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Comparative Pedagogies and Epistemological Diversity: Social and Materials Contexts of Teaching in Tanzania

FRANCES VAVRUS AND LESLEY BARTLETT

This article examines how epistemological differences regarding knowledge production and material differences in the conditions of teaching influence teachers' and teacher educators' understandings of learner-centered pedagogy. Emerging from a 5-year collaboration between teams of US and Tanzanian teacher educators, the research focuses on six Tanzanian secondary schools whose teachers participated in a workshop on learner-centered pedagogy and pedagogical content knowledge. We find that teachers' views of knowledge production are profoundly shaped by the cultural, economic, and social contexts in which they teach. We conclude not only that teachers' working conditions are important contextual factors in comparative studies of schooling but that the conditions themselves need to be conceptualized more fully in theories of knowledge production and global/local reforms of teacher education.

Much of the teaching of mathematics, science and literacy and language may have some common international pedagogic structures. But how knowledge and skill can be transmitted and acquired clearly does have contextual and cultural dimensions that suggest effective PCK [pedagogical content knowledge] should be derived from local good practice. (Lewin 2004, 11)

If prospective teachers are going to be able to provide good reasons for their educational actions, they must begin to account for and examine the constraints under which they operate. If teacher educators are going to be honest about prospective teachers' futures, they need to recognize what the work of teaching entails. (Liston and Zeichner 1991, 67)

In 2006, Mwenje University College of Education (MWUCE) in northern Tanzania was launched with the goal of promoting learner-centered pedagogy and critical thinking among the country's future secondary school teachers.¹ This constituent college within the Catholic university system of Tanzania has expanded rapidly since it began, with fewer than 100 students in 2006 to more than 1,400 students today. Its preservice teachers are taught by ap-

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¹ "Learner-centered pedagogy" (LCP) is used in this article as an overarching term to describe the principles and methods common to pedagogical approaches grounded in constructivism, while also recognizing that there are differences among approaches derived from this theoretical perspective (see Chisholm and Leyendecker 2008).

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proximately 60 full- and part-time faculty members from Tanzania, Kenya, and various countries in Europe and North America on short-term appointments. They teach a full range of university preservice courses in the core content of the secondary school curriculum, including biology, English, and mathematics, as well as courses in educational psychology, curriculum development, and teaching methods.

Since 2007, as faculty members from two US schools of education, we have been working with students from our institutions and faculty members at MWUCE to plan and conduct the Teaching in Action (TIA) program, a 1-week “refresher course” on LCP and pedagogical content knowledge (PCK) for Tanzanian secondary school teachers.² In July 2010, in addition to conducting TIA, we worked with a team of faculty at MWUCE and current or former doctoral students from our institutions to conduct, over 6 months, a study at six focal high schools in northern Tanzania involving 23 of the 72 teachers who participated in the TIA workshop.³ The purpose was to explore how these teachers understood and implemented learner-centered teaching methods in the cultural, political, and socioeconomic contexts in which they work. Through classroom observations, focus group discussions, and interviews with the participating teachers, as well as our own reflexive practice as an international research team, we have been studying the ways that both epistemological differences regarding knowledge production and material differences in the conditions of teaching shape teacher education projects designed through international collaborations. This 5-year collaboration has revealed numerous insights into the tensions surrounding efforts to promote LCP in contexts in which local teaching practice is based on different assumptions about knowledge production and dissemination. Additionally, our work with Tanzanian teachers and teacher educators has made it clear that pedagogical change in Tanzania is profoundly constrained by the social and economic conditions of teaching, such as large numbers of students in small classrooms, limited teaching and learning resources, and hierarchical struc-

² One of the authors, Frances Vavrus, spent the 2006–7 academic year at MWUCE as a Fulbright Scholar. Previously, she had been a high school teacher in the same region of Tanzania and has been conducting research in the area intermittently since 1996. In 2008, the second author, Lesley Bartlett, joined the TIA team. The TIA workshop itself has been supported by two nongovernmental organizations, AfricAid (United States) and Planet Wheeler (Australia), while the research for this study was funded by the Open Society Foundations, the TAG Philanthropic Foundation, and research grants from Teachers College and the University of Minnesota. The Tanzania Commission for Science and Technology granted research approval for the project.

³ The members of the 2010 TIA workshop and research team, in addition to Vavrus and Bartlett, are as follows: Maria Jose Bermeo, Theresia Boniface, Audrey Bryan, Edward Kileo, Denis Mbilinyi, Emmanuel Mogusu, Robert Mossi, Augustina Mtanga, Dorothy Ngarina, Allen Rugambwa, Victorini Salema, Matthew Thomas, and Tamara Webb. Data from this project are “owned” collectively and are being used by different team members for individual and joint research projects, including a collaboratively authored book manuscript in which each chapter is being written jointly by one Tanzanian and one US researcher (Vavrus and Bartlett, forthcoming). It should be noted that “US researcher” and “US research team” in this article denote those affiliated with our US-based universities, not location of birth or primary region of cultural identification.

tures of authority. These are concerns shared by others as noted in the epigraphs above (Liston and Zeichner 1991; Lewin 2004). Through an extended period of reflective practice, we have attempted to take this recognition a step further. We contend that teachers' working conditions are not only important contextual factors in comparative studies of schooling; the conditions themselves need to be conceptualized more fully in theories of global/local reform of teacher education.

In comparative education, globalization has generated a lively debate regarding the extent to which there is convergence around a similar set of policy prescriptions and values (e.g., Anderson-Levitt 2003; Baker and LeTendre 2005). We certainly recognize that schooling and teacher education are, in some respects, becoming more isomorphic, but our research in Tanzania demonstrates that there is far more global convergence at the level of policy than in its instantiation in practice. LCP has undoubtedly become a central feature of contemporary "traveling policies" (Lindblad and Popkewitz 2004) about education reform in countries as diverse as Botswana (Tabulawa 1997, 1998, 2003), China (Carney 2009), Guinea (Anderson-Levitt and Diallo 2003), Mongolia (Steiner-Khamsi and Stolpe 2006), and Namibia (Ralaingita 2008). In this article, we also consider how this system of reasoning about teaching and learning has influenced policy in Tanzania during the past few decades through education and economic reforms promoted by international development organizations and teacher educators, a process in which we ourselves are implicated.

Despite the insights of the neoinstitutionalist perspective, our data make a much stronger argument for diversity in policy implementation because policies, such as pedagogical reforms, are always "reassembled, connected, and disconnected" when they encounter alternative systems of knowledge production and educational practice (Popkewitz 2005, 9). Therefore, the principal sections of the article examine this reassembly of LCP through a multisited study of Tanzanian high school teachers as they seek to employ learner-centered methods in their classrooms. Through ongoing discussions with members of the research team, we have begun to develop a view of epistemology in relation to pedagogy as one shaped profoundly by the cultural, economic, and social contexts in which teachers teach. We seek to draw attention to pedagogy—defined below as both teaching and its attendant theories—as contingent. By this we mean that pedagogy is deeply influenced by the cultural and material conditions in which teachers teach and by the different perspectives on knowledge production and dissemination held by educators in different social locations. Without privileging the perspective of any group of teachers as being somehow closer to a universal "pedagogical truth," we contend that these conditions of teaching ought to be employed more fully in making sense of epistemological diversity among educators about educational knowledge production and dissemination. This area has

been greatly understudied and has led to certain pedagogical approaches, such as LCP, being taken up as a globalized form of knowledge and as a source of “best practices” disseminated through policy and professional development programs without recognizing that such practices also embody situated knowledges.

This “contingent pedagogy” perspective draws on the work of social theorist Boaventura de Sousa Santos in considering how LCP serves as both a form of “globalized localism” and “localized globalism” as it traverses transnational boundaries and becomes reconstituted in different contexts (Jenson and de Sousa Santos 2000, 9). We argue that the spread of LCP and the assumptions about knowledge production it embodies has “globalized” particular understandings of teaching and learning that arose in specific cultural contexts and assume certain material conditions for teachers. Yet globally circulating ideas are always reconstituted in local contexts, such that, in this case, LCP becomes “localized” amid the cultural, economic, and political conditions in which it is implemented. We also incorporate de Sousa Santos’s concept of “epistemological diversity” into our work in suggesting that LCP, and constructivism more broadly, be conceptualized as part of an extensive ecology of pedagogy rather than as the foundation on which to build a set of global “best practices” for teachers (de Sousa Santos et al. 2007, xix). We contend that this approach would foster greater appreciation for and analysis of the diverse social and material constraints within which teachers work.

In the pages that follow, we begin by presenting an overview of the conceptual framework for this study, rooted in the notion of epistemological diversity, and of the growth of learner-centered education policies in sub-Saharan Africa as seen through the lens of globalized localism. We then focus on the Tanzanian case, beginning with changes in its education policy over the past few decades and followed by an exploration of how global visions of LCP intersected with existent pedagogical practices in a process of becoming localized by Tanzanian teachers in their schools. We conclude by considering the implications of this study of local/global teacher education for contexts of education reform beyond the specific case of Tanzania and for the field of comparative education.

Conceptual Framework: Power/Knowledge and Epistemological Diversity in Teaching and Teacher Education

Critical social theorists who situate their work in solidarity with the global South recommend attention not only to authoritative knowledge generated by scholars and policy makers in the global North but also to the varieties of knowledge that emerge from radically different cultural, economic, and political circumstances (including what is sometimes simplistically called “local” knowledge). As de Sousa Santos et al. argue, there is tremendous global diversity in “conceptions of knowledge, of what it means to know, of what

counts as knowledge, and how that knowledge is produced” (2007, xxi). The concept of epistemologies shares much with the concept of culture, including the possibility that educational researchers and practitioners will have radically different interpretations of it (Hoffman 1999; Stephens 2007). Informed by widespread anthropological debates regarding the meaning of culture, we conceptualize it neither as a static body of meanings nor as a group of humans who share understandings but rather as the ongoing process of humans creatively adapting to one another, to social structures, and to political and economic institutions “under both perduring and emergent circumstances” (McDermott and Varenne 2006, 8). Moreover, we contend that people use sometimes conflicting and sometimes congruent ways of knowing, or epistemologies, in this continuous process of adaptation. Ways of knowing about pedagogy—including those ways sanctioned through government-sponsored teacher education programs and nongovernmental professional development projects—are inextricably linked to, and constrained by, cultural, social, and material contexts.

From this perspective, theories of knowledge and knowledge production occur within and are shaped by context; epistemology is local rather than omniscient. Furthermore, we concur with de Sousa Santos and colleagues who contend that “the production of knowledge is, in itself, a social practice and what distinguishes it from other social practices is its self-reflexivity” (2007, xxi). In this view, all knowledges are situated and partial, none is absolute, and knowledges develop in relation to engagement with other knowledges. Thus, one would seek to subvert a “monoculture of knowledge,” which, de Sousa Santos et al. suggest, is based on positivist notions of science, vestigial colonial relations, and global capitalism, and to foster an ecology of knowledges. Notably, they are not suggesting epistemological relativism but instead want to “allow for a pragmatic discussion of alternative criteria of validity,” which includes the usefulness of (social) scientific research to promote social justice (2007, li).

Epistemological diversity has significant implications for the study of pedagogy and teacher education. First, it suggests the importance of considering the various epistemologies and their political commitments engaged in professional development. As Keith Lewin and Janet Stuart demonstrated in their five-country MUSTER study of teacher education, different approaches to teacher education are intimately related to theories of learning, ontology, and epistemology.⁴ The transmission mode, with its roots in behaviorism and positivism, predominated among teacher educators in the institutions they examined. Improving teacher education, they argue, would require training that develops “professional reasoning ability” as well as “an epistemological shift towards a view of knowledge that recognises the value of teachers’ per-

⁴ MUSTER stands for the Multi-Site Teacher Education Research project, and it included the five countries of Ghana, Lesotho, Malawi, South Africa, and Trinidad and Tobago.

sonal, experiential and craft knowledge as well as the public propositional knowledge offered in college” (Lewin and Stuart 2003, xxix–xxx).

Second, epistemological diversity signals the importance of historically, politically, and socially situating all knowledges. From this perspective, there are no knowledges that should be relegated to the imaginary “premodern,” as if untouched by colonialism, capitalism, or other major global forces. At the same time, no ways of knowing should be naively embraced as unproblematic or beyond the realm of contestation. All knowledges, it is argued, should be seen as contemporary, imbricated, partial, and situated.

Third, epistemological diversity highlights the view that theories of knowledge and knowledge production (including those held by teachers and teacher educators) occur within and are shaped by cultural, social, economic, and political contexts. As Daniel Liston and Kenneth Zeichner contend, analyses too often ignore the “social conditions of schooling,” including how institutional contexts affect the work of teachers and “how the students’ class or ethnic backgrounds affect how they teach” (1991, 66). From this point of view, it is essential to situate teachers’ understood and enacted theories of teaching and learning in social and material contexts. Likewise, professional development efforts should be contextualized; outside Europe and the United States, in particular, the materials used in teacher training are too often not culturally or socially grounded. As Lewin argues, on the basis of the MUSTER study, “PCK that is nationally grounded is widely unavailable. Training content [is often] derived from external sources (method books published internationally, lecture notes from overseas training courses etc), and in major subject areas is not based on grounded classroom based research. This is a partial explanation as to why some key dimensions of PCK (teaching large classes, multi-grade strategies for small schools, language code switching, constructivist approaches to lesson planning) are often absent” (2004, 11).

What does it mean to have epistemologies or training materials “derive from” local practice? We return to this dilemma in the second half of the article. First, however, we trace the historical arc of LCP as an instance of globalized localism to illustrate how a particular pedagogy has become authorized and organized globally through schools of education and international development organizations.

Globalized Localism

The Dissemination of Learner-Centered Pedagogy

LCP is rooted in the progressive paradigm of education, which emerged from the ideas of eighteenth- and nineteenth-century educational thinkers, such as Jean-Jacques Rousseau, Johann Pestalozzi, and Friedrich Froebel, and is perhaps most closely identified with the work of John Dewey. Dewey argued that progressive education should emanate from students’ interests, prior

knowledge, and active investigation, and he called for students to apply knowledge and skills learned in school to solve real-world problems. In his comparative study of contemporary pedagogy in France, India, Russia, the United Kingdom, and the United States, Robin Alexander found that US teachers' versions of teaching were often explicitly explained with reference to Dewey and Piaget and that they employed two primary versions of teaching: "teaching as democracy in action (in which knowledge is reflexive rather than received, and teachers and students are joint enquirers)" and "teaching as facilitation (respecting individual differences and responding to developmental readiness and need)" (2001a, 519). He found a similar emphasis on facilitation in the United Kingdom but less on democracy; nonetheless, Alexander concludes that there is more pedagogical convergence between teachers in the United States and United Kingdom than among the three European countries in the study (the United Kingdom, France, and Russia) and that India is "the clearest example of transmission model" due to both its pedagogical history and the material conditions of teaching (2006, 726).

Although widely espoused today by teachers and teacher educators in many countries, the principles and practices associated with LCP developed gradually in the United States over the twentieth century (Cremin 1957, 1961; see also Kliebard 1987) and blossomed in the late 1960s and 1970s (Ravitch 1983). LCP has evolved in constant tension with content-centered emphases, such as the "back to basics" reform efforts of the 1980s and the more recent stress on standards initiated under No Child Left Behind, resulting in what historian Larry Cuban (1993) calls "teacher-centered progressivism," a blend of learner- and content-centered strands of pedagogy that has endured to the present (see also Cuban 2008). Nevertheless, learner-centered approaches predominate in many schools of education, especially in Anglo-American contexts, under various terms, including "active learning" and "inquiry-based pedagogy."

Since the 1990s, enthusiasm for student- or learner-centered pedagogy has spread globally even though it embodies culturally specific (and somewhat arbitrary) ideals of individualism, competition, democracy, and appropriate classroom cooperation. This localized pedagogy, developed in a specific material context of generally abundant textbooks, laboratories, and access to information and communication technologies, has been exported to quite different material contexts. LCP has become a globalized localism, obscuring much of its cultural, historical, and material specificity. We demonstrate in the next section how LCP has become particularly prominent in education policy in sub-Saharan Africa during the past decade, even though the transmission model of teaching predominates on the continent.

Learner-Centered Pedagogy in Sub-Saharan Africa

Since the adoption in 1990 of Education For All as a global goal, classrooms across sub-Saharan Africa have expanded rapidly to accommodate children seeking primary schooling (UNESCO 2008). Yet the increase in access led quickly to concerns about educational quality, with reforms proposed to address not only limited material resources for schooling but also the quality of instruction. Over the past decade, national governments and international development organizations have increasingly decried the teacher-centered transmission models common throughout sub-Saharan Africa. In response, national curricula in Botswana, Malawi, Mali, Namibia, South Africa, and Tanzania, among others, have made analysis, creativity, critical thinking, and problem solving more prominent.⁵ Revised policies for primary, secondary, and teacher education in these countries now include phrases like “learner-centered,” “inquiry pedagogy,” “participatory teaching,” “critical thinking,” “child-friendly methods,” and “constructivist strategies” (Vavrus et al. 2011). The stated aim of these reforms is to move teachers away from standard “learning by rote” methods toward alternatives that encourage inquiry among students as they develop, research, and reflect on new ideas (Leyendecker et al. 2008). However, these reforms do not account for the social and material challenges to adopting such pedagogical approaches.

One of the first challenges to pedagogical reform is that the theories, debates, and methods associated with LCP are often quite unfamiliar to the teachers and teacher educators who are meant to carry out this policy reform. Lewin and Stuart’s five-country study of teacher education concludes that preservice teachers gain little experience in using new pedagogical approaches because they do not see these approaches modeled in teacher training colleges (2003).

Second, the mandated curricula and the high-stakes examination systems in most sub-Saharan African countries undermine the use of inquiry-based pedagogies. Although curricula for primary and secondary schools and teacher education programs now incorporate LCP, high-stakes national exams in many countries continue to assess students’ knowledge of discrete, factual information, or declarative knowledge, rather than more complex cognitive skills (World Bank 2008). If teachers do not “cover” all of the topics in the syllabus but rather engage students in deeper analysis of a few of them, students may perform poorly and be denied the chance to attend college or university (Leyendecker et al. 2008).

Third, the material conditions in many schools, in which students and teachers often lack basic books and supplies, can make the implementation

⁵ See Ministry of Education and Culture (2001b), USAID (2002), Namibia Ministry of Basic Education, Sport, and Culture (2004), Chisholm and Leyendecker (2008), Tabulawa (2009), and Mtika and Gates (2010).

of constructivist pedagogical approaches quite difficult. Overcrowding, lack of textbooks, low salaries, and administrative demands on teachers' time are significant challenges (Vavrus and Bartlett, forthcoming). Furthermore, teacher education faculty members have difficulty supervising large numbers of preservice teachers at distant schools during their teaching practicum when vehicles are limited, funds for gasoline reimbursements are restricted, and dirt roads are difficult to navigate during rainy seasons (see Robinson et al. 2002).

There is some, albeit limited, research into these material constraints on teacher education in sub-Saharan Africa (Weller-Ferris 1999; Lambert 2004; Weber 2007). However, an obstacle to the transformation of pedagogical practices that has received even less attention by scholars of African education is the epistemological difference in conceptualizing knowledge from a constructivist perspective as suggested by LCP and other inquiry-based approaches. If, as we contend, epistemology and materiality are interrelated, then one would anticipate the formation of localized globalism when ways of teaching "borrowed" from the global North are appropriated by teachers in countries of the global South, where teaching resources are typically much more limited and where cultural assumptions about teacher-student relations are strikingly different.⁶

One of the most compelling efforts in this direction, although not focused on sub-Saharan Africa, is Alexander's work to establish pedagogy as a more central focus of comparative and international development education research. As he reminds us, pedagogy "encompasses both the act of teaching and its contingent theories and debates about, for example, the character of culture and society, the purposes of education, the nature of childhood and learning and the *structure of knowledge*" (Alexander 2001a, 513; emphasis added). Alexander calls for the socially situated study of the interplay among these elements and across contexts (2001b). His more recent work critiques the very limited analysis of culture and pedagogy in international indicator studies (2006). He notes that attempts to measure educational quality—by looking at the number of teachers and school infrastructure, for example—generally ignore pedagogy, the cornerstone of quality. It is into this debate over global pedagogy and local contexts that we enter through the case of Tanzania and the ways that LCP has become localized through the social and material conditions in which it is employed.

⁶ We greatly appreciate the attention paid by Chisholm and Leyendecker to educational practices that emerged as part of anticolonial movements and "incorporated educational ideas that reverberated with learner-centred education" (2008, 196). Our own research on the history of education in Tanzania supports this view, as discussed in the following section (see also Vavrus and Bartlett, forthcoming); however, our primary focus remains on global policy dynamics in the post-1990 era and how these dynamics have influenced the adoption of particular aspects of LCP in national education policy in sub-Saharan Africa.

Localized Globalism: Learner-Centered Pedagogy in Tanzania*The Tanzanian Policy Context*

The United Republic of Tanzania presents an ideal opportunity to explore the aforementioned debates about LCP in policy and practice because the past two presidential administrations have fully embraced it in the country's educational policies. Tanzania also makes for an important case because its initial approach to education after independence from the United Kingdom in 1961 had some qualities ascribed in later years to LCP. In 1967, the government of President Julius Nyerere instituted an education policy based on experiential learning in the form of Education for Self-Reliance. This policy proposed that schools at the primary and postprimary levels become economically viable through farm and workshop projects. The concomitant Africanization of the curriculum was intended to draw on the expertise of local Tanzanians and to encourage students to think critically about colonialism and the ongoing marginalization of Africa in the global capitalist system (Nyerere 1967).

Although education policy throughout the 1970s promoted learning through collaboration and experimentation, the political and economic conditions in the country by the mid-1980s did not support these aspirations. A serious economic recession forced the country's second president in 1986 to agree to structural adjustment lending through the International Monetary Fund and the World Bank, and the crisis significantly denigrated educational quality. For example, exams were redesigned so that less costly theory-based assessments took the place of practical, lab-based assessments in the sciences, and the length of time spent in course work and school-based training for preservice teachers declined, leaving graduates with a diploma but little PCK or practical experience of teaching (Lyimo 2010).

Since the 1990s, criticisms of structural adjustment lending and the subsequent poverty reduction process for heavily indebted countries (including Tanzania), together with mounting international attention to basic education, have prompted significant changes in Tanzania's educational approach. Reversing its policy on "cost sharing" through school fees implemented under structural adjustment, the government eliminated fees at the primary level in 2002, and over the course of the following decade it has reformed primary and secondary education to expand access and improve quality. Pedagogical change in the direction of LCP has been central to these reforms.

An analysis of education policy discourse from the 1995 Education and Training Policy to the most recent iteration of the 2010 Secondary Education Development Programme II demonstrates that global education and development frameworks have become more explicit in Tanzanian national policy, and references to global pedagogies associated with quality teaching have become more pronounced. A notable shift in policy discourse began in 2001, with the implementation of two key education plans: the Basic Education

Master Plan (BEMP) and the Teacher Education Master Plan (TEMP). These texts bear explicit references to the 1990 Education For All conference in Jomtien, the 1995 World Social Summit in Copenhagen, and the 2000 Millennium Development Summit as global initiatives shaping Tanzania's policy priorities. The BEMP, for instance, begins by stating, "Tanzania being a member of the world community is committed to implement agreed international commitments. In view of this, Tanzania intends to implement the international agreement on six development targets for education" (Ministry of Education and Culture 2001a, 2). It then introduces the concept, promoted by the UN Children's Fund, of the "child-friendly school" and urges the improvement of "teacher/learner interaction by *adopting learner centred methods* and by eliminating corporal punishment [*sic*]" (23; emphasis added). The turn toward LCP is equally apparent in the TEMP, and terms like "inquiry," "reflection," "critical thinking," and "participatory methods" are introduced as ways to improve teacher education and the act of teaching. The TEMP also notes the general perception about Tanzanian schools that the "curriculum is too theoretical and conservative and does not encourage inquiry, critical thinking and reflective practice" (Ministry of Education and Culture 2001b, 4).

The interconnection between global education and development initiatives and Tanzanian policy making has been established elsewhere (Samoff 1994; Vavrus 2004). However, there has been limited research into how pedagogy has become inserted into the global development "policyscape" (Carney 2009), such that indicators of "good teaching" and "quality" developed in the industrialized democracies of the North Atlantic become applied globally in an effort to enhance development (often conceived as economic competitiveness) in the global South. The concept of "localized globalism" and the body of comparative education scholarship on policy borrowing alert us to the fact that global policy discourses rarely manifest themselves in predictable ways (Schriewer and Martinez 2004; Steiner-Khamsi and Stolpe 2006; Steiner-Khamsi 2010). Thus, after briefly reviewing our research methods, in the following sections we explore borrowed pedagogies "as they collide with [local] traditions within different cultural settings" and "explore why some of them 'take' and are domesticated while others do not" (Alexander 2001a, 508). We situate this exploration within a single teacher education program in Tanzania because, as we have argued elsewhere, rich, multilayered qualitative studies can illuminate comparative educational processes and practices (Vavrus and Bartlett 2009). In this study, we also invoke a comparative perspective by reflecting on how our own assumptions about pedagogy and research were challenged during cross-national collaboration because, as Alexander points out, "academics can no less detach themselves from their history and culture than can the rest of humanity" (2001a, 508).

Research Method

This article is informed by our 5 years of collaboration with colleagues at MWUCE to prepare and then conduct the TIA program on LCP and PCK for Tanzanian secondary school teachers, as well as the 2-year collaboration with MWUCE faculty and US graduate students to design, conduct, and analyze a qualitative research project. Reflections on these experiences have included, most intensely, the two of us as coauthors but also other members of the international research team (Vavrus and Bartlett, forthcoming). The article draws directly on data from the interviews, focus groups, classroom observations, and policy documents gathered during an intense 5 weeks of data collection at the six focal schools after TIA and more infrequent school visits over the subsequent 4 months. The schools are nongovernmental and affiliated with either the Catholic or the Lutheran church, as are approximately 20 percent of the total number of secondary schools in the country and the majority of the top-performing schools on the national Form 4 examination (Ministry of Education and Vocational Training 2010; Nkolimwa 2011). The schools' overall performance on the national exams and the teachers' interest in LCP allowed us to "bias for the best" in looking at teaching practice in Tanzania. Table 1 summarizes the basic characteristics of each school.⁷

From these six schools, 23 teachers agreed to participate in the study. Teachers were interviewed twice: first, during a comprehensive, hour-long interview that explored teachers' preservice and in-service experiences, philosophy of teaching, and views on LCP and, second, immediately after a classroom observation, with questions probing observed pedagogical practices. In addition, each participating teacher was observed on at least four other occasions. Most observations concluded with a debriefing period, during which the teacher was asked what went well during the lesson and what could have been improved, and the research team advised the teacher on how to enhance his or her pedagogy in a manner consistent with the model of LCP used in the TIA workshop. In a second phase, from August to December 2010, the Tanzanian researchers returned periodically to observe the focal teachers as "critical friends" offering support to them and to their schools.

Data analysis began in January 2011, with the elaboration of a concept-driven, or deductive, codebook based on the research design (Gibbs 2008).⁸ While reading through the data corpus, we developed an initial set of 40 codes that was reduced to seven, including "teaching methods," "conditions of teaching," and "lives of teachers." Next, on the basis of their scholarly interests, pairs of team members conducted an inductive analysis of the data in one of these seven categories (for more details, see Vavrus and Bartlett,

⁷ The schools, focal teachers, and research team members have been given pseudonyms to protect confidentiality.

⁸ Matthew Thomas, one of the research team members, played a vital role in this coding process.

TABLE 1
DESCRIPTION OF FOCAL SCHOOLS

Pseudonym of Secondary School	Region	Type of School	Approximate No. of Students	Approximate No. of Full-Time Teachers	National Ranking Based on 2010 Form 4 Exam
Dunia	Arusha	Catholic coeducational O-level	260	17	Top 3%
Mwanga	Arusha	Lutheran coeducational O-level and A-level	600	25	Top 4%
Tanzania Prep	Arusha	Lutheran coeducational O-level	210	16	NA
Kilimanjaro Girls'	Kilimanjaro	Catholic single-sex O-level and A-level	800	35	Top 1%
St. Anne's	Kilimanjaro	Catholic single-sex O-level and A-level	420	17	Top 1%
Uhuru	Kilimanjaro	Catholic coeducational O-level and A-level	615	21	Top 30%

NOTE.—The number of students and teachers in secondary schools fluctuates throughout the year due to high levels of mobility; therefore, these are estimates intended to indicate the size of each school and student/teacher ratios. The national ranking data are presented as percentages to protect the identity of the schools. Tanzania Prep is a new school, and its first group of students will take the national Form 4 exam at the end of 2011, so there are no 2010 data for this school.

forthcoming). We draw on this shared pool of data below to examine how LCP becomes instantiated in a process of localized globalism.

Local Conceptualizations of Learner-Centered Pedagogy

Our examination of how teachers across the six focal schools understood and implemented LCP revealed how epistemological and material differences significantly constrain pedagogical reform. In general, the focal teachers praised LCP as an “active” approach to “discovering” knowledge that superseded the traditional “passive” approach to memorizing information. In such an approach, they explained, teachers do not “own” knowledge but rather seek to stimulate student learning by serving as guides or facilitators: “When you’re trained you’re told a teacher is a facilitator. . . . You’re not the ‘I know all.’ You’re not the goddess of knowledge. Or the students, they are not like the *tabula rasa* people. . . . The students know, and they have potentiality to learn. All you have to do is create interest or motivate them, stimulate them to come out and learn.” “I think this [LCP] is a new and acceptable way of teaching which advocates students to take active role in the learning process. This is different from the traditional way of learning which depended much on teachers delivering the knowledge.”

While many teachers explained how LCP positioned the teacher as “guide,” their comments also revealed the persistence of a sense of knowledge as predetermined to be discovered, with the teacher’s role being to facilitate the discovery of a body of authoritative knowledge. As one teacher said, “The point here is, as a teacher, I am a facilitator, I am a leader making sure that I’m *leading them in the direct way, to make sure that they get a knowledge which is planned for them.* Therefore I have to make sure that I give them some directions which would make sure that they would stick in the topic and also this question will lead them and make sure that they understand the topic.”⁹ Giving “hints” to students was another common manifestation of the view that LCP means guiding students to learn authoritative knowledge. As one teacher explained, “Learner-centered method—they said you have to place the student to be the center of the learning method, not the teacher at the center. The student is meant to be the one to know what you are teaching them. Maybe the teacher gives hints. A student *discovers something about what you are going to teach.*”

The critique of the transmission model of pedagogy in favor of a discovery approach was also evident in teachers’ frequent description of transmission as “spoon-feeding”; nevertheless, in general they maintained an epistemological stance more consistent with transmission than with constructivism. For instance, one teacher gave an animated comparison between the “old” way of teaching and the learner-centered approach: “The students were simply

⁹ Italicized words in quotations from teachers indicate a particularly salient comment, and the quotations are presented verbatim to convey the teachers’ level of English proficiency.

given, given, given, but they were not challenged to think. That's what I think. I think we [now] give a hint in some learning packages and we demand more from students. Students they *need to learn on their own, but at the same time, they need very little hints from the teacher, they come up with good answers.*"

In sum, the interviews with the focal teachers demonstrated that they were generally critical of the idea that knowledge can be "given," and they valued the notion that students can "discover" formulas, patterns, and factual knowledge with assistance from their teachers. These teachers' conceptualizations of LCP incorporated some common elements of this approach, such as teacher as facilitator and learning as an active process. However, the focal teachers remained invested in a notion of knowledge as facts whose discovery is "guided" by "hints." Moreover, their views on LCP rarely included aspects that are more constructivist in nature, such as knowledge as constituted by interpretation, learning as a process where there is not always a right answer, and coconstruction of new knowledge by students or by students and teacher.

Learner-Centered Pedagogy in Practice

The analysis of classroom observations confirmed the epistemological challenges facing pedagogical reform in Tanzania. In general, although the teachers embraced the form and activities of LCP, their lessons were structured by their belief in a shared body of knowledge to which students should be led. The following vignette from a Form I chemistry class exemplifies this contradiction:

The class of approximately 60 students gathered in Uhuru Secondary School's chemistry lab, and while the class monitor was passing back notebooks, Mr. Allen wrote the essential question for the day at the top of the far left column of the blackboard: "Why to study heat sources and flame?" On the far right column, he wrote the outline for the lesson, which listed four topics: (1) Bunsen burner, (2) flame, (3) luminous and nonluminous flame, and (4) differences between luminous and nonluminous flame. He then hung a very clearly drawn model of a Bunsen burner underneath the essential question. The model had different parts labeled with letters from A to G. Mr. Allen began the lesson by explaining that the purpose of the class was to study the Bunsen burner: "It is the one using the gas which is flammable so you need to know how to be very careful. You need to learn how to light. Are we together? We have already studied the parts of the Bunsen burner and today we are going to learn how to light." Mr. Allen pointed to different parts on the poster and asked students to name them and to give their functions.

Following this review with the poster, Mr. Allen began demonstrating in front of the class how to turn on the burner: "This is a gas tap. . . . The first procedure when you want to use the Bunsen burner is to connect the Bunsen burner into the gas tube. The second procedure is to close the air hole with the metal rim. The . . . ?" he said as he waited for the class to respond in unison, and they did, "Metal rim." Mr. Allen then asked the class to observe carefully, and he asked them a series of fact-based questions. He explained that they would need this information later to answer questions about the flame:

MR. ALLEN: What is the shape of the flame?

STUDENT: Is shapeless.

MR. ALLEN: Is shapeless. What is the color of the flame?

Different students called out different colors, and Mr. Allen explained, "Now there is blue color and yellow." Mr. Allen asked the students to explain the color of the flame as he placed a glass tube into it and opened the air hole on the burner. The students, both boys and girls, shouted out responses.

After approximately 40 minutes, Mr. Allen announced, "Now I want you to know differences of luminous and nonluminous flame. Draw a diagram of luminous and nonluminous flames. Work in groups. I want you to work in groups. Give the differences. . . . Share ideas there." At the end of the lesson, groups of students presented their diagrams, after which Mr. Allen asked the students to clap for each presentation.

In this lesson, Mr. Allen used a number of learner-centered techniques and methods demonstrated and encouraged during the TIA workshop. These include posting an outline of the lesson on the board to help students preview the lesson and anticipate where they were headed during it and writing an essential question to focus students' attention on the main idea during the lesson. Mr. Allen had prepared a teaching aid, a "wall chart," that closely resembled the interactive posters prepared by teachers during the workshop to help students visualize the inner workings of the Bunsen burner. He also carried out a demonstration, asked students to explain their observations, used group work to engage them in some application and analysis, and had some of the students present their work to the class.

After this lesson, two members of the research team—Ms. Sarah (from Tanzania) and Mr. John (from the United States)—interviewed Mr. Allen. He summarized the lesson as follows: "I gave them the assignment, they performed it very clearly [pause] and, also I involved them in many activities. I placed the wall chart there, which there was a drawing of Bunsen burner. I asked them some questions there. They answered correctly." When asked whether he might change the lesson in the future, Mr. Allen noted that he might allow students to light the Bunsen burner themselves and give them more questions about the observation.

The lesson was more active than what was commonly observed across the schools, as it required students to speak frequently, to predict and explain changes in the color of the flame, and to work in groups. However, the fundamentals of the lesson were focused on predetermined factual information: the parts and functions of the Bunsen burner, the procedure for lighting a burner, the changes in flame color, and the differences between luminous and nonluminous flames. Although students were more verbally engaged than in a traditional lecture format, they were routinely asked factual questions for which a single answer was acceptable.

In addition, the different reactions of the Tanzanian and the US re-

searcher to the group activity are illuminating for what they reveal about the different views on knowledge production among the research team. For instance, during the debriefing session after the observation, Ms. Sarah praised the teacher for placing students in groups; she said, “many of the students, they’re not going to participate in learning activities, but if they’re in groups, most of them are going to participate.” However, she warned that some of the groups were not on task, and she focused on lost class time: “But make sure that you are making follow-up when they are discussing. Because, some of them, they’re not concentrating. . . . Some of the students especially they, the group number 5, which I was close to them, they used a lot of time in making stories, while they were asked to do the exercise. And as a result, they have to spend a lot of time then to wait for them when they were asked to come there to make the presentation.”

Mr. Allen explained that his rationale for having each group come to the front of the room, whether they were ready to present or not, was to keep everyone in the class attentive, and Ms. Sarah agreed that this made sense. She then turned to Mr. John, the US member of the research pair, to get his advice on saving time in this activity. Instead of responding to the question about time management, Mr. John commented on the limited learning he saw taking place in the groups:

MR. JOHN: One suggestion perhaps with the group activity, um, it seemed to me that most of the groups were presenting the same information multiple times.

MR. ALLEN: Most of them.

MR. JOHN: So they had group work, thinking together, and then individual presentations, and then students after that drawing luminous and nonluminous flames on the board. Some of the other students were not, the leaders were very active, but some of the other students were just sitting.

Mr. John went on to provide some suggestions for saving time during the group presentations by calling on different groups to present one characteristic of a luminous flame, and another group a different characteristic, but he appeared to be trying to gently raise the issue of the content of the group work and the kinds of questions that could have been asked of the students to engage them in more analytical thinking as the teacher had done at the beginning of the lesson during the demonstration:

MR. JOHN: It was so practical and you’re asking them questions [such as] “why do you think [the flame] is yellow?” “Why do you think this is happening?” Things, ideas that they *had to think of on their own without you giving them as a teacher*—the questions you were asking them at the beginning were excellent, excellent.

This exchange reveals the different orientation toward the generation of knowledge and its dissemination characteristic of the Tanzanian and US researchers and teachers involved in this study. For Mr. Allen and Ms. Sarah, it was most important for the teacher to ensure correct responses while

keeping the students active, which led Mr. Allen to create certain kinds of questions for group work and presentation strategies. For Mr. John, the lesson would have been improved had the teacher asked more “good” questions like those asked at the beginning of class when students had to think more on their own without a specific answer to “discover.” Yet both researchers realized that, in a classroom with one Bunsen burner, it would have been difficult if not impossible for groups of students to carry out the lab experiment. The content and presentation of the group work could have been modified to engage more students, but Mr. Allen had limited experience with LCP from his teacher education program and seemed to hold the view that group work, by definition, was a learner-centered method of teaching.

Conceptions of Authority and Constraints on Learner-Centered Pedagogy

In addition to differences regarding teachers’ roles in directing student learning, the Tanzanian and US team members initially diverged in their appreciation of LCP as a potential threat to teachers’ authority and in their opinion about whether LCP is possibly ill suited for underresourced Tanzanian classrooms. The entire team was aware that the focal teachers had generally positive views of LCP as an ideal way of teaching, but their sense of its limitations in the cultural and material contexts in which they teach appeared to be a bit more difficult for some US team members to grasp because they acknowledged that they had not been teachers in Tanzanian classrooms. However, both the Tanzanian and US researchers grew over the course of the research process in their awareness of how the focal teachers’ concerns for social and intellectual authority, noise, size of classes, and time for preparations might shape pedagogical practices.

Throughout the research period, the focal teachers frequently discussed their concern that LCP interfered with their authority and with students’ and parents’ respect for them. This was often expressed through concerns about noise and not being taken seriously as a teacher. One teacher explained: “It’s noisy sometimes and students can really get excited in classes . . . and it’s hard to control them. I experienced that in the other class, maybe this class didn’t because you were there. But the other class, they really argued, somebody wants to make the card this way and the other one wants to make the card the other way. They ended up making two cards of the same group. And they made a lot of noise.” A different teacher in a focus group raised concerns about the time that LCP takes and how falling behind in the syllabus is a sign of not being a serious teacher: “If you are behind and students say ‘we are behind in class,’ you are in trouble. You are a joker. You are not serious.” Likewise, a few teachers worried that, by posing questions instead of lecturing, students might begin to question their mastery of their subject areas.

In addition to these concerns about teachers’ authority, many of the focal

teachers considered the lack of time and pressure to cover the syllabus to pose major constraints to the use of LCP. Teachers felt rushed to “cover” the syllabus and teach all of the topics on it, and they generally felt that LCP took more time than more teacher-centered approaches. One teacher commented: “[The participatory method] is time-consuming. You can find some techniques or methods there which needs learner-centered or student’s participation directly. You can find that they need more time to be used and you can’t teach maybe a certain subtopic which you are supposed to teach maybe for two days. . . . You have to teach more, maybe for more two days, so four days. So because we are just learning the shortage of time according to the content of the syllabus, that is fast, time-consuming.”

Teachers’ concerns about time were inextricably linked to the paucity of teaching materials in most schools and teachers’ limited finances to purchase them. Although TIA had sessions on making low-cost teaching aids from locally available materials, teachers noted that there were still costs—in time and in financial resources—to using them: “Another challenge I think which is there is the time in preparing some of those materials. You know, sometimes, from morning, sometimes, I am occupied, and when I go home, I am tired. At what time will I go to prepare? And you find, also, during the weekend, I have to do other business. Also, we have the challenge, we cannot also depend only on the salary. You know the teacher’s salary [laughs].” “[LCP] might require some things that the school might not have, like the teaching aids and the materials you need to give to the student. They might not be enough especially with my large classes. Like if it’s manila [thick construction paper to make signs or illustrations as teaching aids] I’ll need so many of them, if it’s something I want the students to do, I’ll need so much of it. They might mess it up and there’s not more manila. . . . They might not be able to participate.”

The cost of making teaching aids was frequently discussed alongside other material constraints, such as the limited number of books for use in classes and small or nonexistent libraries. Therefore, teachers explained that they are often the primary learning material, as in this focus group discussion: “Resources are very few. . . . Maybe you have a topic, for example in biology. . . . The students have a textbook and the students see the pictures in the textbook, but you only have 5 textbooks for a class of 70 students. It becomes difficult because you have to draw the picture so that the students can see the lesson.” This opinion was echoed during an interview: “this goes with the absence of library; many schools don’t have a library. From my experience, if there is just a small room, that student cannot sit inside and search for, um, variety of books, for doing a homework assignment, so when you give an assignment, you have to make sure that you are giving them notes, and then they will read and write, and just kind of pasting or translating what you have already done.”

These perceived constraints on implementing LCP, along with others that we detail in the forthcoming edited volume with the research team, are compounded by the very limited opportunities for in-service professional development in Tanzania. Few focal teachers had attended any professional development workshops since they became teachers, or they had not participated in any since the mid-1990s, when several programs for science, math, and English teachers were implemented nationwide with funding from international organizations. As one teacher noted, “The tradition is the teacher-centered . . . so most of them [have not] really experienced how they can use the student-centered in their classrooms.” The TIA workshop, lasting only 1 week, is a very limited professional development opportunity, but it has provided a window for us as researchers to peer into the complex phenomenon of teacher education in local/global contexts. Teachers’ use of LCP is certainly shaped by these limits on in-service education, but their practice is also influenced by divergent conceptions of knowledge, knowledge production, and teacher authority, and by material constraints that disproportionately affect teachers in the global South.

Conclusion

This study, based on a collaborative research endeavor by an international team of teacher educators, raises several critical issues related to global epistemological and material diversity that warrant further examination by scholars in comparative education. First, there are profound global inequalities in the distribution of pedagogical and content knowledge, which are due, in part, to teachers’ differing opportunities for preservice and in-service professional development and their unequal access to textbooks, journals, and the Internet. Comparative education as a field of study is well situated to contribute rich, contextualized analyses of teacher education programs in the global South that would complement reviews such as the comprehensive American Educational Research Association review of teacher education, which explicitly identifies its sole focus on the United States as a limitation (Zeichner 2005). Moreover, studies in a wider array of contexts would enable the development of theories that take into account teachers’ working conditions as more than mere variables but rather as essential aspects of teachers’ understandings of how knowledge can be produced and disseminated in the classroom. This contingent perspective on pedagogy is informed by both cultural and material analyses of teachers’ professional lives.

This insight leads to our second principal issue regarding epistemological diversity, namely, the ways that the cultural and social dimensions of teaching influence the form that globalized pedagogical discourses take in local contexts. The concept of localized globalism acknowledges that inter/national policy is appropriated locally in complex ways (Levinson and Sutton 2001;

Anderson-Levitt 2003; Koyama 2010).¹⁰ However, the process by which this appropriation takes place requires further comparative research to understand how different conceptions of knowledge, knowledge production, and knowledge dissemination shape pedagogical practice. If knowledge is understood to be a body of authoritative fact, for instance, can it be produced by “unauthorized” students and teachers? If knowledge is deemed “real” by virtue of being sanctioned in national syllabi and on national exams, can teachers also be developing their students’ knowledge when posing questions that have no definitive answer or that require critical thinking skills beyond those assessed on the national exam?

We conclude this article by reiterating our skepticism regarding constructivism and LCP as conceptualized in specific contexts in the global North serving as a global gold standard by which teachers and teacher educators worldwide should be evaluated. Rather, we have come to think about international programs like TIA as opportunities for educators to develop jointly a “contingent constructivism” (Vavrus 2009), which weaves together methods of engaging students in learning adapted to local cultural and material contexts. The TIA program, admittedly an instance of globalized localism at its inception, is already being localized as the faculty at MWUCE took ownership of the 2011 and 2012 workshops and reworked the curriculum to include more direct instruction for participating teachers on difficult topics in the national science and mathematics curricula while maintaining a focus on more participatory teaching methods. The syncretic process that has unfolded during the past 5 years resulted from extensive discussion and reflection among the facilitators; nevertheless, it does not resolve a central contradiction, namely, the engagement of non-Tanzanians in a process aimed at making LCP more “locally relevant.” Yet if we take seriously the epistemological diversity on which our central argument rests, then this project represents a modest effort to embrace it.

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¹⁰ See Vavrus (2005) and Vavrus and Bartlett (2009) for an explanation of this way of denoting the porous boundary between international policy “advice” and national policy reform in heavily indebted countries in the global South.

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