

Against Inequality: Towards a Curriculum for Social and Environmental Innovation

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Introduction

Growing inequality and increasing levels of relative poverty are of concern across the world. Extreme poverty is universally accepted as a crisis in the world's poorest countries. But there is also growing acknowledgement that increasing levels of relative poverty in highly industrialized economies need to be addressed. Moves towards sustainable social and environmental innovation will be compromised if rising levels of inequality are not addressed.

The provision of education – at all levels – is widely recognized as one of the key elements in addressing both poverty and inequality. However, now-prevalent market models for the provision of education are inappropriate for this purpose, since they render educational attainment as a positional good that may exacerbate inequality and restrict access to education to elite groups. Amartya Sen's formative concepts of capabilities and functionings provide a sound and productive basis for an alternative approach, whether for the provision of basic education, or for access to opportunities in further and higher education and training.

In this chapter, I use Britain and South Africa as cases, and focus for the most part on Higher Education. Pronounced inequalities in life circumstances – household income, employment opportunities, health, housing, education, life expectancy – seem increasingly to be accepted as an inevitable condition of the world (Hall 2012a; Hall 2012b). My purpose here is to challenge this assumption, and to draw debates about education policies into the nexus of work on sustainable social and environmental innovation.

Inequality and Poverty Traps

The concept of inequality can be understood variously. It evidently has a good deal to do with money, but wealth can be measured and reported in very different ways. Similarly, inequality can be experienced through lack of access to other tangible resources as well as to intangible qualities of life. The difficulty in using absolute measures of inequality is well demonstrated by the problems with the widely used "dollar a day" measure for world poverty (Deaton 2010). As David Hulme points out, absolute measures tend to make poverty a matter of "distant strangers" in "third world" countries (Hulme 2010). Seen through an absolute lens, it may often be assumed that there is no poverty in countries such as Britain or, for that matter, in South Africa, which is defined by the World Bank as a middle income country.

Daniel Dorling's searing critique of inequality uses three criteria for relative poverty: income poverty relative to median household incomes; lack of access to basic necessities as they are understood in a person's country today; and people's own perceptions of whether or not they are poor. A person is considered poor if she meets at least two of these three criteria. Dorling finds that 16.3% of all

households in Britain today meet this definition of poverty; 5.6% of households meet all three criteria (Dorling 2010).

Poverty and inequality are inexorably linked in South Africa, where a large proportion of households would meet any definition, including Dorling's set of three criteria. The complicating factor, which contributes to making South Africa an instructive limiting case for education policies and practices, is of course race. Statistics South Africa reports that, in 2006 – the latest report available at the time of writing - the average household income was ZAR74589 (about £6200). However, at an average of ZAR280 870 (£23 400), the household income for white South Africans was 7.4 times the average income for Black African South Africans (ZAR37 711, or just over £3000 per year: Statistics South Africa 2008).

Poverty and inequality clearly need to be understood and analysed in their complexity. One approach to this is the concept of the "poverty trap". In setting out the concept of the poverty trap, Bowles, Durlauf and Hoff (2006) look for mechanisms that could cause poverty to persist in whole economies, or in subgroups within economies. Specific causal factors are isolated analytically, to be addressed through appropriate public policy and targeted interventions (Sachs 2005).

Looked at in this way, South Africa's education system is an integral part of a prevalent poverty trap. The post-apartheid settlement created a complex set of interests that, over some two decades, has continued a trend of increasing and extreme inequality within race categories. While a minority across all race categories has benefited from this, a large majority is "stuck" in a cycle of unemployment, very low household incomes and little access to meaningful educational opportunity.

Can the concept of the poverty trap be usefully applied to circumstances in highly industrialized economies? Qualitative accounts certainly suggest so. One such study is Barbara Ehrenreich's "Nickel and Dimed". Ehrenreich lived for a year on the US minimum wage, working as a waitress, hotel maid, house cleaner, nursing home aide and Wal-Mart salesperson. Here is her account of one of her better experiences:

"In Portland, Maine, I came closest to achieving a decent fit between income and expenses, but only because I worked seven days a week. Between my two jobs, I was earning approximately \$300 a week after taxes and paying \$480 a month in rent, or a manageable 40 percent of my earnings. It helped, too, that gas and electricity were included in my rent and that I got two or three free meals each weekend at the nursing home. But I was there at the beginning of the off-season. If I had stayed until June 2000 I would have faced the Blue Haven's summer rent of \$390 a week, which would of course have been out of the question. So to survive year-round, I would have had to save enough, in the months between August 1999 and May 2000, to accumulate the first month's rent on an actual apartment. I think I could have done this – saved \$800 to \$1000 – at least if no car trouble or illness interfered with my budget. I am not sure, however, that I could have maintained the seven-day-a-week regimen month after month or eluded the kinds of injuries that afflicted my fellow workers in the housecleaning business" (Ehrenreich 2001: 197-198).

Ehrenreich's detailed account of each in a series of low-end service jobs shows how her need for basic housing, transport and health provision reinforce one another as a syndrome that restricts any "break-out" opportunities such as savings or the acquisition of education qualifications which could

allow her to move higher than the minimum wage. This clearly meets the definition of a poverty trap as a self-reinforcing mechanism that causes poverty to persist.

Market models: qualifications as commodities

Education has a particular role in the persistence of inequality and poverty, and access to appropriate education provision is key to breaking from poverty traps. Access to different levels of education is a strand that should run through all considerations of inequality, poverty and poverty traps. Evidently, access to education provides opportunities for individuals in their lifetimes. It is also a primary means of intergenerational economic and social change. But if education is reduced to the value of qualifications in a job market, it can assume a gatekeeping function, reinforcing or exacerbating inequality. This point can be demonstrated through the differing implications of higher education for students from differing class backgrounds.

Reay, David and Ball (2005) studied 500 university applicants in Britain between 1998 and 2000 from a range of schools and colleges, allowing them to understand in detail the contrasts in perceptions and actions of different categories of potential students. Those from established middle class backgrounds, aspiring to selective universities, live out what Reay, David and Ball call “normal biographies” - pathways that are anticipated beforehand, are grounded in the habitus of their families and often involve few decisions. These pathways are strongly supported by the institutional cultures of their schools, interlocked with the organizational mechanisms of the universities to which they aspire. Such families are “the virtuosos of university choice”, that aspire to admission to the most selective universities. In sharp contrast is the habitus of working class applicants. For these potential students, pathways to higher education are characterized by doubt, ambivalence, shame and deliberative decision making: “choice for a majority involved either a process of finding out what you cannot have, what is not open for negotiation and then looking at the few options left, or a process of self-exclusion Material circumstances meant that a majority were operating within narrow circumscribed spaces of choice, in which the location of a university becomes crucial” (Reay, David and Ball 2005:85). Reay, David and Ball interpreted these potential students’ situation as being “caught between two opposing shames”. On the one hand, there was the risk of aspiring too high and then failing. But on the other hand, there was the shame of under-achieving, of attending a university in which they could not be proud.

For potential students such as those from working class backgrounds in and around London, getting a degree could represent a step-wise change in circumstances. Similarly, a student from a black South African family, whose parents were denied the opportunity of education beyond the basic level because of apartheid legislation, will earn a significant amount more than his or her parents on graduation and employment. British men born in the 1950s and who gained a higher education qualifications earned on average twice as much as men without such qualifications after 20 years in the labour force (Wolf 2002). In the US, the “college premium” – the differential in median wage between those who do not have a higher education qualification and those who do – was 72% in 2008 (Rajan 2010). For students such as these, access to educational opportunity clearly militates against inequality.

But for students whose families are already in graduate-level occupations, - those with Reay, David and Ball’s “normal biographies” – the benefits are less apparent. This is because the significant increase on participation in British higher education over the last 50 years has been so heavily

skewed towards middle class families, diluting the transformative benefits of inter-generational social mobility. As Dorling puts it: “university degrees are wonderful things; it is the arranging and valuing of them by hierarchy of institution that is problematic, when people study for the label, for the university brand, rather than actually to learn. Because there were so few of them, the forerunners of today’s university graduates almost all became part of a tiny elite, governing others and being rewarded with riches as a result. Because there are so many more graduates now, only a very small minority of today’s university graduates can become rich at the expense of others” (Dorling 2010: 16).

Alison Wolf has argued that, for the majority of participants in higher education in highly industrialized economies, a higher education qualification is increasingly a “positional good” that has value for competitive success in the labour market rather than for the inherent qualities that a university education confers. Such a positional good might be essential whether or not it also brings a private financial benefit. For most professions, a degree is an entry requirement and a wide range of jobs are only open to graduates, whatever the remuneration. The increasing importance of the positioning power of a degree is itself a function of widening middle-class participation in higher education: “at a certain point in what had been a steady, slow expansion, large numbers of people started to feel that they really had better get a degree, because not doing so would be such a bad move. The first wave set off another, and so on. And their parents were very likely to agree ... the question becomes less ‘Does a degree pay well?’ than ‘Can I afford not to have one’” (Wolf 2002: 178-181).

In a more recent study that focuses on the causes of the 2008 financial crisis, Raghuram Rajan takes a similar position. Rajan argues that the sustained demand for higher education qualifications in the US cannot be explained by the demand for higher order skills alone. With Wolf, Rajan sees the primary location of the skills deficit in the earlier years of education, and as a consequence of income inequality: “the problems are rooted in indifferent nutrition, socialization, and learning in early childhood, and in dysfunctional primary and secondary schools that leave too many Americans unprepared for college” (Rajan 2010: 8-9). However, because a higher education qualification has, at the same time, become an entry requirement for higher paid jobs, the exclusion of a significant number of people from increased earnings because they do not hold this key positional good has created a political headache for successive administrations. Government has responded by making credit more easily available, particularly for acquiring homes or mortgaging homes. Rajan sees the US’s failed education policies as a key faultline that contributed to the 2008 financial crisis: “recent technological advances now require many workers to have a college degree to carry out their tasks. But the supply of college-educated workers has not kept pace with demand—indeed, the fraction of high school graduates in every age cohort has stopped rising, having fallen slightly since the 1970s. Those who are fortunate enough to have bachelor’s and advanced degrees have seen their incomes grow rapidly as the demand for graduates exceeds supply. But those who don’t—seven out of ten Americans, according to the 2008 census—have seen relatively stagnant or even falling incomes ... The gap between the growing technological demand for skilled workers and the lagging supply because of deficiencies in the quantity and quality of education is just one, albeit perhaps the most important, reason for growing inequality” (Rajan 2010: 23).

Alison Wolf was writing in 2002, well ahead of the financial crisis and subsequent global recession, and at a time when economists confidently predicted long-term, uninterrupted, economic growth

for highly industrialized countries. Even so, she predicted an inevitable fall-off in demand for higher education as the comparative value of a degree as a positional good declined with ever increasing middle class participation. She anticipated a classic S-curve: “just where and when the curves will flatten, and for how long, will depend largely on how young people and their elders perceive the job market” (Wolf 2002: 187). In other words, when the possession of a qualification becomes more of a signifier of status in employment markets than a validation of advanced expertise, it will not be so much the graduate lifetime earning premium that will be the key factor in deciding whether university is worth attending, as graduate unemployment.

Taken together, these trends look like education’s equivalent of a perfect storm. Access to higher education is consistently a significant means of inter-generational economic and social mobility, as students from households in non-graduate professions win places at university, graduate and set up their own households. But along side this, the persistently lower rates of participation by working class families in contrast with their middle-class contemporaries – differences that are themselves an outcome of the inequalities that widening participation seeks to address – means that the inherent value of higher education qualifications diminishes. Rather than certifying the acquisition of higher order knowledge and analytical skills, degrees become more important as positional goods that are used to sort job seekers in a mass graduate market. However, the value of positional goods is closely related to their relative scarcity. Inevitably, as rates of middle class participation in higher education rise, so the social value of investment in a university education diminishes; there is less return for employers’ investments in higher pay costs in real returns. This is reflected in the convergence of unemployment rates for those entering the work force after secondary education, and those seeking jobs immediately after graduation. Pulling the plug on the positional value of a university degree, of course, also diminishes the value and attractiveness of university study among potential working class participants, with the result that inequality increases. At the same time, sorting effects are further attenuated as a “good degree” and enrolment in a sub-set of most selective universities becomes far more important for access to the job market.

Capabilities and functionings: an alternative approach

We are, then, faced with a paradox. Access to educational opportunity is essential if the pernicious effects of poverty traps are to be broken. But in unequal societies, widening participation in education will devalue the “positional value” of educational qualifications in general, promoting the recognition given to small sets of elite institutions and reinforcing the mechanisms of inequality. Resolving this paradox, I suggest, depends on moving away from the current, overbearing, concern with qualifications in themselves and focusing instead on the underlying principles of the curriculum.

The foundation for an alternative approach, as part of a wider concern with issues of equality and inequality, was laid by Amartya Sen thirty years ago. Working within the frame of mainstream economics, Sen showed how neither the concepts of “opulence” or “utility” were adequate in themselves as a theory of well-being. Opulence and utility approaches see either the narrow objective of increasing real income or the fulfilment of interests as both the driving force of development and the appropriate emphasis of public policy and lead naturally to the assumption that education is a commodity best traded in a market. Sen argues instead for a focus on the “capability to function” – what a person can do and can be, on “the achievement of a person: what

he or she manages to do or to be” (Sen 1999: 7). For Sen, access to education and the ability to realize its opportunities is an unqualified good.

Sen’s approach has been further developed by Martha Nussbaum, and related directly to higher education and the central role of the Humanities (Nussbaum 1997; 2010) . In turn again, Sen and Nussbaum are part of a broader consensus of thought in higher education, across all disciplines, that has never accepted the legitimacy of the concept of the market in framing higher education policy, either in specific operational terms, or as a broader metaphor for the interest of either staff or students.

Nussbaum – in contrast to Sen – insists on a specific list of “central capabilities”: the right to a life of “normal length”, good health and shelter, bodily integrity (freedom of movement, opportunities for sexual satisfaction), being able to use the senses, imagination and thought, the right to emotions, the opportunity to exercise practical reason, the right of affiliation with others, concern for other species, the right to play and laughter, and control over one’s environment. These belong “first and foremost to individual persons and only derivatively to groups ... at times group-based policies (for example, affirmative action) may be effective instruments in the creation of individual capabilities, but that is the only way they can be justified”. Two of these central capabilities play an “architectonic role” in organizing others: affiliation and practical reason (Nussbaum 2011: 35).

In turn again, Melanie Walker has built on both Sen and Nussbaum’s work in developing a first list of key capabilities and functionings for higher education (Walker 2006). In addressing the pervasive challenges of inequality, Walker sees that it is essential to move beyond “fairness” – providing opportunity – to ensure that every individual in education has the capability of taking advantage of such opportunities. This requires a comparison of the experiences of students based on their own, valued, achievements. Following Sen, a capability is understood as a potential functioning, and the relationship between a capability and a functioning as equivalent to the relationship between the opportunity to achieve and actual achievement.

In developing a capabilities approach to higher education, Walker places emphasis on agency. This is particularly important for “adaptive preferences” - situations where people learn not to want things because they are off-limits in terms such as gender, race or class, resulting in the internalization of a second class status. As Walker notes, there are evident implications here for widening participation in education and for responding to the high risks involved in realizing aspirations. In stressing the importance of agency, Walker shows how the capability approach can move beyond the limitations of the idea of habitus, showing how it can be ruptured and reformed: “the capability approach offers us a means to analyse change over time, recognizing the interaction of the social and the individual and the social constraints on choice such that we might adapt to a given habitus, but also making the possibility for agency central and important” (Walker 2006: 59). Her provisional list of eight key capabilities for higher education build on Nussbaum’s emphasis on practical reason, affiliation and emotions as central capabilities (Walker 2006: 128-129).

Practical reason	“being able to make well-reasoned, informed, critical, independent, intellectually acute, socially responsible, and reflective choices”
Educational resilience	“being able to navigate study, work and life”
Knowledge and imagination	“being able to gain knowledge of a chosen subject – disciplinary and/or professional – its form of academic inquiry and standards”
Learning disposition	“being able to have curiosity and desire for learning”
Social relations and social networks	“being able to participate in a group for learning, working with others to solve problems and tasks”
Respect, dignity and recognition	“being able to have respect for oneself and for and from others, being treated with dignity, not being diminished or devalued because of one’s gender, social class, religion or race, valuing other languages, other religions and spiritual practices and human diversity”
Emotional integrity, emotions	“being able to develop emotions for imagination. Understanding, empathy, awareness and discernment”
Bodily integrity	“safety and freedom from all forms of physical and verbal harassment in the higher education environment”

Capabilities for Higher Education (from Melanie Walker, “Higher Education Pedagogies: A Capabilities Approach”, 2006)

Longitudinal perspectives are key to tracking the efficacy of interventions to improve the development of capabilities through education. This is because, as Walker stresses, capabilities are counterfactual – an opportunity cannot be “seen”, or measured. Instead, functionings serve as proxies for our assumptions about which capabilities are being advanced or diminished through educational processes (Walker 2006).

The value of longitudinal biographies is apparent in the first outcomes from the Inventing Adulthood project, which followed the lives of 100 people first interviewed in four areas of England and Northern Ireland at the ages of between 11 and 17 in 1996, and then again over the next decade (<http://www.lsbu.ac.uk/inventingadulthood/>). The four lives from this data set, examined in depth by Rachel Thomson (2009), give a rich and nuanced understanding of how education is perceived and experienced and the intersection of family life and personal relationships, circumstances and opportunities, and institutional resources and structures. They demonstrate Melanie Walker’s point about the significance of individual agency and the ways it can rupture habitus.

A second project that tracks the longitudinal experiences of young adults as they develop agency and identity is Bongzi Bangeni and Rochelle Kapp’s work with twenty students at the University of Cape Town as they move through the successive years of undergraduate study (Bangeni and Kapp 2005; Kapp and Bangeni 2009). Of particular interest is the way in which Bangeni and Kapp explore the interplay between individual development and the formal curriculum and institutional culture of the university. This study works through the medium of a three year programme in academic writing for students whose first language is not English and who are studying in an English medium environment. The exercises in writing, in themselves, realize key capabilities of practical reason, educational resilience, knowledge, learning disposition, and respect and recognition.

Towards a curriculum for social and environmental innovation

How, then, are broad concepts for a different approach to learning in, and about, a highly unequal world to be translated into specific curricula? In considering this question, I will narrow the focus to

the ways in which Sen, Nussbaum and Walker's capabilities approach could be used to set the framework for learning and teaching about the business of social and environmental innovation – the focus of this volume. Getting this framework right will foreground the need to address the pernicious effects of inequality in creating the recurrent poverty traps, now endemic across both advanced and developing economies.

A first priority that Sen and Nussbaum's philosophy emphasises is the effect of "adaptive preferences" – culturally driven behaviours that result in the internalization of external constraints. In the context of education, adaptive preferences operate through mechanisms such as the perceptions of options held by working class families in Reay, David and Ball's research; the "opposing shames" of aspiring too high and of under-achieving (Reay, David and Ball 2005). Similarly, Bangeni and Kapp's longitudinal study of the changing perceptions of first-in-family participants in Higher Education in South Africa can be understood as the process of addressing the adaptive preferences that militate against realizing capabilities by going to a university (Bangeni and Kapp 2005; Kapp and Bangeni 2009).

Addressing the effects of adaptive preferences requires an integrated strategy that includes alternative approaches to student selection and admission, financial support and pedagogic structures. There is an extensive literature on these issues in Britain (under the rubric of widening participation), in South Africa (as academic development) and elsewhere (see, for example, HEFCE 2007; Scott, Yeld et al 2005). Of direct relevance to this discussion is curriculum content – the opportunities in legitimating new forms of knowledge through including issues and contexts that have long been excluded or marginalized in the formal requirements of university-level courses. An obvious example here is the selective coverage of the case studies that shape the narrative of the traditional business school curriculum. While there are now trenchant critiques of the "Bottom of the Pyramid" strategy to address poverty and inequality (McKague, Wheeler and Karnani, this volume), one of the consequences of Prahalad's work (and key to its wide popularity) has been a dramatic extension of what is acceptable as legitimate business practice, embracing examples of new and innovative approaches in India, South America, Africa and elsewhere (Prahalad 2004; Hart 2005). When incorporated into the formal university curriculum, these developments legitimate knowledge that has been previously marginalized and, in doing so, address aspects of the adaptive preferences that fuel self-selection away from educational opportunity and perpetuate poverty traps.

The outcomes emerging from Trust Africa's Investment Climate and Business Research Fund (ICBE) illustrate the value of extending legitimate knowledge in ways such as these (www.trustafrica.org). Here, successive rounds of competitive awards and careful evaluation is resulting in a set of case studies in sustainable business practices that have a feel and reach that is very different from the conventional business curriculum. This direction has been set by the first of the Trust Africa case studies, published in 2009, and concerned with sustainable fishing in the Great Lakes region, and with the imperative of preserving livelihoods and raising incomes in chronically poor households in Uganda, faced with the rapid depletion of fish stocks:

"When Henry Kityo got into the fishing business eight years ago, his boat reliably pulled 40 kilograms of Nile perch daily from the fertile waters of Lake Victoria, Africa's largest lake. Now he's lucky if his crews bring in half as much. Kityo faults competitors who harvest immature fish, a

practice that is decimating the Nile perch population. Smaller catches have driven one-third of the commercial processors out of business in the last year, imperilled the livelihoods of 200,000 fishermen, and jeopardized the daily sustenance of millions of Ugandan families. 'We want to stop illegal fishing,' says Kityo, 33. "But we don't know how" (Trust Africa 2009).

In this research, Michael Mugabira and the Uganda Management Institute addressed income disparities by first looking at sustainable practices and supply chain rigidities, based on interviews with 450 fishermen working on Lakes Victoria, Albert, and Kioga. This resulted in proposals for new technologies and government policies, based on a close understanding of a complex set of circumstances that shape everyday practices (Trust Africa 2009).

Validating new forms of knowledge in this way addresses adaptive preferences by recognizing the efficacy of a wider set of capabilities and functionings. Turning back to Reay, David and Ball's work – in a very different context – excluded categories of previously-excluded learners can "recognize themselves" in extended knowledge contexts such as these (Reay, David and Ball 2005).

Of course, making such curricula transitions is never straightforward: as Bourdieu's seminal work on the university as an organization showed, knowledge is always engaged with complex sets of interests (Bourdieu 1996). In the present context, this complexity is evident in Rob Moore's study of attempts to extend the scope of long-established research paradigms in order to enable a sustainable and inclusive tourist industry (Moore, this volume). In dissecting the causes of conflicts and disagreements that were continuing to exclude economically marginalized communities from the benefits of cultural and scientific assets of their land, Moore shows how the inherent interests of university-based academics, government policy-makers, large-scale landowners and poor communities differ. As with Mugabira's work on sustainable fishing in Uganda, Moore's point is that, unless the drivers of these sets of interests are fully understood, sustainable outcomes are unlikely. In Moore's study, the key resource in question is knowledge itself; the politics and practice of reforming and extending a university curriculum has its own constraints and opportunities.

Countering the effects of adaptive preferences is essential to opening access to Higher Education and, in the ways outlined here, makes a significant contribution to a curriculum that addresses the full dimensions of the social and environmental innovation central to sustainability. More broadly Nussbaum – and, for Higher Education, Walker – propose sets of "core capabilities" that are intended as a broad platform for more detailed work. How, then, can Walker's eight core capabilities for Higher Education be interpreted in the context of a nascent curriculum for sustainability?

For practical purposes, Walker's core capabilities can be divided into two groups. A first group is to do with the personal dispositions: educational resilience ("being able to navigate study, work and life"); knowledge and imagination ("being able to gain knowledge of a chosen subject – disciplinary and/or professional – its form of academic inquiry and standards"); learning disposition ("being able to have curiosity and desire for learning"); emotional integrity ("being able to develop emotions for imagination. Understanding, empathy, awareness and discernment"); bodily integrity ("safety and freedom from all forms of physical and verbal harassment in the higher education environment"). The personal dispositions of resilience, imagination, curiosity and emotional and physical integrity are clearly essential to inclusion, and address the inherent value of diversity as an educational quality (Gurin, Dey et al., 2004).

Core capabilities in the second cluster can be understood as pedagogic qualities, and can be related directly to curriculum content and used to build further on the notion of countering adaptive preferences through extending the scope and reach of knowledge resources used for learning and teaching. These three capabilities are practical reason (“being able to make well-reasoned, informed, critical, independent, intellectually acute, socially responsible, and reflective choices”), social relations and social networks (“being able to participate in a group for learning, working with others to solve problems and tasks”), and respect, dignity and recognition (“being able to have respect for oneself and for and from others, being treated with dignity, not being diminished or devalued because of one’s gender, social class, religion or race, valuing other languages, other religions and spiritual practices and human diversity”).

First, practical reason. Widening the scope of a curriculum for social and environmental innovation along the axis of this core capability would require cases that show the process of making well reasoned and informed choices that are socially responsible, intellectually sound and appropriately reflective. Annelies Balkema and Henny Romijn’s chapter in this volume, which addresses issues for sustainable biofuel production in Tanzania, well illustrates how the competencies required to realize the capability of practical reason (“functionings”, in Sen’s terminology) can be developed.

Balkema and Romijn’s work is concerned with the contradictions between social, sustainability and commercial objectives in *Jatropha* cultivation, which is seen to have significant potential for producing biofuels. In brief, if the European Union objective of replacing 20% of current petrol and diesel consumption with sustainable biofuels is to be met by 2020 (which looks increasingly unlikely), then appropriate and sustainable supply chains are essential. *Jatropha* (a genus that includes a number of semi-domesticated plant species) is resistant to drought and pests, and produces seeds that contain between 20% and 30% oil that can be used in energy production. After extraction, the residual cake can be used for fish or animal feed, biomass in electricity plants, biogas, or high-quality organic fertilizer. Consequently, there is considerable interest in this aspect of the sustainable energy supply chain, both from the point of view of the needs of highly industrialized economies, for developing economies in India, Africa and South America, and in enabling poor and marginalized communities to break out of poverty traps, thereby countering the causes and consequences of income inequalities.

However attractive the broad concept of *Jatropha* production, Balkema and Romijn’s work in Tanzania shows that realizing the value of this supply chain is peppered with complex issues and uncertain consequences – situations in which the core capability to reason in a practical, informed and considered manner is essential. For example, pro-poor local objectives such as village livelihoods and the conservation of local ecosystems immediately clash with the economic imperatives of scalability and adequate financial margins. Similarly, state-level objectives to drive up export volumes may conflict with the local consequences of moving from low-volume outgrowing to high-volume plantation cultivation. Carbon credits are often advocated or benefits realization along the supply chain, but may militate against environmentally preferable solutions such as outgrowing, because smallholder cultivation is more difficult to certify than plantation cultivation. More generally – and a contradiction inherent in all globally scaled negotiations about carbon emission reduction and climate change – the push from the rich world to maximize biofuel production in order to maintain northern and western lifestyles may be in direct contradiction with “southern interests”, that would be better served by lower volume cultivation that preserves a balance

between food production and the cultivation of toxic biofuels such as *Jatropha* (Balkema and Romijn, this volume).

Building a curriculum around detailed cases such as these serves the dual purpose of widening the scope of knowledge that is admitted to the protected “knowledge space” of the university, and of illustrating, in a compelling and practical way, that the capability for practical reason is essential in the all-too-frequent situations in which there is no clear right or wrong conclusion or course of action.

Second, social relations and social networks. Developing this axis of core capability in the context of the kind of curriculum under consideration here needs to show the advantages of participating fully with others to address issues and achieve objectives. Group working has long been, of course, a distinctive element in university curricula; Walker’s emphasis on social relations as a core capability pushes for the recognition that working within a social network can result in outcomes that are superior to the sum of individual achievements. The onus on curriculum development is to demonstrate, through contextually appropriate content, that this is indeed the case.

Turning again to this volume or exemplars of good practice, Ralph Hamann, Nadine Methner and Warren Nilsson’s chapter on organizational innovation in a large South African retail firm shows how this capability can be embedded in the conceptualization of education for social and environmental innovation.

Hamman, Methner and Nilsson’s case study is Woolworths, with 400 stores across South Africa and investments in other countries in Africa, the Middle East and Australia (and not to be confused with the brand of the same name in Britain and North America). Woolworths’ focuses on the medium to high end market in home ware, clothes and food, where there is a requirement for demonstrable quality and attentiveness to environmental issues. Hamman, Methner and Nilsson are interested in the development of two, particularly important business strategies, both of which demonstrate the value of social networks in, and beyond, an organization: “Farming for the Future” and “Good Business Journey”.

Farming for the Future had its genesis in an initiative in a small group within the firm – the manager of Woolworth’s food business unit, a food technologist with an extensive knowledge of soil science and an environmental manager passionate about environmental issues. As with the examples of sustainable fishing in Uganda and biofuel cultivation in Tanzania, the Farming for the Future initiative was stimulated by this group’s concern about the sustainability of their supply chain; the increasing evidence for decreasing productivity and problems with soil fertility, water supplies and over-use of fertilizers and pesticides. Based on models of good practice in organic farming and “green revolution” approaches, the initial group of advocates lobbied within the firm for a procurement policy based on sustainable farming practices. Woolworths launched Farming for the Future as policy in 2009 with a commitment that, within three years, all fresh food produce supply would be within its frame (Hamman, Methner and Nilsson, this volume).

Clearly, given its market orientation, adopting Farming for the Future was in Woolworth’s business interests. Similarly, although suppliers’ participation was voluntary, the combination of Woolworth’s dominance of the fresh food retail market in South Africa and its commitment to full compliance within three years was a clear message along its supply chain. However, Hamman, Methner and

Nilsson's point is that Farming for the Future had its genesis in the personal convictions of the founding group, working outside their formal job requirements and performance indicators; the power of what they call "social intrapreneurs". Extending this idea, it can be seen how "intrapreneurship" within an organization – in this case a retail firm, but potentially any organization – can effect significant change through effective social relations and social networking. More generally, this has been theorized and modelled through concepts such as brokerage and closure, mapping how change is initiated in and beyond an organization, spreads, and closes (Burt 2005). These are all efficacious examples of the core capability of social relations and social networks.

Woolworth's Good Business Journey strategy complements initiatives like Farming for the Future through setting up ways of measuring progress against commitments in ways that prioritize collective achievements through composite indicators. Pairing this case with Balkema and Romijn study of biomass farming in Tanzania demonstrates the value in concentrating on the broad coherence of shared and appropriate objectives; the Jatropha processing company at the core of Balkema and Romijn's study was in significant difficulties because its objectives for attaining environmental sustainability and its financial performance indicators were in inherent conflict.

Again, Hamman, Methner and Nilsson show that effective and appropriate social relations within Woolworths, and with key partners, has been central to the identification of appropriate corporate objectives and systems of measurement. For example, the development of the Good Business Journey strategy required effective discussions across the organization on appropriate indicators and the codification of all aspects of sustainability. They conclude that the effective development of the strategy was both a business systems innovation and also the introduction of a social process of development, innovation and continuous improvement that incorporated a broad array of Woolworths' staff in social networks:

"Woolworths is particularly notable for the degree to which its strategy and its identity are rooted in engagement with the broader social and ecological systems of which it is part. The company has come to understand itself as an agent of institutional and environmental innovation, not only as a marketing approach for competitive differentiation but also as a core aspect of the way it assesses risk, develops products, and responds to the South African context as a corporate citizen. While there are a number of historical and contextual factors underlying Woolworths' capacity for systemic engagement, perhaps the most important is the company's approach to developing stakeholder relationships, particularly relationships with its suppliers and with environmental experts and advocates" (Hamann, Methner and Nilsson, this volume).

Third, respect, dignity and recognition. Developing this core capability – and its associated functionalities – requires the demonstration of the efficacy of recognizing the values of diversity not just as matters of ethics, rights and corporate social responsibility, but also as assets in sustainable practices. In regard to the central theme of this chapter – the corrosive consequence of pronounced and expanding inequalities – the capability for recognizing the value of diversity requires listening to, and appreciating, the contribution of poor and marginalized communities to sustainable solutions. Drawing again from this volume, McKague, Wheeler and Karnani's chapter, mapping out an integrated approach to reducing inequality through poverty alleviation, serves to illustrate an appropriate approach.

McKague, Wheeler and Karnani show how a key aspect of developing respect and recognition is the discipline of listening, well demonstrated through the World Bank's research series, "Voices of the Poor" These three volumes summarize the experiences of more than 60 000 people living in poverty across some fifty countries. In Amartya Sen's overview of the outcome of this massive listening exercise, "by presenting visions of development as seen by the underdogs of society, Can Anyone Hear Us? helps us understand the real nature of development. The importance of freedom as the central feature of development emerges powerfully from these 'internal' views. These unrestrained voices deserve the attention not only of scholars and academics, but also of governments, international institutions, business communities, labor organizations, and civil society across the world. This is a marvellous introduction to development seen from inside." (www.web.worldbank.org).

Two examples from McKague, Wheeler and Karnani's chapter illustrate how this alternative perspective could shape a "knowledge structure" for a different curriculum. Firstly, they turn to microfinancing. Microfinancing is, of course, well known through well studied and successful cases such as Grameen Bank. However, there is significant value in recalling that the long genesis of initiatives such as Grameen Bank were founded in a close appreciation of the position, and inherent capabilities, of highly marginalized categories of poor people – in Grameen's case, impoverished women in rural Bangladesh (Yunus and Jolis 2003).

Secondly, and based on "listening exercises" such as "Voices of the Poor", McKague, Wheeler and Karnani point to the centrality of small and medium enterprises in creating meaningful employment opportunities within the framework of appropriate government policies – an aspect wholly neglected in the corporate-oriented, top-down approach taken in formulating the "Bottom of Pyramid" model. They argue that, through according respect and recognition to the experience, knowledge and aspirations of poor and marginalized communities, the significance of sustainable employment, appropriate and informed government policies and "third sector" organizations becomes apparent (McKague, Wheeler and Karnani, this volume).

As a set of studies, then, the chapters here by Balkema and Romijn, Hamann, Methner and Nilsson, and McKague, Wheeler and Karnani demonstrate how the substance of the core capabilities of practical reason, social relations and social networks, and respect, dignity and recognition can be developed into the concept of a curriculum for social and environmental innovation. Taken in conjunction with addressing the adaptive preferences that encourage people to opt out of educational opportunities through the internalization of constraints and prejudices, Sen, Nussbaum and Walker's work on capabilities and functionings provides a viable alternative to the predominant trend towards assigning Higher Education the status of a positional good, devoid of both transformative content and the potential for realizing potential and opportunity.

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