
EDUCATIONAL EQUITY IN THE TIME OF DIGITISATION

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ABSTRACT

Worldwide educational participation and performance are characterised by rampant inequality. This not only reflects unequal involvement in and benefits from technology (in the past referred to as the “digital divide”) but also embodies age-old imbalances between and within nations, perpetuated by unjust systems and discriminatory practices. Accordingly, the noble aim of ‘digital equity’ cannot be achieved in isolation: the underlying injustices (notably educational imbalances) must first be remedied, thereby providing a clear goal for digital inclusion. The necessary three-fold strategy, therefore, is

- Global School participation For All, fully embracing digitisation, leading to
- Educational even-handedness which, in turn, promotes
- Digital equity.

Consequently, the immediate aim is to encourage the world (bilateral, national and charitable donors, private companies, non-government actors and committed individuals) to provide the necessary support – as specified herein – to enable everyone everywhere to become self-directed Global School (GS) learners and/or learner-directed teachers. This paper, taking forward the present authors’ recently published book “The Global School – Education in the Time of Digitisation”, describes the forthcoming and fundamental educational transformation that is engendering the GS and sets out how that may best be promoted, thereby paving the way towards genuine and purposive digital equity.

Key Words: Digitisation, Educational participation, Educational Equity.

INTRODUCTION

DEEP DISPARITIES IN THE DIGITAL AGE

The world, countries within it, institutions within and across those countries, and thus people’s lives, are being – and will, exponentially and largely unpredictably, continue to be – dramatically transformed by ever-more-rapidly progressing technology, in effect by Digitisation. The World Economic Forum’s founder tells us that “...we stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another... in its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before” (Schwab, 2016).

As Joke Hernes observed some time ago (2006), “the passport to world citizenship has become ‘@.’” And, as Edward Mendelson subsequently declared, “Human character changed on or about December 2010, when everyone started carrying a smartphone” (Mendelson, 2016). The democratisation of virtual reality is not without its dangers – some commentators think of little else. In these gig economy days of side hustlers, e-entrepreneurs and digital nomads, it is Facebook, Amazon, Apple, Netflix, Google, and others about to emerge, that delineate the frontline in the battle for global influence. Equity, digital or otherwise, is not their objective.

It would be naïve not to recognise that earlier expectations that social media would enable the billions to become global village citizens have sadly proved fanciful. Dishonest, deviant and predatory behaviour are intensified by the internet and magnified through the anti-social intrusions of social media. Potentially, we are at the threshold of an era of worldwide democratic relationships – but entering and enjoying that emerging epoch will need to be accompanied by wise precautions and an appropriate global regime to govern the multifarious social and information networks is easier said than enacted. Thus Zuboff warns against the “deeper, destructive predations of surveillance capitalism” (2019) and Brindle talks of “our fractured worldviews, competing fundamentalisms, weakening of social bonds, and distrust of one another” (2019).

In his forward to Freire’s *Pedagogy of the Oppressed*, Richard Shaull writes that “Our advanced technological society is rapidly making objects of most of us and subtly programming us into conformity to the logic of its system... The paradox is that the same technology that does this to us also creates a new sensitivity to what is happening” (Shaull, 1968). Astra Taylor explores what a ‘democratic internet’, as opposed to an “empty Silicon Valley dummy”, would look like (Taylor, 2013) observing that “...the utopian potential of the net is real (but) the underlying economic conditions haven’t changed. The same old business imperatives, the same old incentives that shaped the old model and made it so problematic are still with us” (*ibid*). Clearly, ‘digital equity’ is an empty aspiration unless every set of humans has comparable agency and involvement as opposed to vastly differing levels of mastery, naivety, proprietorship and manipulation.

We are now undoubtedly in VUCA circumstances, characterised by volatility, uncertainty, complexity and ambiguity (to utilise Lemoine’s acronym of 2014), exemplified by (almost) universal digitisation. Many dramatic descriptions have been drawn and multifarious fantastic forecasts fashioned. However, lack of connectivity makes digital technologies difficult for the majority of many populations, while the high costs of data and voice bundles make them unaffordable. There also are persistent digital divides across gender, geography, age, and income dimensions within every country.

The recent analyses by Thomas Piketty (2014) highlight the significant increase in social inequality and the return of patrimonial capitalism. The IMF’s Christine Lagarde reports that “since 1980, the top 1% globally has captured twice as much of the gains from growth as has the bottom 2%” (Lagarde, 2018). Guy Shrubsole states that “half of England is owned by 25,000 landowners – less than 1% of its population” – noting that “a few thousand dukes, baronets and

country squires own far more land than all of middle England put together” (Shrubsole, 2019). How may there be digital – or any other form of – equity when such underlying inequity prevails?

Intangible capitalism, Uberised and Amazonified working conditions, and the upcoming post-human economy have the potential to entrench and exacerbate inequality – both within and between nations, particularly between the industrialized and developing world. There are optimistic theories about development – about a great technological bound forward or about latecomers’ ability to leapfrog generations held back by already outdated technologies. Pessimists (who refer to themselves as ‘realists’) affirm that the vast divisions between rich and poor will always be with us, in power relations as well as in wealth and income. While international leapfrogging cannot occur within current conceptualisations, perpetual inequity is neither inevitable nor acceptable. And it is education (though certainly not in its present form) that may act as catalyst, with the humblest of humans being able to ‘learn’ their way out of disadvantage and the most impoverished sharing and enjoying lessons equally with the most privileged.

EDUCATION: THE GREAT UNEQUALISER

Despite the *educare* enlightenment slogans, education systems remain geared to providing compliant labour to increase the wealth of a few, tailoring people to the workplace, and engendering the false notion of education as human resource investment. Education, as presently practiced, is the enemy of equity, despite voluminous policies and myriad political speeches to the contrary. At the slogan levels, diversity is delightful and inequity abhorred. In practice, and in educational institutions and processes everywhere, categorisation and rejection are rife. While education (as discussed below) should neither be aimed at nor assessed in term of ‘equity’, universal connectivity straddles educational institutions worldwide and cuts across the institutional, societal and historical factors that gave rise to pernicious socio-educational discrimination.

School systems everywhere, geared to selection, rejection, competitiveness and fashionable theories of deep marking – often in triplicate – are major causes of anxiety, serious health problems and even suicide, on the part of teachers as well as of learners. Schooling worldwide is characterised by misery, boredom, bullying, deceit, anxiety, humiliation, brutalisation, ethnic – and many other types of – discrimination, religious – and many other forms of – indoctrination, sexual – and many other kinds of – exploitation. It should not be like that. In terms of each of human happiness, good behaviour, freedom from exploitation and overall well-being, education, as presently practiced, is not working – and Information and Communications Technology (ICT) has, on balance, maybe made it worse (see, for example, OECD, 2016).

Education cannot overcome all of society’s problems nor may it cure the multiplicity of maladies wounding our imperfect world. But what it can and must do is to provide the best possible setting wherein those who teach and those who learn may encounter and alleviate their own inadequacies, recognising as they do so the common challenges besetting all of humanity and,

through that universal connectivity, realising that, as humans, our differences are exceeded by our similarities. So let it be emphasised that Digitisation offers an end to the reproduction of educational inequality from generation to generation – just as digital equity is both of limited value in itself, as well as impossible, unless enabling some greater goal, names equitable educational involvement.

Educationally, we cannot win the Information Campaign, nor indeed the Knowledge Battle, let alone the Wisdom War, with medieval weapons and an autocratic command system. We as a world have learned a great deal from the economic and technological phases of globalisation thus far and, provided we reflect upon those lessons, possess the basic concepts for the more challenging phase of envisaging, constructing and maintaining a universal educational structure, necessitated and enabled by our integrated world system. Responses to the educational challenges of the Digital Age should be designed and delivered in full understanding of the entirely fresh circumstances, profound opportunities and potential dangers. If responded to democratically, participatively and creatively, Digitisation offers an unparalleled opportunity to redress imbalances.

An entirely new paradigm has materialised and the educational challenges and opportunities are of a different dimension than hitherto. The necessary response covers design, content, delivery, school organisation, classroom culture and institutional philosophy, embodying and integrating contemporary technology in its connectivity, organisation, curriculum, learning methods and management. Nothing educationally will ever be the same again.

Schooling, and children experiencing it, over the centuries, have been misused (nay, abused) in the service of various causes. Those who currently advocate that school curricula should be focussed upon, for example, livelihoods or social justice or – the current fad – sustainable development, are good people but, despite (and in a sense because of) their goodness they are in cardinal error. This use of schools to achieve religious, military, ideological, empire-governing, developmental or environmental outcomes, no matter how well-intentioned, is akin to using them in the production of chimney sweeps or child soldiers.

Whether educational processes and content should or could be neutral is by no means a new issue (see, for instance, Freire, 1963 and, indeed, Douse, 1973). What is undoubtedly new is the learner autonomy brought about by instant universal connectivity. Digitisation has revolutionised both “learning to learn from the cognitive point of view and learning to live together from the social point of view” (to use the distinction utilised by, for instance Tedesco, 2005). It is the learner who now occupies the driving seat; the teacher offering guidance – “the guide by the side” (as opposed to direction – “the sage on the stage”) and refraining from determining the destination.

With universal devices and connectivity, ‘search’ works the same, for both the distinguished computer-shy professor and the teenaged digital savvy. Moreover, as all learners and all teachers

worldwide are now (about to be) in contact with one another, the educational opportunities are of a different dimension than hitherto, comprehensively shared as opposed to discriminatorily segregated. As Foer suggests, “there has never been a better time to advance a vision for how to organise technology in a way that benefits everyone” (Foer, 2017). Only by recognising, planning for and promoting this evolving development may education’s worldwide potential for communal well-being and human happiness be fully fulfilled.

The tyranny of poverty and related gargantuan inequities, deficiencies and volatilities are all embodied within education. The participative connectedness of all learners is something more than enabling development: it is development. But it has yet, with universally-enhancing, equity-accomplishing and profoundly humane consequences, explicitly to occur. Recognition of the magnitude of on-going and future economic and labour market changes, within the broader context of personal and socio-cultural actuality generally, necessitates and enables an across-the-board transformation in the objectives, content and approaches of education. The paramount challenge is not to improve 20th century education in and for this Digital Age – the paramount necessity is to reinvent it for our times and make it future-proof.

With these fundamental (some might say utopian) transformations, the substance, practice and consequences of education can and should become much more equitable, ethical and enjoyable (and far less competitive, test-oriented and world-of-work-dominated). Much attention needs to be paid to ensuring that, while genuine private sector participation is encouraged, the commodification of education is made redundant. With Digitisation, once the far-reaching possibilities are comprehended and the challenges faced, learners and teachers may come into their own within an inclusive and equity-driven framework embodying lifelong educational opportunities and advancing equality of outcomes for all.

TOWARDS A STRATEGY

Given that there is much inequity, generally as well as digitally, it is necessary to distinguish means from ends and to delineate feasible pathways towards appropriate goals. While Dineva Snejana and Nedeva Veselina make the arguable but far from self-evident point that “E-learning enables equal access to quality education” (2018), ‘access’ has always been the wrong word. We are really talking about full, voluntary and enjoyable participation, at a similar level on average, across all sets and subsets. Which means equity between men and women, old and young, Swedes and Somalis, paupers and billionaires, city-dwellers and rustics, and between primary drop-outs and post-doctoral geniuses. But, as already emphasised, how may taking part in anything (learning, yachting, book clubs, debating, golf, aeronautical engineering...) be universally equitable in these rampantly unequal circumstances? Even were it feasible to provide everyone across the world with devices, systems and affordable access, the underlying disparities would persist in that the several groups’ grossly unequal ability to participate effectively would still characterise the reformed situation. Giving every athlete spikes would not lead to their all crossing the finishing line simultaneously.

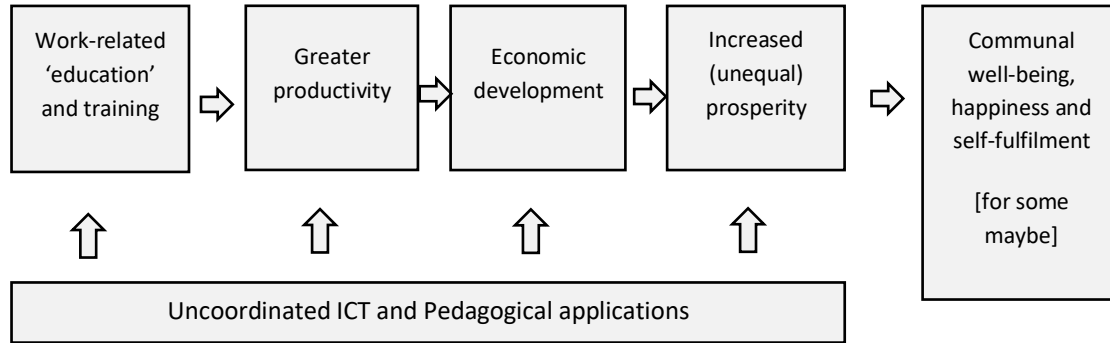


Diagram 1: The Pre-Digitisation (Dark Ages model)

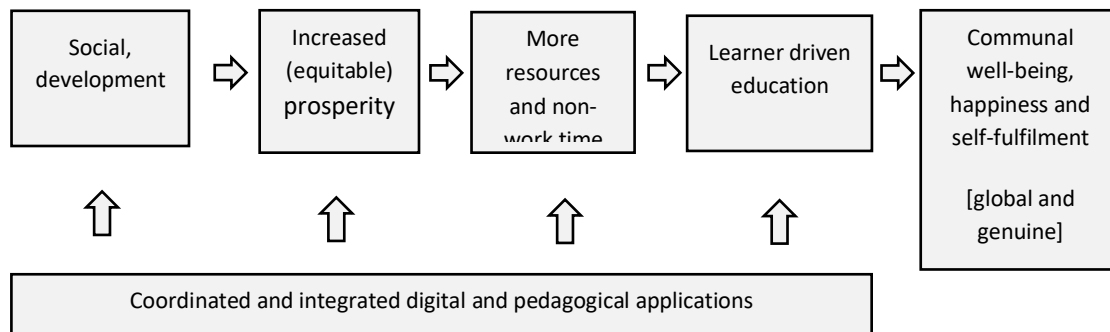


Diagram 2: The Global School (Digital Age model)

Part of the confusion arises from regarding digitisation as, if not an end in itself, then as a means towards productivity, profits and prosperity – both individually and nationally. But, at best (and as illustrated in Diagram 1), enhanced earnings, economic development and increased Gross National Product (GNP) are but means to the ultimate ends of human happiness, personal fulfilment and communal well-being (Diagram 2). And it is education that is not so much the ultimate enabler as the manifestation of that culmination. Henry Sidgwick (1874) asked “what is the point of education if it doesn’t lead to greater happiness?” [In fact the great nineteenth century utilitarian moralist specified ‘higher’ education, but he would indubitably allow us to extend the scope of his sagacious aphorism for present purposes.]

Universal connectedness not only makes the Global School necessary, feasible and inevitable. It offers also an opportunity (of the kind that only comes once every six centuries or so) to explore entirely afresh what education is for and, hence, what it should be about and like. The Digital Age demands and facilitates an entirely fresh philosophy of education – if this is not recognised, identified and applied, then Digitisation will simply make a deficient system more powerful.

According, the best route towards the achievement of digital equity and, more meaningfully, the real justification for proceeding in that direction, is depicted on the roadmap that highlights destination **EDUCATION** in big bold letters. The following five steps encompass the proposed way forward:

- Digitisation makes possible and inevitable the Global School (GS) – see below;
- The immediate aim is to enable everyone to become full GS participants;
- This will enhance educational equity;
- Which, in turn, will bring about a significant move towards digital equity but also – and of even greater significance –
- Will make a substantial and direct contribution to human happiness, personal fulfilment and communal well-being.

Economic growth is a pre-Digital Age obsession: robots may not pay taxes. Rather, the love of learning and the ability to learn, to handle information expertly ('information literacy' and/or 'computer comfortability' and/or 'digital fluency' – call it what you will) and to enjoy mastering digital tools may well be amongst the competencies that individual learners set out to acquire as ends in themselves.

Digitisation has changed, and is continuing apace further to change, both the nature and aspiration of educational objectives and the means and enjoyment of their achievement. While, for instance, banking, entertainment and telecommunications are undergoing wholehearted digitally-based makeovers, this is yet to occur in the education sector. The objectives of those engaged in those other sectors are fairly clear – the goals of education are contested. Accordingly, educational Digitisation, if it is to be successful, must articulate with utterly fresh understandings of what education is and is for.

'Revolution' can mean one of two things. One is the 'orbital motion about a point' which, in this case, implies the continuous concentration around the conventional minutia of how educational support may eventually translate into economic development without really getting anywhere new. But 'revolution' may also signify the 'forcible overthrow of an obsolete social order or system for an original one', typically based upon an awakened consciousness. In this present context, this would be the awareness that enabling education to be enjoyable now, as opposed to its leading on to something that leads on (et cetera et cetera) to something that might be enjoyable far into the future, is the highest priority. That delivering happiness now is more significant than arranging its possible arrival, to some extent, for some, in some far-off epoch.

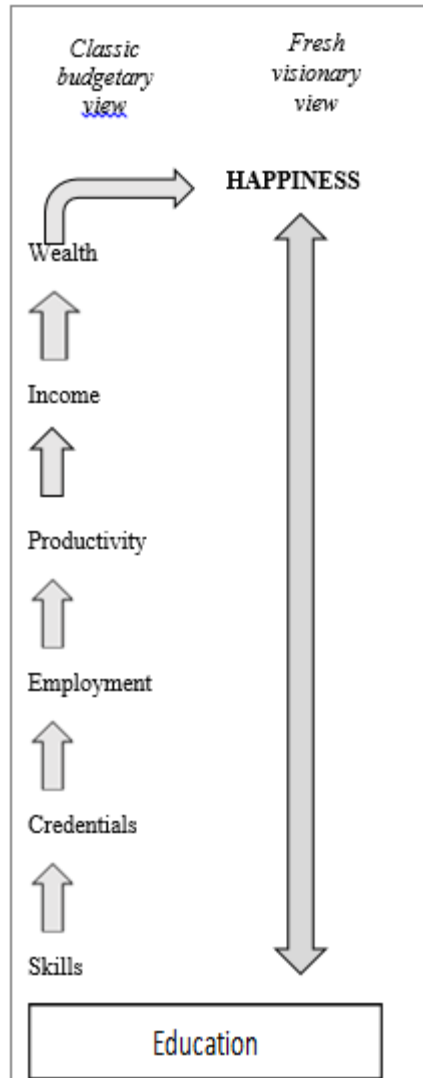


Diagram 3: Deferred Gratification and Present Enjoyment: alternate (non-exclusive) routes to Happiness through Education)

THE GLOBAL SCHOOL

Let us draw an analogy. For over two millennia, there have been numerous discrete libraries, each tied to a physical location, each providing valued services (predominantly books) to their particular customers. Relatively recently, there have been inter-library loans, and then faxed, and

then emailed exchanges of material, constituting the late-20th century ‘Wow!’ But, with Digitisation, it is sensible to conceive of the one fully-connected worldwide library (the ‘Global Library’), enabling any user anywhere to access information, to contribute to the vast body of facts and ideas and, indeed, to print out items or download books and journals for private study and enjoyment on hand-held and other personal devices.

And, in a similar way, instead of multifarious and isolated educational institutions of varying natures, locations, qualities and aspirations, with Digitisation it is now feasible and necessary to think of the Global School as the one (soon to be fully-connected and networked) worldwide educational institution. Reflecting the emerging duality of consciousness – the virtual and the immediate – this combination will be so commonplace as to become unnoticeable, as illustrated in this recent imagining by the present authors:

“There are about thirty teenagers in the room. Most are deeply involved with their handheld devices, type-tapping away, speaking, listening, photographing, manipulating graphics, researching, up- and down-loading, dispatching items for instant printing... Some are finalising assignments for submission; one group is building up a family history diagram on a wall screen; a teacher is attending face-to-face to another’s question about genealogy. But this isn’t the entire class – some twenty others, including adult learners, are tied in from locations elsewhere, mostly far overseas, all having closely followed the teacher’s introduction and, along with those physically present, proceeded in their selected directions at their own pace. This is a Caribbean History course, focussing today on indentured plantation workers. Live interviews with some of their descendants may be conducted by any learner, along with accessing film, historical documents, virtual museum visits and other relevant materials. The learners are labouring in the fields, encountering the economics of sugar, perceiving it from the plantation owners’ perspectives, and then from the workers’ families’, and each is reflecting upon the overall phenomenon” (Douse and Uys, 2019).

The Global School incorporates, integrates and builds upon the synergistic coexistence of the online and the face-to-face. Alongside the actual, the virtual will from now and henceforth be a vital and integrated element of everyone’s everyday education: so central to teaching and learning that it becomes indistinguishable from the more traditional components. As in life beyond schooling, the personal devices will be ever-present and, responding to that reality, online and blended methodologies may gain coherence, open learning curricula will achieve legitimacy and the distinctions between the concrete and the cybernetic shall wither away.

Once it is recognised that all learners and all teachers are in the one universal school, everyone’s education – and thus every individual life – may develop what Amartya Sen called ‘capabilities’ (Sen, 2002) manifesting the right “to feel (and be) of value, to engage in society (worldwide as well as locally) and to have a stimulating, thriving and uniquely self-fulfilling life”. The Global School resembles in many respects a neural network, whose inter-cellular connections and integration offer synaptic synergies making the whole significantly more effective, more evolved, more alive, than the sum of its parts: essentially a genuine synergy which not only

embodies ‘power to the learners’ but has the potential to empower the worldwide impoverished multitude.

Universal connectedness not only makes the Global School necessary, feasible and inevitable. It offers also an opportunity (of the kind that only comes once every six centuries or so) to explore entirely afresh what education is for and, hence, what it should be about and like. The Digital Age demands and facilitates an entirely fresh philosophy of education – if this is not recognised, identified and applied, then Digitisation will simply make a deficient system more powerful. This – the Global School – will indubitably come to pass: precisely how and when it does so, and exactly what form it should best take, remain to be determined.

Further explanations and implications of the Global School are available in relation to curriculum (Douse and Uys, 2018a), pedagogy (Douse and Uys, 2018b), educational planning (Douse and Uys, 2018c), educational psychology (Douse and Uys, 2018d), education and democracy (Douse and Uys, 2019a) and generally (Douse and Uys, 2019b and 2019c). The conceptualisation of all educational institutions being integrated elements of the one universal organisation illustrates the emerging situation, with details undoubtedly spectacular but as yet unknown exactly. Precisely how and how soon its appearance will occur remain to be determined but let none doubt that the Global School is wondrously upon us.

LEARNERS AND TEACHERS

The new era ushered in by Digitisation, symbolised by the emergence of the Global School, is as utterly changed from that which has gone before as would have been the pre-books to with-books transformation. Such a holus bolus renovation is necessitated and enabled by Digitisation and the GS’s particular manifestations in relation to what is to be learned comprise the emergence of the transformative and transnational Learner-Driven Curriculum. This, of course, needs to be matched by the development of the convivial and constantly creative Learning-Supporting Pedagogy.

From the secondary and lifelong education levels onwards, the learners ‘own’ the curriculum. From transition from primary into secondary and onwards, and through life thereafter, the curriculum is possessed by the learners. Given their fingertip access to virtual infinities of information and legions of fellow-students and teachers, along with their unrivalled acquaintance with their own emerging interests and fascinations, it could not be otherwise. And this open and active participation has profound implications for the substance, creation and transmission of information, ideas and attitudes, and will be accompanied by an intensifying realisation of the possibilities of learner-directed curricula and learning-supporting pedagogies.

Empowerment will apply only – and being full agents will apply if and only if – what is studied and how it is to be mediated emerges from the learner. It is the latter, guided by the former, who chooses what to enjoy learning, within convivial frameworks supported by the teacher. Contemporary incentives – places in prestigious colleges, praise, glittering prizes, good jobs, avoiding punishment – give way to deeper and more personal motivations: pursuing

enthusiasms, understanding aspects of the physical and intangible world, enjoying the quest for knowledge and wisdom. Given that teaching will need to embody a constructivist pedagogical orientation, actively including learners in determining meaning and knowledge for themselves, the genuine participation of students, of all categories and most ages, in constantly renewing and redesigning the Global School is imperative (and inevitable).

As already emphasised, the internet heralds a fresh pedagogical era. Digitisation makes possible, nay necessitates, that the educational institution, whether it be set in a leafy suburb of a Western capital or in some remote ramshackle huts in the under-developed world, will embody connectivity. This worldwide linkage will be both electronic and personal – hopefully, students will be active, information and digitally literate, sharing their learning globally. Ideally, all will be vigorous players in the learning and teaching process, taking responsibility for their own knowledge acquisition. Essentially, Global School education will emphasise personalised E-learning and increasing engagement, characterised by ongoing and creative spoken communication.

“For teachers, these are the most exciting times since Socrates. Whether dealing on a one-to-one tutorial basis, guiding a conventional face-to-face class, handling a hundred or so learners in fifty locations in two dozen countries, or developing modules for future utilisation by come whomsoever may, the methodology is one of guiding, supporting, facilitating and scaffolding as opposed to directing, marking and supervising: more Satnav than satrap. In the Global School, just as the learner owns the curriculum, so also is the teacher’s role that of creatively supporting the learning. By all means let teachers be warm-hearted liberators – but first let the learners be liberated from the bonds of their teachers (who, in turn, shall be freed from the hegemony of educational managers, directors and ministers)”.

The Critical Pedagogy (see, for example, Stommel, 2014) made wonderful sense for as long as the traditional notions of teacher as leader and of schooling as enforced regimentation persisted. With the realisation that the learner leads, and with the ending of curricula as propaganda, all else falls into line and much else – including prehistoric critical (digital or otherwise) pedagogies – falls by the wayside. The myth of educational input being justified by economic returns is exploded with the realisation that education’s true objectives are mainly non-material. Far from education being a preparation for the world of work, the only reason for working hard, for getting a well-paid job and for accumulating wealth is to be able to obtain the best possible education (refer again to Diagram 2, above).

Education as preparation has had its day. Inevitably, if education is defined in pecuniary terms and aimed at economic goals it will be regarded as a function of the market and, consequently, the world of work will come to colonise the space of the school. The Digital Age embodies overall transformation. The Global School resolves and outwears the fascinating late-second millennium discussions of pedagogy by determining the ownership and nature of the process, embodying a learning methodology that is neither technology-driven nor indoctrination-targeted nor the sporadic use of some devices and systems by some teachers some of the time.

This fundamental debate-based pedagogy, involving all participants – not just the competitive few along with the vocally challenged minority – embodies the well-informed exchanges of ideas – a mind-expanding experience and a honing of judgemental skills, eclectic, interrogative and principled – as the learner-originating educational process increasingly mirrors the enjoyable oratorical cut-and-thrust (see Douse, 2017). Learning, whether through debates, preparing for debates, reflecting upon debates, evaluating debates, or otherwise, is neither tranquil consensus nor uninterrupted communication. Rather, it is a never-ending search, a fulfilling journey rather than a prescribed destination. In a wondrously complex universe, it could not be otherwise.

Welcoming all learners irrespective of background, gender, previous knowledge, age or other such factors, to the lifelong Global School offers much potential but involves getting beyond the banners and being judged by practical consequences. Creating a worldwide educational institution, with local manifestations, that is characterised by fellowship rather than fear, and that is inclusive rather than categorisive, and cooperative rather than competitive, involves a major cultural transformation. Just as any number of people may enjoy and benefit from watching a play, visiting a mountain resort, cheering on their sports team or reading a novel, so also may a multitude of learners, in various situations and locations, enjoy shared and challenging educational experiences without being graded, beaten, rewarded with trophies or held up to ridicule. Such is the pleasant, participative and purposeful educational institution that Digitisation makes feasible and essential.

These materialisations, in turn, have their own far-reaching implications and, while much of the detail must be determined in practice rather than advance, it is the case that, as the Global School – the universal lifelong educational experience – eventuates, selective schools, private education, trans-country comparisons and national league tables become redundant. In the same happy manner, with just the one worldwide educational institution, as the manifestation of child abuse that is compulsive testing is consigned to the asylum of educational psychoses, odious trans-country comparisons by such as PISA, along with trans-country comparisons and national league tables become redundant.

The Global School, if it is to be anything beyond its technology, must rise to the needs and aspirations of disparate and often desperate peoples in a deficient and frequently dangerous world. The virtually worldwide recognition that everything is transformed has yet to be matched by any fundamental reshaping of educational content, classroom culture or institutional philosophy. This thoroughgoing surge forward represents a pivotal leap in human potential as profound as the wheel in relation to development and as significant as the book in the context of education. Digitisation makes it all possible while achieving a specified degree of digital equity (by a particular date) provides not only a SMART objectively verifiable indicator (OVI) but also the optimal strategy.

ENABLING THE INEXPENSIVE REVOLUTION

Just as video-based learning was the fad of the 1950s, and much as programmed learning machines were optimistically and expensively delivered to some schools in the 1960s, and in the

same way that language laboratories were installed in the 1980s, dedicated ‘computer rooms’ replete with many exorbitant desktops have been established more recently. Providing schools with expensive computer hardware is of very limited value – and may have negative educational consequences: the rejection of high investment solutions is long overdue; expensive, imported responses are now as redundant as the last-century machinery is obsolete. Piecemeal technological ‘add-ons’ have become dysfunctional distractions: isolated ICT is not the answer. Digitisation makes necessary and feasible a fundamental reshaping of the entirety of education. The technology is coming back to the user, to even the least computer-comfortable user, and the notion of digital complexity will fade as the Global School eventuates.

Enabling individual connectivity through inexpensive handheld devices is the advocated way forward: with the creative application of ubiquitous and relatively-inexpensive hand-held devices connected to the "cloud" or with pre-loaded content and systems, a long-overdue move away from high investment solutions may and must eventuate. Mobile computing with a strong set of cloud-based software tools and content may, in the appropriate setting, support higher order knowledge deepening, knowledge creation and problem solving and will provide learners with a positive and virtually (in both senses) unlimited learning potential along with the resources to develop 21st century skills.

Most products, services, models, expertise and research related to ICT use in education have until now come from high-income contexts and environments and, consequently, ‘solutions’ enabled by technology have been imported and ‘made to fit’ in environments that are often much more challenging. Digitisation is, essentially, cost-effective in enabling the equitable access of students as consumers and an equitable provision of content. That realisation will inevitably have profound consequences for educational planners (and development partners seeking to support national educational policies and plans). No longer should any well-meaning donor, still entrapped in the 1990s, offer to provide ‘computer rooms’ or powerful ‘desktops for all’.

Accordingly, educational planning may now focus less upon investment decisions and more in terms of identifying desired outcomes and consequences. Essentially, it ceases to be an exercise mainly in the allocation of scarce resources (by desiccated economists) in favour of plotting imaginative paths towards the achievement of lofty aspirations: turning the ‘visions’ promulgated in plans into popular realities in a digital world (by enthusiastic educationalists). In many low-resource communities, the appropriate technology is the one that people already have, know how to use, and can afford: the mobile phone, presently the most important platform in the world. However, almost 60 percent of the world’s people are still offline (McKinsey & Company, 2014) and cannot participate in the digital culture or economy in any meaningful way. Overcoming that disparity is a sensible starting-point on the road to equity: doing so in order to enable full Global School participation gives added meaning to the investment.

The Global School necessitates a fresh approach to international cooperation and development support. In the light of this forthcoming and fundamental reformulation, many major international interventions, in that they are not grounded in the evolving digital context, are

unworkable, irrelevant and vain. [Specifically, the educational Sustainable Development Goals may be achieved if and only if the transformation is achieved entirely and shortly, and the strategy for the goals' achievement is integrated fully into that restructured reality.] Development partners should consider diverting funding from national-level interventions to supporting the evolving Global School universally in such areas as free BYOD connectivity, online learning resources, reference sources, teacher consciousness-raising, inclusiveness, special needs and for international recognition (as opposed to accreditation) that celebrates distinctiveness yet builds upon our similarities.

Andrew Gibbons wonders what it means “...for the classification of a community as needing philanthropic intervention so as to ensure each child disconnected to a digital device in order to have a chance, rather than what does it take to promote and organise the social and political world in such a way so as to make access to devices inconsequential or at least less consequential for school outcomes (and to keep in mind the problem of stressing any kind of relation between school outcomes and access to digital devices)” (Gibbons, 2016). But, as we see and describe the situation, these are not the alternatives. Firstly, we now regard ‘school outcomes’ in terms of non-competitive learner fulfilment. Secondly, we recognise that the virtual and the actual are mutually supportive elements of contemporary consciousness, embodied in the one (very consequential) Global School. Thirdly, whether the interventions are philanthropic or otherwise, enabling everyone, worldwide, to participate on an equal footing is (a) extremely challenging, and (b) undoubtedly worthy.

Some elements of the Global School are already with us and the entirety will materialise more vividly over the next few years. Mobile communication technology will improve and expand worldwide irrespective of policy architects and planning pundits: to a large extent, the development and distribution of the devices will keep pace of their own (i.e. the market's) accord. But ensuring that the GS arrives soon and with optimum benefits involves a good grasp of the fundamental nature of the necessary transformation and a creative comprehension of the GS's distinctiveness and potential. Essentially, although made possible and inevitable by contemporary technology, the bases of the entirely fresh educational approaches are social and ethical.

As an integral element in planning for a great digital-based bound forward, the inequalities and injustices within and between nations must be a major consideration as the Global School requires basic access to digital technologies and an ability to utilise them. In many low-resource communities, the appropriate technology is the one that people already have, know how to use, and can afford: the mobile phone, presently the most important platform in the world. The learning crisis is a moral crisis and, although usurping education in the name of specific moralities would be, as already explained, the height of immorality, overcoming digital as well as other disparities will better equip people to solve real world problems in their communities and beyond. The Global School recognises this issue and proceeds beyond it. An indicative assessment of what enabling everyone everywhere to become full GS players might involve is tabulated.

Level/Process	Requirement	Comments
Dependable worldwide communication	Reliable Internet and/or Mobile access	Free, reliable and immediate.
Each individual Learner	<p>Bring a laptop/tablet/smart phone</p> <p>Online, 24x 7 across time zones support via digital asynchronous (Learning Management Systems i.e. LMSs and social media) and synchronous support (through products like Big Blue Button – open source – Zoom, Adobe Connect, Blue Jeans etc.)</p> <p>All technologies and systems meeting and retaining stringent international accessibility standards for those with disabilities</p> <p>Digital portfolios, learning analytics and discussing how digital technologies can enhance their blended and online learning</p> <p>Online and digital systems to provide complete support in a blended way with face-to-face</p>	<p>BYOD-based.</p> <p>Support and interaction:</p> <ul style="list-style-type: none"> • online meetings • Web conferencing • Text chat • Shared whiteboard • Application sharing • Breakout rooms • Mobile interface • Recordings <p>Inclusive and accessible systems</p> <p>Learners and teachers manage their ‘digital identity’</p> <p>Follow a holistic support approach</p> <ol style="list-style-type: none"> 1. Pre entry support 2. Welcome and Orientation 3. Academic Advising and Support 4. Personal counselling and support 5. Health and Wellness 6. Learner Leadership

	interactions	and Governance 7. Special Needs Services
Groups of Learners	LMSs such as Moodle, Canvass, BrightSpace, Blackboard group functions such as collaborative blogs and wikis, and social media (such as Facebook, Whatsapp groups, MediaWiki)	Various Free and Open Source Software (FOSS) and commercial systems available
Each individual Teacher	Online, 24x 7 across time zones support via digital asynchronous (LMSs and social media) and synchronous support (through products like Big Blue Button – open source – Zoom, Adobe Connect, Blue Jeans etc.) All technologies and systems meeting the stringent of international accessibility standards for those with disabilities, and retain such standards	Professional development, accreditation and support; develop local and international communities of practice Inclusive and accessible systems
Groups of Teachers	LMSs such as Moodle, Canvass, BrightSpace, Blackboard group functions and social media (such as Facebook, Whatsapp groups)	Various FOSS and commercial systems available
International/national/local linkages	LMSs such as Moodle, Canvass, BrightSpace, Blackboard group functions and social media (such as Facebook, Whatsapp groups)	Various FOSS and commercial systems available
Module development	Programme and module design and development systems	Programme and module design and development

	<p>LMSs such as Moodle, Canvass, BrightSpace, Blackboard and social media (such as Facebook, Whatsapp groups)</p> <p>Access open education resources (OER) available in digital international collections</p> <p>Digital Learning Resources development using software like Adobe Digital Edition</p>	<p>Various FOSS and commercial systems available. Adaptive release and personalised learning</p> <p>Develop and use a clearly articulated OER strategy</p> <p>Follow as "digital first" strategy for learning resources and additional leading (via Libraries and other collections)</p> <p>Develop and manage learning resources</p>
Module “delivery”	<p>Module outline online system</p> <p>LMSs such as Moodle, Canvass, BrightSpace, Blackboard and social media (such as Facebook, Whatsapp groups); artificial intelligence and machine learning; Augmented reality; virtual reality and XR</p>	<p>Plan and communicate delivery</p> <p>Various FOSS and commercial systems available. Adaptive release and personalised learning</p>
Information and public relations	<p>Websites; Contact Management System (CMS); Learning Analytics through data warehouses and data lakes; various open education channels, such as YouTube</p>	<p>Create an international digital presence, and manage and interpret the interactions with learners and each institution</p>
Teacher accreditation and	<p>Online, integrated access to</p>	<p>Integrated systems of national</p>

administration	online systems of accreditors; use of badges leading full certification	accreditors
Learner guidance and records	Contact Management System (CMS); Learning Analytics through data warehouses and data lakes; use artificial intelligence and machine learning	Non-competitive (i.e. no 'exam marks', no 'league tables'); manage and interpret the interactions with learners and each institution
Assessment	<p>Reliable and Online assessment, solely and confidentially fed back to each learners. All assignments will be submitted digitally and where necessary, verified through the Global School's anti-plagiarism software (in the LMS or external like Turnitin); Plagiarism checking: for learners educative use, and for teachers</p> <p>Assessment tracking systems</p> <p>Online Moderation system</p> <p>Learner peer review using systems like Peermark</p> <p>Online marking systems using systems like Grademark on laptops and mobile devices</p>	<p>Ensure academic integrity of the learners' work</p> <p>Electronic Assignment Submission and Tracking; Batch upload/ download</p> <p>Moderation (pre, during, and post assessment)</p> <p>Self and peer assessment</p> <p>Online marking</p>
Evaluation	Feedback systems in LMS and external - effective monitoring and evaluation technologies	<p>Request feedback on the actual delivery and experience of modules to ensure:</p> <p>1) Validity [i.e. evaluation methods will assess</p>

		<p>what is intended to be assessed and be fit for purpose]</p> <p>2) Reliability [i.e. evaluation processes and procedures will be accurate, consistent and trustworthy and their broad outcomes will have the full confidence of all parties]</p> <p>3) Explicit [i.e. evaluation methods, processes and procedures will be accessible, clearly explained to and understood by all stakeholders (including prospective and current learners, funding agents, academic and related staff, professional bodies and employers)].</p>
Security and safeguarding	Adhere to comprehensive international security standards, and retain such standards	Covering mental health issues. Feedback to the student in the first instance for rectification. Thereafter to mentors.

Table 1: Global School Technologies and Systems Requirements

Central coordination and planning can facilitate effective use of digital manufacturing technologies in schools. Obviously, without inspired planning and effective support, this could be chaotic distraction. Alternatively, information and ideas could be exchanged, stimulating software accessed, assignments assessed and constructive suggestions offered and applied, lessons, tutorials and practical sessions shared, staff responsibilities reordered, continuous professional development transformed, and a whole host of other possibilities explored and enjoyed.

Digital textbooks may serve as the bases for traditional face-to-face classes, online courses or degrees, or for MOOCs, offering lower costs, effortless (compared with hard copy textbooks) for learners to carry around, easier for teachers to monitor learner progress, and allowing simpler and cheaper updates as needed. A BYOD approach could become feasible across the developing world through well-planned investment, in the pedagogy and curriculum as well as in some future-proof technology. Assuredly, enabling all learners in educational institutions or individual locations worldwide to achieve full internet and cloud participation (by

say, 2025) will have substantial cost implications, and it is recognised that mobile access can be a considerable expense for those in developing settings!

However, pre-loaded handheld servers to which individuals may connect can overcome this problem, even in remote settings. It is recognised too that a majority of the world's primary and secondary schools are without electricity, and that manually or solar operated computer systems may sometimes be available in the interim. Even more so, it is recognised that, if such fundamental inequitable deficiencies are not addressed and remedied, the world's underlying problems will never be solved. This may well have economic justifications but the moral ones are immediately evident – and educational planners cannot avoid confronting such issues.

CONCLUSION: DIGITISATION-BASED EDUCATION AS EQUITY

Nothing educationally will ever be the same again. With Digitisation, the world is so profoundly and deeply transformed that entirely fresh educational approaches are both necessary and possible. We talk of universal inter-connectedness being embodied in the Global School; similar realisations may be deduced from simply witnessing a 5-year old entirely at home with a device containing a zillion times the computational power (let alone the creative potential) of the mightiest desktop at the turn of the millennium.

Moving wholeheartedly into the 'education based upon Digitisation' situation is the predominant challenge before us all. Just as the organisation of education may be re-structured in order to serve and help shape our utterly-transformed and ever-evolving world, and in the same manner that a convivially creative pedagogy, embodying and responding to our entirely altered environment, will materialise, so also will the nature, content and sharing of the information, concepts and practices that are addressed in Global School activities worldwide be dramatically transformed. To summarise:

- The policy is to achieve educational equity in terms of provision and partnership;
- The strategy is to provide sufficient digital equity to enable equitable GS participation to occur; and
- The goal is a worldwide surge in enjoyment and self-fulfilment, founded upon self-directed learning, enabled by Digitisation

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