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Chapter

Sustainable Teaching in an Uncertain World: Pedagogical Continuities, Un-Precedented Challenges

Rachel Farrell and Ciaran Sugrue

Abstract

Beyond the very pressing immediacy of the pace of change induced by internationalising tendencies, a world without borders, there is increasing pressure on teachers to be more adept, agile, and adaptive, particularly at incorporating new and emerging technologies into their pedagogical repertoires, while international agencies, increasingly influential in this febrile landscape, proffer reform rhetorics that are superficial at best in their appreciation or understanding of local conditions, the realities of teachers' lives and work. While an emphasis on 'what works' too has its limitations, what this chapter seeks to identify is not merely incremental contributions to often limited pedagogical repertoires, but to approach the considerable challenge from a sustainability perspective, sufficient to identify adaptive steps to possible futures that are hopeful, life enhancing, sustaining and sustainable, enriching the quality of teaching and learning, contributing to an emerging pedagogical praxis.

Keywords: pedagogical praxis, adaptive teacher repertoires, sustainable transformation, teacher professional transformation

1. Introduction

In very recent educational literature, Covid 19 is most frequently represented as a 'game changer' [1]; seriously disruptive of schooling as we have come to know and recognise it, while hastening clarion calls for reform of the status quo [2–6]. Notwithstanding the import of the word 'pandemic', throughout the twentieth century, there have been repeated cries of 'crisis' in education, 'A Nation At Risk' [7] comes to mind, pre-dated by the 'Sputnik' (1957) shock (see [8]), perhaps foreshadowing more contemporary pre-occupations with STEM, and more recent systemic tremors in the form of 'PISA shock' [9] as it impacted in Germany, and elsewhere. Perhaps, more than many other research 'Powerful Reforms and Shallow Roots' [10] captures the manner in which repeated efforts at systemic reform have failed to ignite the radical change that was envisaged [11]. Rather, such efforts, frequently flounder on the rocks of school realities, while repeatedly re-learning that attempting 'teacher proof' curricula as a means of bypassing teacher competence and capacities, thus providing a short cut to 'school improvement' seeks to downplay or

ignore the recurring lesson that 'teachers matter' [12], and are most likely to be central to educational processes into the future. There are compelling reasons for this that provide solid ground on which to build the argument presented in this chapter.

First, the pandemic (still with us) has very definitely reinforced the message that 'home schooling' when combined with 'working from home' is not a sustainable 'bargain' between the public and the state; schooling in various forms will need to be sustained into the future. Thus, while flexible working from home arrangements are likely to continue after various vaccines ride to the rescue, respect for teachers, and what schooling in general manages to achieve, has been enhanced in the eyes of parents and public, and maybe even policy-makers. Second, while versions of 'lockdown' necessitated that schools go online, with varying degrees of success, in general, teachers have had to get to grips with technologies to an unprecedented extent, extended by higher education institutions that provide professional support to the profession online, thus 'alien' technologies have become familiar to many; a benefit that provides experience on calibrating the use and effectiveness of various platforms for student engagement, teaching, learning and leading—spawning ongoing reflection and debate. Yet, these actual and potential benefits have made all concerned yearn for face-to-face interactions, formal and informal, as the lifeblood of communication, community, and holistic education. Third, these recent experiences have increased awareness of inequalities due to concern regarding access to: hardware, software, as well as quiet spaces for work and learning, providing further evidence of the necessity for schools as 'safe havens' of challenge, respect and caring. Fourth, such considerations have accentuated the necessity to revisit schooling as a 'public good' [13], something to which Governments need to be committed, providing sustained and adequate resources and in the process, preventing those who see the potential of technologies for profit and the privatisation of teaching and learning, thus exacerbating rather than diminishing inequalities that, in recent years, have been shown repeatedly to have increased [14]. While we readily recognise that, at a time of rapid change, predicting the future has never been more precarious, it is essential to salvage from past and present 'bricolage' [15] as the building blocks of possible futures. Thus, we ask: What pedagogical repertoires provide the most likely prospect of achieving and sustaining educational development goals?

2. Analytical lens

Two eminent economists recently stated that "a healthy society is a vast web of cooperative activity sustained by mutual kindness and obligations" [16]. After decades of neoliberalism, some strains more virulent than others, there has been a considerable rise in '*possessive individualism*' and '*market fundamentalism*' [16] that privilege human competitiveness at the expense of our capacity to collaborate constructively. Such dispositions cultivate a mindset: "the more we view ourselves as self-made and self-sufficient the less likely we are to care for the fate of those less fortunate than ourselves" [17]. From an educational perspective this thinking promotes "learning as acquisitiveness, an individual pursuit, essentially that market mechanisms are the primary instruments for achieving the public good" [17]. The consequences are massive erosion of trust, decline in solidarity and a general retreat from public or common good, and these conditions make their way directly and indirectly into public schooling. Such pressures give rise to two languages and attendant logics—that of accountability and professional responsibility, as indicated in **Table 1** below.

Responsibility	Accountability
• based in professional mandate	• defined by current governance
• situated judgement	• standardised by contract
• trust	• control
• moral rationale	• economic/legal rationale
• internal evaluation	• external auditing
• negotiated standards	• predetermined indicators
• implicit language	• transparent language
• framed by professions	• framed by political goals
• relative autonomy and personally inescapable	• compliance with employers'/ politicians' decisions
• proactive	• reactive

Table 1.
The types of logic and implications of professional responsibility and accountability [18].

This categorisation recognises that accountability language and logic espouses the market assumptions and norms, whereas the language and logic of responsibility include degrees of relative autonomy and professional judgement. As part of our value stance in dealing with the tensions created by these competing and contradictory logics we recognise that it is possible to be accountable while not behaving in a professionally responsible manner; there is a moral dimension to the latter that, for an individual and a member of a profession, is inescapable. Additionally, while asserting that public good should prevail over private gain, from a professional responsibility perspective, it is necessary to recognise that "decision-by-rulebook intentionally eliminates judgement based on tacit knowledge", something that is part of the lifeblood of the teacher-learner encounter [16]. We are obliged to be accountable, this is inescapable, while behaving in a professionally responsible manner is a choice, an inescapable responsibility as professionals. Sustainable futures, even pedagogical futures, depend upon it. Sustainable development necessitates doing things differently to avoid the inadequacies of previous initiatives, while remaining open to the possibilities of what sustainable futures may look like. Moreover, education for sustainable development (ESD) is an approach to education that requires changes in knowledge, skills, values and attitudes to enable a more just and sustainable society for all [19].

3. Methodology

National educational policies are part of a wider international framework which requires states to respond to the challenges of the 21st century. Obligations arise from the United Nations Framework Convention on Climate Change (UNFCCC) that was established in 1994 and the adoption of the Sustainable Development Goals (SDGs) by 193 United Nations (UN) member states in 2015 [20]. Education for sustainable development is also supported by international policy initiatives such as the Organisation for Economic Co-operation and Development's (OECD) *Global Competence Framework* [21] and the United Nations Education, Scientific and Cultural Organisation's (UNESCO) publications on *Global Citizenship Education* [22] and *Education for Sustainable Development* [23]. Such initiatives have

been heavily critiqued from an educational perspective as lacking the transformative intent required to challenge the economic growth models which continue to drive climate change [24]. Nevertheless, in some contexts they have triggered educational reform efforts at national levels [25]. OECD reports on the Program for International Student Assessment (PISA) have also become increasingly influential in education on a global scale [9].

For the purposes of this chapter, we draw on qualitative research that involved a content analysis of the education policies of the OECD and UNESCO since 2014, the year that marked a decade of education for sustainable development [19], while also drawing on international literature and other related empirical work of the authors [13, 26]. This provided a backdrop to the evidence-based recommendations on the future of education by such think tanks as the World Economic Forum [27], the World Bank [28] and the Economists Intelligence Unit, [29]. While the aforementioned are all economic agencies, pre-occupied with preparation for the world of work, rather than providing a 'good' education they are influencing education policy on a global scale by publishing recommendations on pedagogical approaches required for 21st century schooling. Themes discussed below have emerged from a meta-analysis of documents selected from searches undertaken using various combinations of key words such as: trends facing education, education for sustainable development, 21st century skills, digital technology in education and 21st century teacher competencies. The most prominent of these documents are summarised in

Year	Organisation	Title	Reference
2014	UNESCO	Shaping the Future We Want - UN Decade of Education for Sustainable Development	[19]
2015	United Nations	Transforming Our World: The 2030 Agenda for Sustainable Development	[20]
2015	UNESCO	Global Citizenship Education	[22]
2015	OECD	Students, computers and learning: Making the connection	[30]
2015	OECD	Education policy outlook 2015: making reforms happen	[31]
2017	OECD	Education for Sustainable Development	[23]
2018	OECD	Global Competency for an Inclusive World	[21]
2018	OECD	Education 2030: The future of education and skills	[32]
2018	UNESCO	ICT Competency Framework for Teachers V03	[33]
2019	OECD	Trends Shaping Education	[34]
2019	UNESCO	Education for Sustainable Development. A roadmap	[35]
2019	OECD	TALIS 2018 Results (Volume I): Teachers and School Leaders as Lifelong Learners	[36]
2019	World Bank	World Development Report 2019: The Changing Nature of Work	[28]
2019	The Economist Intelligence Unit	Worldwide Educating for the Future Index 2019: From policy to practice	[29]
2020	OECD	PISA 2018 Results (Volume VI): Are Students Ready to Thrive in an Interconnected World?	[37]
2020	World Economic Forum	The Future of Jobs Report	[27]

Table 2.
Chronology of salient policies analysed as part of this study.

Table 2 and are included in the reference list. A systematic examination of these policy documents revealed a number of recurring considerations as pivotal triggers for change in education and the expectations regarding teachers' capacity and competencies within this reform agenda.

Using inductive analysis, three main pedagogical themes emerged from the research, teachers' capacity for: a) adaptive expertise and collaborative practice; b) technology enhanced learning and c) the fostering of 21st century skills, while these are considered through the lens of accountability-professional responsibility and sustainable development. Analysis here gains in significance by providing in-depth scrutiny of policy content, not for the purposes of generalisation, but rather to influence future deliberations on policy and practice as a contribution to shaping possible futures, in an open-ended rather than a prescriptive manner, leaving room for other voices as to how such policy items may be tailored to particular needs, while seeking to build and expand pedagogical repertoires through practical know how, thus sustaining development.

4. Teachers' capacity and competence for adaptive expertise and collaborative practice

There are many 'trends' shaping education including: increasing global population climate change, pressure on living space for humans, increased risks of pandemics, income inequality, globalisation, and increased pervasiveness of technology in our lives all of which demand a systemic and rapid response from education systems all around the world [34]. UNESCO is entrusted to lead and coordinate the *Education 2030 Agenda* [35], which is part of a global movement to eradicate poverty through 17 Sustainable Development Goals by 2030. Education, essential to achieve all of these goals, has its own dedicated Goal 4, which aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all". The OECD's *Education 2030* aims to help education systems determine the knowledge, skills, attitudes and values students need to thrive in and shape their future and "contributes to the UN 2030 Global Goals for Sustainable Development (SDGs), aiming to ensure the sustainability of people, profit, planet and peace, through partnership" [32]. The OECD [34] assert that in a complex and rapidly changing world, the discernible role of education in supporting the SDGs might necessitate the restructuring of formal and informal learning environments, and reimagining education content and delivery. Moreover, as knowledge of human development and learning is expanding exponentially the potential to shape more effective educational practices as suggested by Darling Hammond et al. [38] has also increased (see **Table 3**. below).

Making the most of these advances, however, requires assimilating insights across multiple fields and connecting them to knowledge of successful approaches that are emerging in education [38]. Enabling teachers to acquire 'adaptive expertise' or 'adaptive competence" required to apply meaningfully learned knowledge and skills flexibly and creatively across different contexts in a globalised society [39] is important and will require teachers to work with other stakeholders. This is not a new concept however, and there is a considerable literature that recognises the importance of 'improvisation' as an integral dimension of the teaching-learning encounter [40]. More than a century ago, Dewey [41, 42] not only re-conceived the way that learning should happen, but also the role that the teacher should play in the process of learning [43, 44]. For Dewey, it is not enough for the classroom teacher to be a lifelong learner of the techniques and subject-matter of education; they must aspire to share what they know with others in their learning community [45].

I. Supportive Environment		
Structures of Effective Caring	**Classroom Learning Communities**	**Connections among staff and families**
• Small schools • Small class size • Advisories • Block scheduling • Looping • Teaching teams • Longer grade spans	• Intentional community building • Cultural competence • Identity safety • Consistent Routines	• Relational trust • Staff collaboration • Home visits • Regular parent conferences • Authentic family engagement
II. Productive Instructional Strategies		
Student-centred Instruction	Conceptual Understanding and Motivation	Learning how to learn
• Building on prior experience • Teaching to readiness • Personalisation • Collaborative learning • Cognitive supports	• Conceptual map of the domain • Inquiry & explicit instruction • Motivating tasks with skilful scaffolding • Interest driven learning	• Teaching metacognition and learning strategies • Formative feedback, practice & revision • Mastery-oriented performance assessment
III. Social and Emotional Development		
Integration of Social Emotional Skills	Development of Habits and Mindsets	Educative and Restorative Behavioural Supports
• Teach intra- and inter-personal skills, empathy, conflict resolution, collaboration, responsibility • Integrate and practice skills throughout the day	• Teach executive functions • Develop growth mindset, self-efficacy, sense of belonging • Use mindfulness tools for stress management	• Teach students behavioural skills & responsibility • Culminate community contributions • Repair harm by making amends
IV. System of Supports		
Multi-tiered systems of support (MTSS)	Coordinated access to integrated services	Extended learning opportunities
• Tier 1: Use universal designs for learning & knowledge of child development • Tier 2: Diagnostically identify additional services needed • Tier 3: Provide intensive interventions	• Wraparound health, mental health, and social services • Community partnerships • Family and community engagement	• Before and after school enrich-ment, mentoring and academic support • Summer learning opportunities • Tutoring

Table 3.
Practices aligned with the science of learning and development. Adapted from [38].

Freire [46], like Dewey, believed that each student should play an active role in their own learning, instead of being the passive recipients of knowledge. Consequently, both authors are in agreement that the ideal teacher would be open-minded and confident—confident in their competence while also open-minded to sharing and learning from his or her students [47]. A recent study by Farrell and Marshall [26] in the context of initial teacher education (ITE) found that some student teachers' use of digital pedagogy toppled the typical co-operating teacher/student teacher

hierarchy, placing the student teacher as mentor to the co-operating teacher. This was particularly true of the recent move to remote learning as a result of Covid 19. The pandemic is also a powerful reminder that education plays a significant role in facilitating not just academic learning, but also in supporting physical, social and emotional well-being. The key, in these instances, is a willingness to collaborate for mutual gain, thus building pedagogical capacity, as well as enhancing pedagogical repertoires through adapting technologies.

Balancing traditional forms of education and learning with wider social and personal development means new roles for all involved in education while seeking simultaneously to provide a holistic education, frequently against the grain of external policies more pre-occupied with preparation for the world of work. Such challenges necessitate melding the old with new, a multi-disciplinary approach to education and requiring "Democratic Pedagogical Partnership" whereby "formal but flexible arrangement between teacher educators and stakeholders who engage in 'collaborative professionalism' improve learning for all students in a variety of contexts through effective pedagogy and practice" [48]. One of the four Common European Principles for Teacher Competences and Qualifications [49] is that teaching is a 'profession based on partnership: institutions providing teacher education should organise their work collaboratively in partnership with schools, local work environments, work-based training providers and other stakeholders" In further recognition of the role of partnerships in education, the Council of the European Union [50] observes that:

> *Teacher education programmes should draw on teachers' own experience and seek to foster cross disciplinary and collaborative approaches, so that education institutions and teachers regard it as part of their task to work in cooperation with relevant stakeholders such as colleagues, parents and employers.*

In support of this, the OECD [31] advocates that partnerships are central to the fostering of innovative teaching and learning-communities in which there is a bridge between theory and practice and between practitioners and those engaged in academic research. Making this rhetoric a reality will be a challenge even in the most advanced economies. Culture and context matter along with access to the continuing professional development of teachers [36]. Therefore, if governments are to harness the potential of education to have a positive impact on sustainable development, they need to invest in cultivating the most accomplished aspects of pedagogy that exists and can be enhanced by the transformative digital technology increasingly at our disposal. It will be difficult to achieve, and, in the first instance, it will be necessary for the research and policy communities, even in the most advanced economies, to address why pedagogical reform failure, reform fatigue or overload, are getting in the way of more sustainable transformations, more rooted in teacher-learner engagement, and the efforts necessary to overcome such challenges.

5. Teachers' capacity and competence for technology enhanced learning

As indicated above, the Covid 19 pandemic has lent renewed urgency to being adaptive, while also extending pedagogical repertoires to embrace the potential offered by various technologies. More generally, the rapid pace of change and challenges facing the 21st century provides opportunities "and a window for action, as evidenced by the power of digitalisation to transform, connect and empower" [34]. Digital technology is playing a pivotal role in the development of modern economies and societies. This has profound implications for education, both because

digital technology can enable new forms of learning and because it has become important for young people to master digital technology in preparation for adult life [37]. While schools are key sites for the building of adaptive competences [51], including the competences to embed digital technology in teaching, learning and assessment [33], a recent OECD report [30] notes that "the reality in our schools lags considerably behind the promise of technology." While there is an expectation that teachers are proficient in the use of digital technology, in teaching, learning and assessment, the reality is that this is not always the case [52]. Provision of continuing professional development for teacher educators [53] is fundamental to developing digital competence, as is collaboration with leading experts including those from industry [54].

In order to develop a coherent professional learning plan for teachers, it is import to establish an agreed framework for digital competences that teachers need in order to harness the potential of digital technology in teaching, learning and assessment. However, given the pace of development of evolving technologies, this too is a tall order. McGarr and McDonagh [55] synthesised digital learning frameworks from around the world into a four-part model encompassing Technical skills, Pedagogical skills, Cyber-ethics and Attitudes (PEAT) (see **Figure 1** below).

Their model encapsulates the necessary technical, pedagogical and ethical competencies that are required for teacher education in the 21st century. According to Brox [57] there is currently a narrow utilitarian adoption of technology by teachers and she argues that "teacher education should encourage a deeper understanding of technology, in which both human and technological agency are explored and problematized". Tsvetkova and Kiryukhin [58] assert that there is.

> *...a triad of digital competencies that create a stable structure for their development including: Vital (custom) digital competencies that enable teachers to keep up with the world of digital devices and services; profile and professional competencies that will determine the adaptability and success in the conditions of digitalization of professions and social digital competence of citizens that will help to preserve our delicate world on the principles of humanism and creative development of our children, to avoid atomisation of digital society.*

Digital enhanced learning is an ambitious agenda and in the absence of time, resources and continuing professional development teachers are in danger of becoming scapegoats for lack of progress in this regard. Additionally, by focusing on a more technicist approach to skills, there is an underlying assumption that these

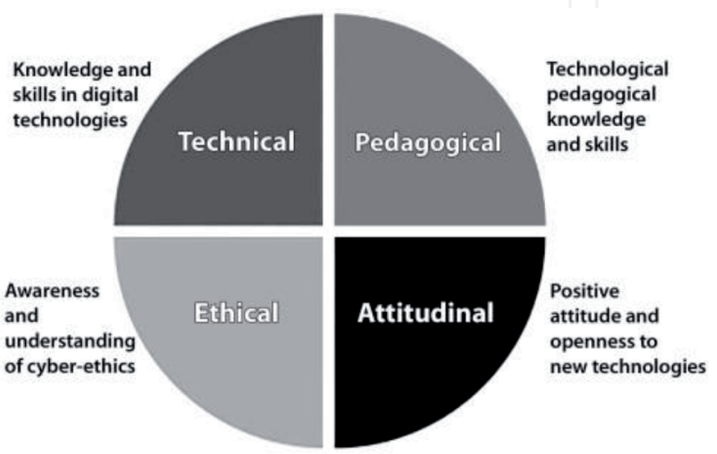


Figure 1.
Synthesised model of teachers' digital competence – The PEAT model [56].

are easily grafted on to teachers' existing pedagogical repertoires, when there are more fundamental epistemic and identity considerations in play that take time to ferment as part of transforming not only the knowledge base of teaching that is crucial also forging 21st century teacher identities.

Another aspect of this challenge is equality of access to adequate infrastructure to support digital enhanced pedagogy. There is a case to be made for broadband to be made a public good if all education stakeholders are to have parity of access to digital enhanced learning opportunities. A further concern is the influence of the corporate sector that is currently filling the gap in continuing professional development by providing free online courses to teachers who wish to increase their level of competence in the area. However, creative and constructive engagement with the best forms of adaptive pedagogy, in whatever shape or form, has the potential to provide a sense of optimism for building a better future. Enthusiasm for promoting technologies for the benefit of already wealthy technology entrepreneurs is no substitute for sustained engagement that recognises the complexities of teaching and learning.

6. 21st century skills and global competences – the challenge of continuity and change

The Worldwide Educating for the Future Index [29] offers evidence of a consensus that education systems urgently need to prepare students for the challenges that await them in work and society. For several decades, there has been an expressed urgency on the part of policy-makers to shape the future, but with modest success, as evidenced by what McLaughlin refers to as 'misery research' [59, 60]. Throughout the period of these calls to transform the experience of schooling, what has emerged, and research has consolidated, is a broad agreement on the vital role that critical thinking, creativity, communication, entrepreneurship and other future-oriented skills, including digital capabilities, have potential to play in helping students meet those challenges [27, 28]. This so-called list of 21st century skills [61] emerged from a splurge of initiatives and frameworks driven by corporate and government partnerships over the past decade [62] such as Partnership 21 (P21) and Assessment and Teaching of 21st Century Skills (ATC21S). More recently the OECD [21] introduced the notion of *Global Competencies for an Inclusive World* where "Globally competent individuals can examine local, global and intercultural issues, understand and appreciate different perspectives and world views, interact successfully and respectfully with others, and take responsible action toward sustainability and collective well-being". While such policy rhetorics may be aspirationally laudable, there is a sense also that saving the planet, a major challenge in itself, is being grated onto existing reform initiatives and challenges to systems of schooling. It is not that schools do not have a potentially significant part to play in reversing the worst features of climate change, but that cultivating the voices of students and harnessing their agency for transformation can only be effective in tandem with political leadership, will and adequate allocation of resources. Too often in the past, too much is left to systems of schooling, and too great a burden placed on teachers alone to bring about desired reforms. Thus in the absence of adequate professional support, holding the profession accountable for such a significant agenda, becomes an unjust burden rather than a professional challenge, worthy of a responsible response.

The rhetoric of 21st century skills orients toward the world of work at a time when we also need an emphasis on the promotion of education to foster broader objectives such preparing young people for "a rapidly changing, uncertain, risky

and possibly dangerous future" [63]. Moreover, a predominantly economic focus on education has inherent contradictions [64] regarding teachers' vital role in promoting the necessary "transformative shifts in how we think and act" [65] that are required for the changes in human behaviour essential for sustainable living. The capacity for transformative models of education to take root is dependent on a range of factors including preparedness of schools and teachers to embrace such approaches [66].

Education systems around the world are responding to the changing economic, environment, social and political global landscape by reviewing their curricula to include key skills and competencies. Thijs and van den Akker's [67] description of curricular strata, where the supra level begins with transnational discourses about education, leading to the macro level of national level policy intentions and on to the meso level of policy guidance and facilitation to the micro level of school-level curricular practices and finally to the nano level of classroom interactions, demonstrates the complexities of implementing changes in the education sphere. While such a tiered approach to policy framing may well be necessary and appropriate, such a trickle down approach to trans-formation needs to give considerably more recognition to 'continuous adaptation' [68], thus also, considerably more dependent on micro capacities to extend the knowledge base of teaching, from a content and pedagogical perspective.

Lehtonen et al. [69] concur that the educational space is both complex and contested, presenting educators with the challenge of addressing difficult knowledge in a politicised and, at times, divisive context. The ability of teachers to critically form their responses to challenging and intricate situations, activating prior experience to move between repertoires for action in the light of reflection on alternative futures will be very varied across different contexts [70]. At the core of this dilemma is the concept of professional agency, whereby practitioners have the capacity to act in particular circumstances making sense of policies and of the multiple nuanced factors that influence the process by which these policies are realised. Agency and professional responsibility are not fixed capacities but rather an achievement resulting from the interplay of individual efforts and capabilities within contextual and structural factors in concrete situations [71], while responsibility implicitly contains a moral dimension. Thus, cultivating professional agency and responsibility in the teaching profession is central to understanding how educational policies are translated into contextually relevant teaching practices [72]. Important and all as teacher agency and professional responsibility may be, the days of 'heroic' performance are long since passed, thus there needs to be a significantly stronger sense of collective agency, collaborative professionalism, that takes professional responsibility seriously, while this too entails calling out systemic failures and inadequacies in terms of necessary and sustained support for teacher learning, and ongoing tailored 21st century 'formation' [73].

Another important factor in building sustainable teacher capacity is teacher professional identity and how it is inextricably linked to their chosen disciplines. The attempts by policy makers around the globe to progress the skills and competency agenda has been thwarted in some respects due to the lack of connection to subject discipline and pedagogical content knowledge (PCK) [74]. Skills cannot be learned in a content free zone. If teachers are to build their pedagogical repertoire for 21st century education they need to be supported and encouraged to broaden their horizons sufficiently to merge skill development and PCK in their practice [75]. However, if the rate of educational change persists without adequate resourcing and support, there is a serious danger of teacher burnout and attrition from the profession. We must learn from the sins of the past where rapid and radical reform did not achieve their intended outcomes [59]. There needs to be a systemic recognition

by policy makers that we do not have to invent the future out of nothing, as well as increasing power asymmetries due to the expansion in influence of international agencies with their own agendas. Furthermore, teachers who are at the coal face of reform need to challenge the rhetoric surrounding the novelty of 21st century skills and competences. Seminal thinkers like Dewey and Freire have espoused the educational virtues of democratic and citizenship education, critical thinking and collaboration for decades. There is no denying that teacher capacity and competency to foster these skills are important agenda items. If we are to succeed in building this capacity and embedding these skills across the continuum of education, we need to approach it differently than heretofore in an incremental and non-threatening way that is achievable and sustainable. Slowing the process of change sufficiently to enable capacity to be enhanced incrementally is necessary; capacity building can only occur from where teachers' expertise is rather than where it ought to be. There needs to be recognition also that the intellectual capacities of teachers vary considerably also from one jurisdiction to another, while this is already reflected in PISA results—particularly in Finland and Signapore [76]. While public partnerships have considerable potential to enhance teacher capacities, vigilance too is necessary in order to maintain schooling as a public good, a state responsibility that eschews profit in favour of society. Maintaining education as a public good to avoid the for profit sector dominating the agenda is essential. Moreover, making structural changes to the school year is also essential for educational reform to be more than a mere aspiration. Elongating the school year to facilitate sustained teacher learning at the site of the practice [77] and during the working day is a possible solution that, though a challenge to the profession will be necessary to consider.

Assessment is probably one of the most important aspects of the education process and has often been described as "the tail that wags the curriculum dog" [78]. Any attempts to embed key skills and competencies across the continuum of education must include a more holistic approach to assessment. This is easier said than done. Approaches to the assessment of skills and competencies will require more teacher and school-based assessment and less dependence on high stakes terminal exams. However, the controversy surrounding the examination process in many developed countries during COVID-19 crisis demonstrates the complex nature of assessment and the tension between transparency and fairness on the one hand and teacher autonomy and professional judgement on the other.

7. Conclusion

It is abundantly evident from the brief analysis and foray into aspects of building teacher capacity that the agenda is ambitious. As indicated in the introduction, even in the most developed economies, past experience indicates that this is an enormous challenge. When viewed from the perspective of cultures and contexts that continue to struggle with 'basic' education, the challenges appear as Sisyphean, and serves to disenfranchise, and demoralise rather than enhance teachers sense of agency and responsibility, and the quality of teaching and learning. Such a considerable educational change agenda is open to the accusation of policy elites talking among themselves. Unless and until the voices of teachers, learners, their parents and communities become part of that reform conversation in a meaningful and sustained manner, hope will drain away. There is no Valhalla, no 'promised land' to which teachers and their learners may easily migrate. Rather, they have to build and pave the way to that future. Without the support and resources necessary to match the ambition, professional agency, and professional responsibility are likely to decline rather than enjoy enhancement, and pedagogical repertoires more likely to

become retrenched as Governments exert pressures to improve performance, resulting in impoverishment of teaching and learning, expanding disparities in learning outcomes, sustainability agendas shredded, to the detriment of the attractiveness of the teaching profession in many context where it is critically necessary. Policy-makers too have a responsibility to do more than merely enunciate lofty ambitions. These need to be matched by transformation strategies that are tailored to evident needs with resources that are equal to the challenge if even partial sustainability is to be achieved, the teaching profession enhanced, and the quality of teaching and learning improved. For too long, educational 'change agents' have been content to settle for less. While the influence of international agencies, their policy rhetorics, have grown more numerous, and demanding, no matter how laudable their advocacy, this does little for the capacities of teachers *per se*. Unless more effective means of bridging the worlds of policy makers and practitioners are crafted, sustainable reforms will continue to remain aspirations, more likely to frustrate teacher morale and self-efficacy rather than enhance their sense of responsibility and capacities to transform the teaching learning process.

Conflict of interest

The authors declare no conflict of interest.

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