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Curriculum Assessment and Education for Sustainable Development: Does the Emperor have New Clothes?

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Introduction

In 2015 the UN system agreed its framework of Sustainable Development Goals (SDGs) intended to guide investments in development through until 2030. Goal 4 and its 10 associated targets explicitly relate to educational development. Target 4.7 (see Annex) is most often identified as the one most closely concerned with the curriculum issues that give meaning to learning. Framework for Action to Meet Basic Learning Needs of the World Conference on Education for All (WCEFA, UNESCO 1990) implicitly located curricula at the heart of development with its commitment to meet needs for knowledge and skill at different levels.

The recent rediscovery of the centrality of learning for development is not new. It was at the heart of the global curriculum development movements initiated in the 1960s, which started with science and technology programmes, and evolved to wholesale national curriculum development in many newly independent countries driven by commitments to invest in human capital and national cohesion. Learning itself is not a development agenda. It is the answer to the question “what learning for what reason” that should reposition curriculum issues back at the centre of the education and development dialogue.

The title of this article asks does the (Sustainable Development) Emperor have New Clothes in a reference to a Danish fairytale (Anderson,1837). If directness is a virtue, as it is in Denmark, then the answer to the question is no. There is a road to travel and those who take it should pause before setting off to reflect on the history of curriculum development in both rich and poor countries over the last 50 years.

The State of Play

A taster of the state of play in relation to whether there is a new “paradigm of learning” being advanced through the SDGs is provided by some recent texts on education and sustainable development from UN documents.

“Education for Sustainable Development allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future. Education for Sustainable Development means including key sustainable development issues into teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption. It also requires participatory teaching and learning methods that motivate and empower learners to change their behaviour and take action for sustainable

development. Education for Sustainable Development consequently promotes competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way. Education for Sustainable Development requires far-reaching changes in the way education is often practised today”.

Leaving aside the oxymoron – all futures are in one sense sustainable otherwise they will not come into existence for long – it is not at all clear how the advocacy gets from a fairly random mix of environmental and non environmental concerns laden with latent assumptions, to the necessity of participatory teaching and learning that results in unspecified changes of behaviour. Education for Sustainable Development “requires far-reaching changes in the way education is often practised today” may be true, but is there an evidence base for this linked to any particular system and what are the examples of good practice to which we should aspire?

Target 4.7 is to be monitored through indicators. Thus the UNESCO – IEA collaboration “will focus on measuring Target 4.7 of the 2030 Education Agenda which includes GCED and ESD, the aim of which is to “...ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture’s contribution to sustainable development.” UNESCO and IEA have already collaborated in identifying a set of potential indicators for measuring Target 4.7, one of which is being considered as a potential global indicator for Target 4.7”.

Target 4.7 appears to be at least 10 not especially cognate targets rolled into one. It is by far the longest SDG education goal, indicative of either lack of consensus in the drafting committee, or attachment to inclusivity at the expense of clarity with “no goal left behind”. This is not to argue that many of the sentiments that lie behind this target(s) have value. But any experienced curriculum developer will have a reflex reaction and ask – What is the definition of sustainability? Are not most of these things already part of well conceived national curricula developed over the last 50 years? What will these things displace from the already over crowded national curriculum? Isn’t global citizenship education (GCED) logically preceded by citizenship education and what is the global state which benefits from the rights and responsibilities of its citizens? What are the desirable learning outcomes specified in terms of observable behaviours that can be judged?

“The outcome document, the Ahmedabad Plan of Action, recognized that the transformation required by the SDGs will require an in depth re-thinking of education itself. It also acknowledged that dominant education systems have tended to impose a narrow conception of rationality at the expense of emotional understanding, learning acquired through experience and traditional knowledge systems. It concludes that “education must be reconceived in a way that allows space for diverse ways of knowing and new ways of being and becoming that reflect inclusivity in the true sense of the term.””

The “transformation required” would be much clearer if the thinking required was shared in detail. Though assertions can be comfortable amongst friends it will come as a surprise to many trained teachers to learn they have a narrow conception of rationality. On what basis they should preference traditional knowledge systems over the effective demand of parents and students for knowledge and skill related to the 21st century and access to higher education remains unclear.

A Brief History of Curriculum and Development

It is very difficult to generalise about curriculum development in low income countries in Asia and Africa. Many countries have a strong colonial legacy and a historically rich educational heritage which differs fundamentally most obviously between Anglophone and francophone and Lusophone systems. Very broadly speaking patterns can be identified which have the following general characteristics.

First, externally determined curricula were the inheritance of many education systems in after 1945. These reflected, with an appropriate time lag, the conventional wisdom in the metropolitan countries which had enjoyed political hegemony over the developing world. These curricula often exhibited a preference for the more conservative rather than radical traditions of the metropolitan countries, bound to fondly imagined memories of past childhoods perhaps more than the realities of the mass education systems of early 20th century Europe and the USA. They were established by colonial and ex-colonial elites with less interest in using curricula to promote innovation and development than in using them to reinforce the status quo.

When rapid expansion in enrolments in these education systems began to occur, often after political independence, a low priority was given to curriculum renewal which was often regarded as a second order priority to increasing enrolments. Thus little of what would now be called curriculum development was in evidence during the 1950s and early 60s. Most expansion merely built on existing imported syllabuses or weakly modified them to remove some of the more obvious distortions inherited from the past. Towards the end of the 1960's, many countries took the first steps towards taking a view of the curriculum which was broader than the definition of a syllabus consisting of a list of topics and began to establish national curriculum units or centres to produce new curriculum often with UNESCO support. These initiatives were stimulated by the explosion of curriculum development in northern Europe and the USA, particularly in science and mathematics, that was occurring at this time as a result of cold war competition in armaments and space exploration.

Second, the subsequent patterns of curriculum development can be categorised as adoption, adaption and local development. Adoption is defined here as occurring when materials are taken largely unchanged from a foreign source. Adoption occurs when existing curricula are used as the basis for development which substantially changes them to reflect a context for implementation that is radically different to the one that they were developed for. Local design occurs where curriculum development is based on attributes of a particular system and does not take its form from materials developed elsewhere.

Advantages of adoption include low cost; short and simple development process; high quality design; easy legitimation by reference to use elsewhere; and the release of resources to support implementation. Disadvantages include the possible mismatch of learning objectives and pedagogical style with those identified as needed; the possible alienation of teachers and students from foreign designed materials; and the risk that patterns of use may demonstrate the need for radical changes which require substantial redevelopment.

Adaptation has several advantages. It is cheaper than local design; it has a shorter development cycle; it can be defended as a modification of the best available practice to suit local conditions; and it allows high quality material to be used as a basis for development. However it may have the disadvantages that the adaptation necessary may be so substantial that local development might be more efficient; it may be difficult to adapt parts of a coherent programme without destroying the integrity of the whole; it may still be seen as essentially foreign and rejected by some teachers and students as a result; the process of adaptation may be short circuited and revert to adoption if resources are scarce.

Local design is potentially attractive since it offers opportunities to match materials with aims and objectives from the outset; it can accommodate local pedagogical traditions; assessment procedures can be integrated to outcomes thought desirable; development can incorporate formative evaluation more readily; users can be involved in the development process and the prospects for effective implementation enhanced as a result. However it is the most expensive and time consuming option; the quality of materials may not be comparable with those produced in rich resource environments; and prolonged internal negotiation may create as many supporters as antagonists of new approaches.

Third, the 1970s saw a proliferation of curriculum development activity, much of it derivative and orientated towards adoption and adaptation of what was thought to be good practice in metropolitan countries. A key ambition during this period was to indigenise curricula to make them appropriate to national needs and update antiquated material in the cause of

accelerating modernisation. Most attention was focused on the design of written materials at school level, with many attempts to promote more child centred and heuristic pedagogies. Curriculum development activity related to in-service and pre-service teacher training generally came a poor second despite the need to share new skills with teachers and generate a pull rather than a push innovation strategy. Some adaptation and indigenisation took indirect forms - when, for example, programmes were adapted for use in one country and these adaptations were used as the basis for adaptation in a third country. Frequently adaptation concentrated on modifying content without questioning very deeply aims, dominant views of the subject-based nature of academic knowledge, and the prevalent conventional wisdom on teaching methods.

Most activity centred on the strategically important secondary cycle level where allocation and selection of pupils was of most concern. Much of higher education seemed largely untouched by the flurry of activity, not least because many subjects were effectively using the same content and methods as those in metropolitan countries. Primary curriculum development was all too often the poor relation to that at secondary with resources generally forthcoming at a slower rate.

Fourth, public examining and assessment systems changed slowly and generally failed to reflect new curricula emphases in teaching and learning. Changes in the content of items did occur but often the style and quality of examining fell a long way short of capturing key aspects of new curricula and, as a result, often undermined rather than reinforced them. The consequences of the "Diploma Disease" were widely felt in curriculum implementation with the long shadow of the examination tail wagging the curriculum dog.

Fifth, the interests of publishers have always shaped curriculum development and the design, production and distribution of curriculum materials. In some countries learning material production has remained a public responsibility. In more cases it has become wholly or partly sub-contracted to private for profit providers albeit sometimes with a degree of quality assurance and price control. These interests now extend on a large scale into new technologies for learning including pcs, tablets, ICT services, whiteboards, projectors etc.

Sixth, after the impetus given to investment in basic education by WCEFA in 1990 there was a sea change in patterns of investment towards primary education. This took a decade to become dominant and was characteristic of the period from 2000 to 2015. International interest and support for investment in post primary education dwindled and at least some of the gains related to the investments of the past were lost. Emphasis on early grade reading schemes and early grade mathematics displaced many other forms of curriculum development. The exception relates to the education of girls which benefited from large scale and successful interventions to address possible sources of exclusion of girls. There were very few curriculum initiatives directed at the learning needs of boys despite widespread and increasing evidence of under performance.

Seventh, enthusiasm for child centred approaches and activity based pedagogy remained regarded widely as progressive and desirable in the development agency world. The preference was less prevalent in many national systems which struggled to reconcile these approaches with cultural preferences for classroom organisation, appropriate relationships between adults and children, epistemic disjunctions in understanding of the nature of knowledge, and ontological discontinuities between teacher styles.

Eighth, as national curricula developed many became overloaded with a large number of periods per week and subjects to be taught. Perhaps surprisingly in some national curricula there were as many as 30% more days in the year, and 30% more teaching periods each day than in a typical OECD country. Alongside this pressure on curricula time it became increasingly difficult to organise practical work in subject like science and this became much less common.

Ninth, high stakes formal assessment has spread to every country in the last two decades. It takes many forms and is increasingly linked to global aspirations and standards. Its influence on curriculum, as already noted, can be pernicious in the sense that valid knowledge

becomes defined by what is assessed and what is not assessed is not valued. There are other implications. Many affective attributes – emotional intelligence, empathy, compassion, tolerance – are difficult to measure, unstable over time, have low predictive validity and may be co-constructions of context. If they are used they can often easily be gamed if the stakes are high. Some things are better judged not measured, and others are only manifest in real time in a natural environment, not in test conditions.

Finally, globalisation in its various forms has shaped curriculum development post Millennium. Rapidly increasing international student mobility, aspirational linking of national and international qualification systems, and new technologies for learning and teaching are leading to convergence in form and content at an unprecedented rate. Paradoxically new technologies associated with the internet make it much more possible to respond to diversity of need and capability.

Approaches to Curriculum Development

Many countries with successfully developing education systems now have several decades of experience of curriculum development. This rich history makes evident that there are no quick fixes that can be offered to those who wish to embark on similar journeys. Systematic, incremental change with consistent approaches across the curriculum has proved more durable than attempts at massive system wide transformation. The exciting allure of the latter is evident, but the demonstration of enduring impact is elusive.

Many approaches have been tried with as much variation in outcome as in approach. Prescriptions are risky for those who wish to preserve their integrity as events unfold. Nevertheless some attempt at synthesis seems worth the risk, if only to provoke disagreement.

Simply put there are at least five different approaches to curriculum development that can be identified from experience. These carry with them assumptions of the purposes and processes that curriculum development embodies.

First, systems approaches view educational institutions as embedded in a wider system that has identifiable goals. Curriculum development from this point of view is initiated as a result of a commitment to achieve these goals. The goals are essentially generated by the political system and the curriculum developer's problem is to design and implement programmes that will achieve these goals. The education system has to be re-tuned to deliver appropriate educational outcomes for changing circumstances. Poor goal achievement needs to be identified and remedial action taken to increase the efficiency with which the system performs.

Curriculum development is therefore essentially a goal directed process towards defined ends that require the detailed working out of learning programmes and their evaluation against the pre-set goals.

Second, bureaucratic approaches to curriculum development are similarly defined within general system goals but they have static rather than dynamic characteristics. Rules and regulations, agreed syllabuses, and legal obligations provide the benchmarks against which curriculum development is judged and the needs for it are identified. As these change, materials and courses may be appraised against criteria which are more administrative than educational. Curriculum development then takes place to satisfy approval processes where the regulatory purpose is given a conspicuous prominence.

Curriculum development from this point of view is initiated to meet criteria rather than system goals and may be regularised on a fixed length cycle of official approval for different types of courses.

Third, scientific approaches to curriculum development claim that research and evaluation on the needs of learners, the learning process, and curriculum effectiveness are at the centre of

initiation. This approximates the research, development, and diffusion sequence sometimes applied to innovation in science and technology. The curriculum developer in this model must undertake basic and applied research on teaching and learning to arrive at the more effective design of learning materials and curricula. More sophisticated models have feedback built in to them so that formative experiments feature prominently and development is planned as a meticulous process of trial, evaluation and revision.

Curriculum development is therefore driven by curiosity, theories of how learning takes place, and the appraisal of the effectiveness of existing practice.

Fourth, problem Solving approaches offer a fourth alternative. In these "organisational pain" is important. A problem is experienced within educational institutions and the curriculum developers first task is to find out what problems have arisen and what their causes are. The problem solver diagnoses the difficulty, searches for a solution which may or may not involve curriculum development, and then offers it to the organisation for trial and refinement.

The curriculum developer in this approach may be more of a process helper than a designer, offering suggestions and deepening the problem analysis to the point where those suffering the problem realise what action has to be taken. Initiation comes from the institutions that experience difficulties.

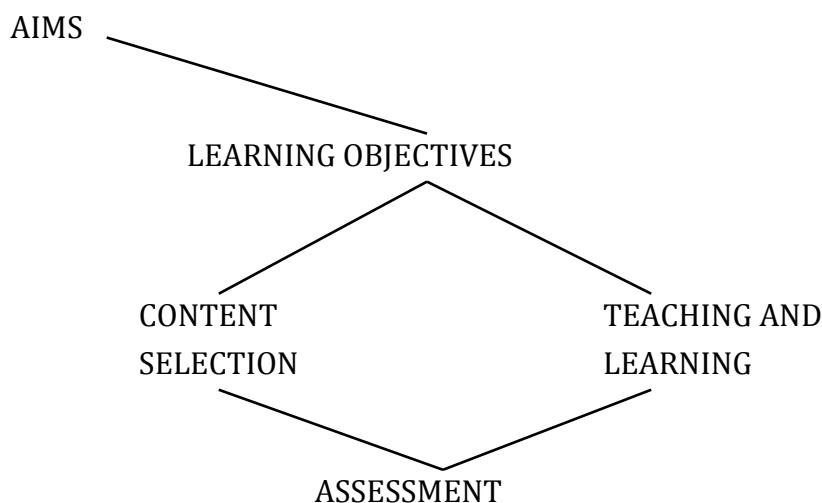
Fifth, charismatic approaches are difficult to classify since their nature makes them unique to individuals and circumstances. Strong beliefs, convincingly articulated by those in influential positions, are often the initiating activity. When they succeed in carrying other people with them they can generate curriculum development activity which reflects their educational philosophy. Their motivation comes from conviction rather than research; their goals may not be those of the organisations in which they work which they may seek to change.

These approaches are linked to the inspirational insights of individuals and seek conversion to a new set of beliefs, whether they be in the teaching of science or of drama, that are largely unsupported by systematic analysis.

Models for Curriculum Change

These different approaches all have to relate to core aspects of curriculum broadly defined as all the activities that determine a process of learning and include educational aims and objectives, related to content, pedagogy and an assessment strategy to evaluate outcomes. A widely recognised model of curriculum is shown below.

Domains of the Curriculum



This model highlights the inter-dependence of decisions in one area of the curriculum on those in others. Selection of content will influence the kind of objectives that are attainable; particular educational objectives cannot be achieved through some methods of teaching and learning; decisions on assessment are almost certainly likely to influence patterns of teaching and learning. Though this seems fairly self evident much curriculum development has been undertaken which, by accident or design, did not recognise the inter related nature of decisions in different domains.

The models' value is that it reminds us in a simple form to consider what is being proposed in all these areas and how decisions interact rather than focus narrowly on just one. More particularly it is a reminder that the process is not linear – goals to objectives to content selection to teaching methods to assessment – but iterative moving back and forward between each domain.

A second simple model that can be useful to curriculum developers is concerned with drawing attention to the temporal dimensions of the curriculum development process. Planning requires awareness of the past, action in the present, and the identification of future outcomes. The process of curriculum development must then take account of antecedent conditions that exist prior to the development of new curricula and which in part create the need for curriculum development; the transactions in the present that will shape the curriculum in action; and the achievement of aims in the future that can be used as a criterion against which to measure relative success or failure. Stake, the well known evaluator, developed a model which provides a useful heuristic matrix for curriculum developers.

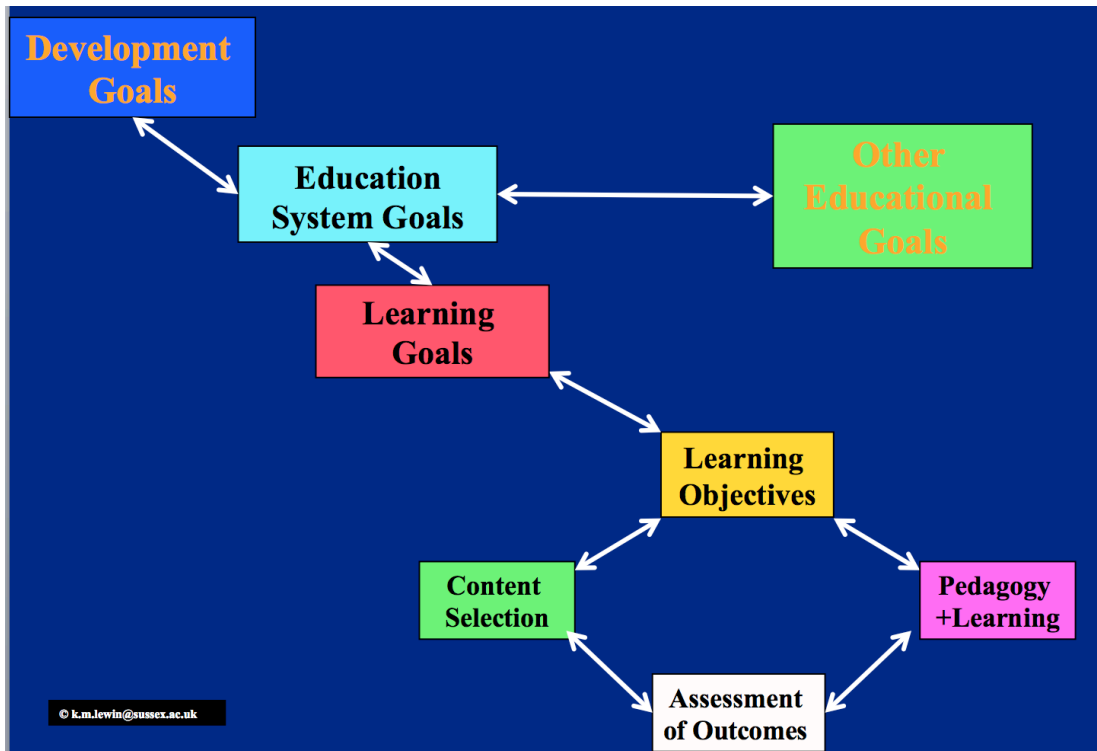
Countenance Model of Change – Robert Stake

		INTENTIONS	OBSERVATIONS
PAST	ANTECEDENTS		
PRESENT	TRANSACTIONS		
FUTURE	OUTCOMES		

Different boxes within this matrix decisions can be audited by comparing what is intended, with what is observed to be the case. This is a useful reminder not to stray too far from the real world of the institutions where new curricula will be implemented. It also helps designers to be explicit about the assumptions that they make about the pre-existing conditions, the kinds of learning transactions that they wish to promote, and the purposes to which these are directed.

Curriculum development related to the Sustainable Development Goals has to be located within national systems of education with their specific histories, preferences and aspirations. If this is to be the case then the kind of curriculum planning needed will take its cue from national development goals that map onto education system goals. These will be partly orientated towards the curriculum and goals for learning in different domains of cognition, and partly orientated towards all the other purposes that education systems have which re not best described as learning in an explicit curricula sense. Seen this way it is clear two conversations must take place about how education for sustainable development might appear in and across the curriculum, and how it may be manifest in the broader social and economic functions of education systems e.g. promoting social mobility, allocating school leavers to jobs, and contributing to social cohesion.

Map of Curriculum within National Education Systems



The SDG text announces a ‘new agenda’ for sustainable development which seeks to provide ‘inclusive and equitable quality education at all levels’. Education is mentioned 22 times. On almost all occasions the reference is to access to education and to participation in education as a necessary component of development with little indication of what learning objectives, content or pedagogy might matter for sustainability. Goal 4 is surprisingly mute on the subject of sustainability which is only mentioned in target 4.7. If the four references to sustainable are removed the target 4.7. reads “ to ensure all learners acquire the knowledge and skills needed to promote development, including, among others, through education for development and lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to development’. The qualifying adjective seems to add little of substance. The text leaves open whether it is promoting *sustainable educational development* or *education for sustainable development*. It lingers longer on the former than the latter.

Though the jury is still out the the SDGs, especially those in education, have turned out to be ‘more of the same’ as I argued in 2012, and fail to articulate a new and compelling vision, or plausible diagnosis of the shortcomings of the existing architecture. The SDGs are a list not a recipe, as was also the case with the MDGs. Achieving all the SDGs may make the world a better place. There is a broad consensus that most of the outcomes they flag are desirable. However, all the Goals taken together are no guarantee that development will take place, and are not in themselves the basis for a development strategy or helpful in redefining the curriculum.

Curriculum is inseparable from educational context but the aspirations for a new paradigm for education appear context blind and no examples are on offer located within specific systems. Global goals and objectives have to resonate with national priorities or they will be ignored. The current SDG for education is not distributional in character – a major omission if poverty is partly the product of the distribution of wealth as well as its generation. Moreover, the SDGs are presented statically, with no obvious mechanisms to evolve. The MDGs remained enshrined in stone (or cast in concrete) for 15 years. This is longer than any corporate development strategy is likely to be relevant, and longer than most national governments last

in democratic states. If the curriculum is static for fifteen years it is almost certain to lose relevance. The curriculum implications of the SDGs should be conceived of as dynamic, responsive and iterated with changing circumstance if they are to be durable and resilient over. That would be an advance over EFA and the MDGs.

Education is at the heart of development and learning creates and transfers capabilities. These are realised through the curriculum which structures experience for learners and teachers, organises knowledge and skill learning, and makes it possible to provide access and opportunity efficiently and equitably. It may not guarantee enlightenment and freedom from superstition, but it makes it more likely.

The SDGs and Goal 4 locate education more as part of the definition of development than as a means to achieve it. Currently they have yet to advance discussion of what kind of education is to be valued for what purpose? An opportunity has been missed to dwell more on that which transforms minds, hands and hearts and offer insight into what education designed to promote development that is climate friendly, human rights respectful, and economically advantageous might look like.

Is it unreasonable to expect more clues as to what should go into the 15,000 hours of school that the SDGs anticipate for all children? What would constitute an education fit for purpose in the 21st century that is different to that which proved so successful in the 20th century? What would close the cognitive chasm that exists between the achievement of 15 year olds in different countries that is equivalent to six years of schooling? What would reduce the differences between the richest and the poorest students within low income countries which mean that the highest scoring students perform at rich country levels, and the lowest simply fail to score? How can all 15 year olds understand enough science and technology, and logical reasoning, to have an informed view on climate change, pollution, urbanization, and epidemic and endemic diseases? What kind of citizenship education might contribute positively to reductions in conflict and levels of distressed migration and would global citizenship add any value? What competencies related to health and wellbeing, and environmental economics, should every 15 year old have?

A convincing theory of change and “good” development remains conspicuous by its absence in the SDGs and strikingly so in relation to education systems. If the specification of Goal 4 is read on its own it appears substantially similar to the Jomtien and Dakar goals and targets. There is nothing in the text that really explains how the new education goal and ten targets are any more or less likely to lead to sustainable development than the previous sets of goals and targets. Or how the new goals and targets for education will relate to all the other SDGs most of which have educational dimensions. Or why “reaching the furthest behind first” makes sense where failure to deliver services is systemic, rather than on the margin of fundamentally sound education systems. Or what major or minor changes to the curriculum should come about as a result of the SDGs.

The staggering claim that “we have mapped the road to sustainable development” in one short document, sounds like a triumph of aspiration over cartography. It comes with a limited awareness of the history of sustainable development since the Brundtland Commission of 1987 introduced the idea into mainstream development theory. Aspirations to transform learning need more than rhetorical definition and can be simply put to the test of empirical demonstration. Sustainable development ensures the needs of the present are met without compromising the needs of the future (Brundtland). What are the implications for national curricula, and what lessons have been learned from decades of experience of curriculum development about innovation that is pulled by users not pushed by providers, responds to effective demand, has a coherent epistemology, and contributes to national development priorities.

Annex 1: UN Sustainable Development Goals Number 4

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes

4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education

4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university

4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations

4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy

4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries

4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States