poverty in poorer countries. As Escobar contends, ‘Everything was subjected to the eye of the new experts: the poor dwellings of the urban masses, the vast agricultural fields, cities, households, hospitals, schools, public offices, towns, and regions’ (1995, p. 41).

Within the UN system, UNESCO, founded in 1946, had initial responsibility for educational matters. Its mandate included the promotion of educational opportunities for all children, and it sponsored conferences of educational experts and political leaders, especially from countries that had recently gained independence and were seeking to fulfil promises to their populations for increased access to education. The World Bank, which began its educational lending program in 1962, has become the largest external funder of education in the countries of the global South, and between 1963–1984 more than half of the nearly 300 education-related projects it funded included a teacher education component (Haddad, 1985). Today, it is estimated that two-thirds of World Bank projects in education have an element of teacher education (Popova & Evans, 2016).

In addition to multilateral agencies, other bilateral organisations have supported teacher education, including aid agencies of Australia, the United Kingdom, and the United States. In the case of the latter, teacher education in East Africa was one of the first endeavours of the United States Agency for International Development (USAID), which was established in 1961 by President Kennedy. The 10-year program, known as Teachers for East Africa, sent both experienced and inexperienced U.S. teachers to Kenya, Tanzania, Uganda, and Zanzibar to serve in the country’s secondary schools and teacher training colleges (Vavrus, 2018); by its conclusion in 1971, more than 60% of the primary school teachers in the region who attended teacher training colleges during this period had been taught by Teachers for East Africa tutors (Graham, 1972).

The late 1970s and 1980s were a time of great economic turmoil in many low-income countries owing to the global debt crisis and the demands placed on these countries by the World Bank and the International Monetary Fund if they were to provide financial assistance (Phillips, 2011; Samoff, 2003). Despite the very limited education budgets in many countries at this time, the Education for All movement sparked by the 1990 EFA conference created tremendous pressure on governments and donor agencies alike to

increase funding for primary education to achieve the goal of universal primary schooling. This helped create a space for non-governmental organizations (NGOs) to expand their work in low-income countries. Indeed, by the year 2000 more than 10,000 NGOs were operating in Tanzania (TANGO, 2013).

The degree of influence of international development organizations on the education systems in low-income countries varies greatly depending on the organization's size, status, and funding, and on the political and economic situation in the countries themselves. Overall, Tanzania has received more than two billion dollars per annum in official development assistance and official aid between 2007 and 2016, among the highest recipients of aid in sub-Saharan Africa (World Bank, 2018). Organizations like the World Bank, with billions in U.S. dollars to lend, have a great deal of influence, from the conditions that governments must meet to qualify for loans to the strategies and frameworks they produce that shape what is possible within the field of international development. Smaller NGOs, such as the ones that funded the Teaching in Action program, are more circumscribed in their operations, but they still tend to rely on 'experts' from the North to develop, facilitate, and evaluate teacher education programs in the South.

Postcolonial theory

Debates surrounding the term *postcolonialism* have circulated since its use became more common in the critical social sciences of the late 1980s. Some scholars, particularly historians, object to the 'binary axis of time' suggested by the hyphenated version of the term, *post-colonial* (McClintock, 1992, p. 85). Others find the concept of 'colonial legacy' too homogenous to recognize fully the varied forms of colonialism and the wide-ranging responses to them across various histories and sites of domination (Featherstone, 2005). Moreover, the 'elasticity' of postcolonial theory has led some scholars to question whether it is too broad (Moore-Gilbert, 1997, p. 11). Despite these objections, a number of researchers working specifically in education have found productive ways to employ postcolonial theory and related concepts to explain the continuities and disjunctures in educational practice, philosophy, and policy in former colonized states (c.f., Tikly, 2004; Williams, 2019).

Conceptualisations of postcolonialism vary, in part because of the different disciplinary emphases of those employing the term. Literary critic Leela Gandhi (1998), whose book on postcolonialism is read widely across disciplines, offers the following: '[P]ostcolonialism can be seen as a theoretical resistance to the mystifying amnesia of the colonial aftermath. It is a disciplinary project devoted to the academic task of revisiting, remembering and, crucially, interrogating the colonial past' (p. 4). Education scholar Anne Hickling-Hudson (2006) proposes a slightly different meaning, for she describes it as 'the thinking that deconstructs the operations of Eurocentrism in colonial and neo-colonial polities, and that develops alternative analyses and propositions based on different ways of knowing.... knowledges of indigenous and colonised peoples suppressed and hidden by the hegemony of Eurocentric education' (p. 205).

Another angle on postcolonialism is provided by political historian Dipesh Chakrabarty (2000), who seeks to interrogate the claim that social theory emanating from Europe is, in fact, 'universal'. He refers to this part of the postcolonial project as

‘provincializing Europe’ because his objective is to show how ideas that have come to be regarded as universal, such as Marxist notions of social class, arose in a particular era and place and were influenced strongly by existing European traditions of thought. Yet this recognition of ‘provincialism’, Chakrabarty claims, has been lost. He contends, in reference to European social theorists, ‘They ‘do not ask of themselves any questions about the place from where their own thinking comes. They presumably produce their criticisms “from nowhere” or – what is the same thing – [from] “everywhere”’ (pp. xvi–xvii). Mignolo (2011) similarly highlights the seemingly ahistorical development of Western thought, largely perceived to be universal rather created in a specific temporal and geographical context, which in recent centuries has assumed privilege over other, previously co-existing epistemic traditions.

This view from nowhere/everywhere is particularly well described in sociologist Raewyn Connell’s book, *Southern Theory* (2007) and in the special issue of *Comparative Education Review* mentioned earlier that she co-edited (2017). *Southern Theory* provides a critique of ‘general theory,’ which Connell believes is the quintessence of ‘Northern theory’ as embodied by the work of sociologists like Bourdieu, Durkheim, and Weber: ‘By general theory I mean theorising that tries to formulate a broad vision of the social, and offers concepts that apply beyond a particular society, place or time. Such texts make propositions or hypotheses that are relevant everywhere, or propose methods of analysis that will work under all conditions’ (p. 28). In contrast, *Southern Theory* is largely devoted to the examination of knowledge produced by various groups in the global south all the while maintaining a focus on the physical and intellectual violence of colonialism, a theme also explored in Chen’s seminal text, *Asia as Method* (2010). In the next section, we turn to examine one specific context of the global south, Tanzania, and both its colonial history and postcolonial present.

Teacher education in Tanzania and the teaching in action program

Historical overview

The present-day nation-state of the United Republic of Tanzania has a long and rich precolonial history, but now represents the union of two separate historical entities: Tanganyika and Zanzibar. Initially known as German East Africa, Tanganyika became a Protectorate of the League of Nations after World War I and administered by the British until its independence in 1961. Meanwhile, Zanzibar was home to the Omani Sultanate before being subsumed under British rule, and ultimately attaining independence in 1963. These two states joined together in 1964, and continue to function jointly. The primary context of this article, however, is mainland Tanzania.

Teacher education in Tanzania largely followed the national political movements of the country. Under president Julius Nyerere, the initial post-independence era emphasised increasing nationalism and expansion of access to education, which had been considerably restricted under both German and British rule (Mushi, 2009). For example, the University of East Africa – the primary higher education institution at the time – graduated only 99 students in 1961. The arrival of new initiatives such Teachers of East Africa therefore provided an influx of teachers and teacher educators with higher education and teaching experience, albeit in a drastically different educational context.

Teacher training colleges soon blossomed, and their curricula likewise mirrored political movements of the era. Evidence of Nyerere's turn towards self-reliance and African socialism could be seen in the teacher training curricula. As a means to serve the nation pre-service teachers were encouraged to conduct research in *ujamaa* (collective) villages and were assessed on their commitments to self-reliance projects. Despite the seeming convergence of political and educational goals, concerns remained about the overall quality of education as well as the quality of teaching.

This condition continued through the 1970s until a new, market-oriented period was firmly established in the mid-1980s. Due to international financial institutions' core focus on the 'holy grail' of primary education (Samoff, 2003, p. 9), teacher education received minimal investment for nearly two decades. After a considerable policy reversal from these institutions, which had forced Tanzania to charge fees for primary students to attend school based on the guidance of foreign experts, Tanzania abolished school fees in 2001 (Vavrus & Moshi, 2009). This led to massive increases in pupil attendance, but also increases in the pupil teacher ratio, which reached 58 pupils per teacher in 2004 (UIS, 2018).

The teacher education landscape in the country has changed somewhat during the past 15 years. The pupil teacher ratio had dropped to 43 by 2014, and many new teacher education institutions and programs have emerged throughout the country (JMT, 2014). Pre-service teachers are now trained in both universities and colleges, with bachelor's degrees qualifying teachers to work in upper secondary level and diplomas in teacher education for lower secondary. However, few teachers have bachelor's degrees, and these programs have been criticized for continuing to be overly theoretical. In sum, the issues and institutions related to teacher education in Tanzania have changed over the years, yet one consistent theme is the involvement of external educational actors.

The teaching in action program

The Teaching in Action program was launched in 2007 in response to a growing emphasis on learner-centred pedagogy (LCP) in sub-Saharan Africa and, most specifically, in Tanzania. Alongside the Education for All movement, LCP emerged as one of the *en vogue* global educational reforms among international development organisations (Schweisfurth, 2013), and as a result, for national governments seeking their support (Tabulawa, 2003; Vavrus & Bartlett, 2013). Educational policies and strategic plans in Tanzania began in the early 2000s to reflect this new discourse on active teaching methods and more inquiry-based approaches to teaching and learning. Further embedding LCP into the Tanzanian education system, in 2005 the Ministry of Education and Culture⁵ produced a new set of curricula that outlined explicit expectations for Tanzanian teachers, who should now 'use only those participatory and learner-centred strategies' (MOEC, 2005, p. v).

Yet this new approach marked a significant departure from what Tanzanian teachers experienced as students in their primary/secondary schools and teacher training institutions, which almost universally rely on more didactic, teacher-centred lecturing. As such, many pre-service teachers at the institution where TIA began were stymied as to

how to implement pedagogical approaches that seemed to belie their social, material, and even political conditions. These tensions suggested to the Tanzanian and U.S. facilitators that the pre-service teachers would benefit from a deeper exploration of LCP and its congruence with the Tanzanian context.

Thus, Teaching in Action emerged as a weeklong teacher professional development workshop where Tanzanian teachers could learn and practice more dialogic and participatory teaching methods. Small seed funding from a U.S.-based non-government organization enabled 30 Tanzanian secondary school teachers to attend the inaugural workshop in 2007. Each weeklong TPD workshop was preceded by a series of pre-planning sessions where all facilitators would meet together to discuss how and what to teach during the following week's workshop. By 2010 the facilitation team comprised nine Tanzanian teacher educators and seven scholars/graduate students from the U.S., with more than 65 teachers in attendance. That year the facilitators also followed some of the teacher/participants back to their schools to examine their experience in implementing LCP (Vavrus & Bartlett, 2013).

Implicit within the TIA program were assumptions about what 'good pedagogy' entails. Given the Tanzanian teachers' lack of familiarity with LCP in practice, each morning of the workshop included a presentation by the facilitators that utilized the methods being explored in the session. This served as a means for the Tanzanian teachers to see, feel, and experience LCP. We also prepared responses to the concerns and critical questions we anticipated from the teachers based on past workshops, such as how one can teach using LCP in large classes.

Hierarchies of knowledge in teacher professional development

As U.S.-educated scholars co-facilitating a TPD program with Tanzanian teacher educators, we were confronted with multiple tensions and questions, many of which concerned hierarchies of knowledge and the ways in which international development organizations aim to reform education systems in the global South. As critical scholars who believed the TIA workshop served as a form of pedagogical praxis, we increasingly recognized neo-colonial relations of power inscribed in our approach to 'good teaching' whilst failing to grasp fully the epistemological diversity amongst the TIA participants (de Sousa Santos et al., 2007, xix).

In what follows, we analyse three experiences from our collaborative work in Tanzania from 2008 to 2015.⁶ These narratives emerged from our co-facilitation of the TIA program, specifically from our fieldnotes and the daily debriefing conversations we had when working together in Tanzania. In addition to these sources of data, reflexive discussions in 2016 about these events enabled a more critical exploration of our thinking and understanding of the phenomena (Connelly & Clandinin, 2006), both during the workshops and at the present time. As such, we selected these examples because of the ways they reflected persistent tensions experienced by the participants and by ourselves as facilitators.

How is it defined?

After a brief period of direct instruction with the 2015 TIA participants, I (Matthew) posed a short group task to teachers at the TPD workshop. They huddled in small groups and quickly began completing the activity. After several minutes, I held up two fingers and said,

'We'll come together in a large group in two minutes.' When two minutes were nearly expired, I counted down from five to zero to regain participants' attention, and to allow them to finish their sentences. I had used this approach many times across diverse contexts (e.g. Australia, Indonesia, United States), and generally it works the same way.

Yet this time was different. While counting down from five achieved the goal of regaining the groups' attention, it sparked considerable controversy. As we began our large group discussion, one participant noted, 'We have even seen that you are using the "countdown method" to get our attention. We can use that in our teaching!' Another participant quickly chimed in, 'Yes, but is it a method or a technique?' A third suggested it was an 'instructional strategy,' and soon a considerable argument ensued amongst the participants. I had defined it neither as a method nor as a technique but had merely used it in my facilitation of the workshop. Given that the session was not focused on the 'counting down' or other strategies for regaining students' attention, I tried to satisfy our colleagues by suggesting that teachers might call it a variety of different terms but that the important point was its pedagogical utility. Yet it was clear that they deeply desired a resolution to this method/technique quandary. It was also clear they would continue debating the distinction instead of sharing the results of their small group activities unless the matter was settled. The two of us (Matthew and Frances) decided on the spot that we might bypass this debate by labelling it an 'approach,' which we did and then continued with the session. It was clear, however, that some participants still felt the matter was unresolved, as chatter about methods, strategies, techniques, and approaches could be heard during the tea break after the session.

One of the most frequent moments of discomfort for us during the TPD program occurred when we were pressed to give definitions of terms or concepts, and when the Tanzanian teachers and teacher educators 'fixed' a process we had demonstrated by giving it a formal definition. At first we viewed these moments as examples of what some TPD researchers in South Africa termed 'forms over substance,' as in the posing of questions to students (the form of LCP) but only asking questions that require discrete knowledge of facts rather than abstract, analytical thinking (the substance) (Brodie, Lelliot, & Davis, 2002). We often heard the Tanzanian facilitators define terms in a formal manner, as in 'debating is a method of teaching whereby...'. We knew that definitions like these were often asked on the national exams and reflected a particular form of knowledge production and dissemination, but we continued to feel that defining terms conflicted with the more analytical skills for knowledge generation we sought to privilege in the program. Given the emphasis in constructivism on the production of knowledge through social interaction, it was not surprising that we emphasized in the TIA program an inductive process of learning by doing the activities to discover the key principles that defined a concept rather than using a deductive approach where we defined terms first and then illustrated the principles and activities associated with them.

Whose knowledge counts?

The second vignette further elaborates on the differences in the kinds of knowledge privileged by many of the Tanzanian participants in the TIA program compared to the knowledge we felt mattered most. One of the supposedly universal beliefs about education that the U.S. facilitators held dear was that teachers should assess their students' prior knowledge. We viewed it as the foundation from which lesson

planning should begin because we considered it critical to build on what students already knew about a topic. During pre-program planning sessions with the Tanzanian teacher educators who would later help co-facilitate the TPD sessions, they also agreed that this was important, though not necessarily common in Tanzanian schools. Together we set out to model a basic Q&A pattern that teachers could use at the beginning of the first lesson on a new topic, and we had K(now)-W(ant to learn)-L(earned) charts and other techniques at the ready to demonstrate for this purpose.

During the second year of the TIA workshop, in 2008, Frances and a Tanzanian colleague, Fatima, led the first session of the workshop on the concept of multiple intelligences using an interactive lecture method, which involved writing some of the notes from the lecture on the chalkboard but intentionally leaving gaps to model a way of promoting more active listening. The session had three aims: to discover prior knowledge, teach the subject of multiple intelligences, and model the interactive lecture method. Frances had started the lecture by asking the teachers what they already knew about multiple intelligences, and we noted their key terms and phrases on flip-chart paper at the front of the seminar hall. At the end of the interactive lecture, following a discussion of its content, Fatima and Frances sought to engage the teachers in a meta-teaching discussion of what we did during the session and why. The interactive lecture method for promoting more active listening made sense to the group, and there was a lot of nodding as Fatima talked about how teachers could use it in their classrooms with only a blackboard and a piece of chalk as teaching aids. In contrast, the rationale for Frances' question to find out what they already knew about multiple intelligences was not well understood.

An older male teacher with a very sceptical look on his face raised his hand high in the air.

'Madame,' he stated firmly, 'if you ask students what they already know about a topic, they will think you do not know about the topic yourself.'

'Ndiyo, ndiyo' [yes, yes], some teachers quietly murmured as he spoke. Fatima and Frances asked the teacher to elaborate, and he, joined by others, explained that students will think a teacher is 'fishing for answers' among the students by asking students for definitions of new terms or explanations of concepts at the beginning of a lesson on these concepts. They argued that it is different when a teacher asks such questions the day after he has taught the correct information to students because then the students will know that these are review questions, testing their knowledge of what the teacher has already taught.

Had the teachers in the 2008 TIA program been the only ones to have raised this objection to eliciting prior knowledge, we would have written it off as a query from an older, less-informed group of in-service teachers. Yet it arose again and again, suggesting that perhaps this was not, as many educational scholars and development practitioners might assume, a matter of Tanzanian teachers not having access to 'modern,' Western knowledge about good pedagogy. Rather, upon further reflection, we realised there was an epistemological difference about what constitutes knowledge evident in the teachers' frequent objection to this kind of knowledge elicitation. Extant relations of power in Tanzanian schools, and limited access to the internet and to current books/journals, have generally led to teachers acting as the primary source of academic knowledge for most students.

What is essential about an essential question?

The final vignette illustrates another ‘universal’ pedagogical principle upon which the TIA program was built but which, upon further reflection, was not nearly as widely accepted as we had initially imagined. The Tanzanian and U.S. facilitators agreed on the importance of higher-order thinking skills and the use of techniques that are supposed to promote it, such as posing an ‘essential questions’ at the beginning of each lesson to help develop analytical and evaluation skills and to provide a structure for the unfolding of the learning process. A component of the work on ‘backward design’ made popular by U.S. authors McTighe and Wiggins (2013), an essential question:

- (1) Is *open-ended*
- (2) Is *thought-provoking* and *intellectually engaging*
- (3) Calls for *higher-order thinking*
- (4) Points toward *important, transferable ideas* within (and sometimes across) disciplines
- (5) Raises *additional questions*
- (6) Requires *support* and *justification*, not just an answer.
- (7) *Recur*s over time

(p. 3)

We quickly discovered that these points were understood differently by the U.S. and Tanzanian facilitators:

In the pre-program planning sessions for the TIA workshop, we discussed the reasons for developing Essential Questions using examples related to the program itself. These included questions like ‘Why would we as teachers want to promote active learning?’ or ‘How can teachers promote analysis in the chemistry/English/mathematics classroom?’ We assumed that these prompts, as examples of Essential Questions themselves, would help facilitators consider the questions they would use in their own facilitation during the actual TPD workshop. Yet we noticed that some of the Tanzanian facilitators struggled with the concept itself. They were each supposed to describe to the rest of the facilitators the model subject area lessons they were going to present during the workshop. In the case of chemistry, the lecturer proposed using the following Essential Question: ‘How is electroanalysis mechanism in the lab?’ For English, the facilitator suggested, ‘Analyse how public debate format can improve the language ability of students in secondary school.’ In the first case, we struggled to understand the question itself. We also noticed that it was not, in fact, open-ended because the facilitator explained that he sought the specific electrochemical methods by which electroanalysis can be conducted. In the second case, it was not a question at all – a common occurrence – and, as in the first case, the facilitator sought as responses the same list of reasons for using public debate to improve language ability that she subsequently listed in her lesson plan.

When the TIA workshop did commence, we noticed the Essential Questions of in-service teachers took many forms. A few met Wiggins and McTighe’s criteria, but the vast majority of those written on the blackboards throughout the week did not. Instead, they read like the following: ‘Essential Question – Identify types of friction.’ ‘How can you construct a domestic DC power source using diodes?’ ‘What are the major sources of food?’ In short, what seemed essential to our Tanzanian colleagues about an essential question was that it could be taught directly and recalled precisely by students.

The differences illustrated in these vignettes are likely due to a number of factors. One of the most important is that, as in the first vignette, definitional questions are similar to those on

the high-stakes examinations completed by graduating secondary school students (see Vavrus & Bartlett, 2013). As such, the main concern of the Tanzanian teachers may have been to effectively prepare students for an examination with close-ended items, rather than to cultivate the so-called higher-order thinking skills that have come to be promoted around the world through the export of models like backward design and techniques like starting a lesson by posing an open-ended question. Moreover, the pedagogical approach the Tanzanian teachers used reflected their experiences as students themselves; in this sense, the teachers were building on their ‘apprenticeship of observation’ (Lortie, 1975). They and the teacher educators modified ‘universal’ approaches and methods aimed at promoting certain kinds of knowledge production and dissemination to make them consistent with the forms of knowledge they valued, especially the teaching of discrete definitions and facts.

Conclusion

These narratives illustrate our reflexivities of discomfort and raise questions about international engagement in TPD in Tanzania and beyond. The Pluto problem encapsulates one dimension of this discomfort regarding the uneven dissemination of knowledge and unequal conditions under which such knowledge is produced: In this case, no Tanzanian scientists appear to have been part of the international team that made this scientific decision. Therefore, we found ourselves in the uncomfortable position of informing Tanzanian geography teachers about recent scientific declarations that invalidated their knowledge.

Another dimension of our discomfort represented by the Pluto problem is the way that the promotion of specific pedagogical forms – even the creation of model planets from construction paper – can reproduce inequalities and perpetuate colonial relations of power. Tabulawa (2003), who views LCP as ideological and political, suggests that “a universalised pedagogy necessarily marginalises pedagogies based on alternative epistemologies (p. 220). Even while LCP may not be as tied to marketisation as Tabulawa posits, we concur that the promotion of certain kinds of questioning, such as the Essential Question, may conflict with well-established hierarchies of knowledge production and dissemination, and leave minimal space for other forms of knowledge to emerge.

We conclude by admitting that there are no easy solutions to the Pluto problem. As teacher educators who have spent 10–25 years working in the education sector in Tanzania, we receive frequent requests to participate in teacher professional development programs. Yet as critical scholars who take seriously the critiques that postcolonial theory demands, we are wary of the ways that our continued involvement in such programs may further entrench relations of power surrounding the production and dissemination of knowledge we seek to challenge in our scholarship and engagement. Or, to put it in Mignolo’s (2011) framing, the universal notions of (pedagogical) modernity that are inseparable from coloniality. In the absence of clear answers, we remain committed to asking difficult questions about the means to decolonise and decentre the broader structures of which we are a part (c.f., Connell, 2018), meanwhile using our reflexivities of discomfort as a guide, an often difficult but necessary guide, whenever we consider how to engage, if at all, in TPD in the global South.

Notes

1. The names of the Tanzanian teachers and teacher educators are pseudonyms.

2. There is no straightforward terminology to capture the distinction we are making between the institutions and individuals privileged by enduring colonial relations of power and those who are marginalized by them. There are Tanzanians who have studied in the North/West/First World whose views on Western knowledge are little different from those born in these regions, and our perspectives have been strongly influenced by years of living and working in the South/non-West/Third World. Following the lead of others (Khoja-Moolji, 2017), we use each of these terms throughout the article even as we acknowledge their geographical, intellectual, and political limitations.
3. Exploring the nuances between concepts such as ‘postcolonial’, ‘neo-colonial’, ‘decolonial’, etc., is considerably complex and beyond the scope of this specific paper. Moreover, as Williams (2019) notes, ‘the prefix “post” in postcolonial may be deceptive in that it blunts the capacities of independent nation-states in recognizing how dependencies still exist’ (p. 2). Its problematic elements notwithstanding, we use ‘postcolonial’ in this piece to reflect the broader history and body of postcolonial theory upon which we draw, not to suggest that colonialism/imperialism has ended.
4. The Teaching in Action program was produced and co-facilitated by many individuals over nearly a decade. While any attempt to name all of the contributors would be impossible, it is vital to note that the program progressed due to the commitments of these collaborators.
5. The Ministry of Education and Culture has since changed its name to the Ministry of Education and Vocational Training.
6. The Teaching in Action program is now completely facilitated by our Tanzanian colleagues. This reflects the original design and intent of the program: Tanzanian ownership and facilitation increased as reliance on external donors and facilitators decreased. We believed this would help improve the sustainability of the program and its potential benefits for the teachers, teacher educators, and the institution hosting the program.

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