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Contexts of Learning: The Role of Contexts and Agency in Education

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Contexts of Learning: The Role of Contexts and Agency in Education

Deborah Chua, Mark Baildon

1. Introduction

Contexts of learning is a developing research area of interest for the Singapore Ministry of Education (MOE) and was first mentioned as a research area in the Corporate Education Research Agenda (CERA) of MOE. As MOE pointed out in CERA, learning and teaching occur within complex, evolving contexts of schooling and within the context of what society values as important for individual learners and for society as a whole, at present and for the future. We note that from the conception and subsequent development of this paper, CERA has since evolved into the General Education Research Agenda (GERA)[1] and the MOE-wide Education Research Agenda (MERA)[2]. Nonetheless, GERA and MERA are developments from CERA, so common threads remain in the three research agendas. In CERA, GERA and MERA, there is recognition that learning and teaching are shaped by learner and teacher factors, such as their backgrounds, experiences, circumstances and aspirations. MERA aptly recognises, for instance, learning as an interplay of human intrapersonal factors and the environment. In other words, learning and teaching are constantly occurring within multiple, interacting contexts that do not exist independently of human actors.

[1] CERA 2018–2022 and GERA 2023-2027 articulate research priorities that can help inform policy and practice impacting Primary to Pre-U education.

[2] MERA articulates MOE's high level research priorities to direct research efforts and funding in support of MOE's strategic priorities for each of the four learner groups under MOE's purview.

The three goals of this Working Paper (WP) are thus to:

a. lend clarity to the dynamic inter-relationship between contexts and human agency;
b. build awareness of the usefulness of regularly thinking about contexts and the agency held by teachers, learners and other education stakeholders in sustaining and changing those contexts; and
c. facilitate broad navigational insights for policy, practice and curriculum based on the above.

In addressing its goals, this paper surfaces a set of general principles on the way contexts shape teaching and learning and the way agency is exercisable to (re)shape[3] contexts imaginatively, purposively and creatively. This WP draws both on theoretical work to ground our understanding of contexts and agency, as well as on studies from Singapore (where possible), Asia and other parts of the world to illustrate these theoretical perspectives. Studies referred to are primarily non-quantitative because conceptual and qualitative studies allow for more nuanced understandings of participants (or agents) within contexts.

All human activity takes place within contexts, under particular circumstances and conditions. Contexts, including those of teaching and learning, comprise physical and material conditions, ideologies, as well as values and beliefs (Hult, 2019; Larsen-Freeman, 2019). For example, physical resources, such as curriculum materials and the technology used in classrooms represent the ideologies and values of their creators (Hannerz, 1991; Garrett, 2013). These contexts shape social practices, behaviours and social relationships, values and beliefs, what counts as knowledge and how humans understand the world (Giddens, 1984; Wertsch, 1994). Contexts are often seen as normal and natural, without much thought or awareness of their effects on what people do, how they think of themselves or how they view others and the world around them (Foucault, 1983).

[3] In reference to its use with contexts, '(re)shape' is a term that will be used interchangeably with 'co-construction' and 'influence/influencing' in this paper.

However, people can and do exercise agency within contexts. Agency refers to the recourse human actors have to shift, alter, manoeuvre across and negotiate the contexts in which they find themselves (A. Ong, 1999; Priestley et al., 2012). Based on individual and social structural factors, including identities and life histories (Ahearn, 2001; Leskinen, 2022), agency constitutes

> the realized capacity of people to act upon their world…. That capacity is the power of people to act purposively and reflectively, in more or less complex relationships with one another, to reiterate and remake the world in which they live, in circumstances where they may consider different courses of action possible and desirable, though not necessarily from the same point of view (Inden, 1990, p. 23).

In other words, people think and act according to the values, beliefs and social practices conditioned by contexts, yet they also have capacities for greater awareness of contexts and how to modify them. Discourse is fundamental to these capacities, where discourse refers to the way ideas and practices are presented and talked about with and through language and other societal symbols (Foucault, 1980; Abowitz & Harnish, 2006; Fairclough, 2010).

While contexts structure experiences and practices in particular ways, humans co-construct these contexts (Markus & Kitayama, 2003) through discourses, making contexts more socially constructed, malleable and dynamic than often taught/thought. This does not deny that some have greater power and influence to shape contexts for particular purposes, because of their relative societal position and their ability to influence policies and laws, social norms and practices, or forms of knowledge that affect others' opportunities for expression, participation or agency in the society.

The malleability of contexts is exemplifiable by the education reform shifts in Singapore since her independence in 1965. These shifts include the survival-driven reforms of the late 1950s to 70s, the efficiency-driven reforms of the 70s to 90s, the ability- and aspirations-driven reforms of the 90s to the early decade of the millennium, and the student-centric, values-driven reforms from around 2011–2012 to the present day (Goh & Gopinathan, 2008; Gopinathan, 2015; Ho & Koh 2018; Kwek et al., 2020). The number of these reforms within the

short span of Singapore's history, together with their extensiveness, point to the continuous evolution of contexts of learning. These reforms have largely been responses to perceived changes in global, social, economic, national and socio-political contexts that policymakers and stakeholders believed required new policy formulations, educational practices, and forms of knowledge and skills (Koh, 2004).

Part of being agentic in education then, is to develop or increase an awareness of contextual factors and their influences on teaching and learning (Lee, 1991; Gopinathan & Mardiana, 2013). Fullan (2021) refers to this as "systemness", which is a mind and action stance (as opposed to "systemic", which he argues is an analytical term). Systemness is the "sense that people have at all levels of the system that they are indeed the *system*" with "a responsibility to interact with, learn from, contribute to and be a living member of the system as it evolves" (Fullan, 2021, p. 33, italics in original).

This awareness occurs alongside the flexibility and reflexivity for an agentic co-construction of contexts (Dirkx et al., 2006; Costes Onishi et al., 2020). Reflexivity is a willingness and ability to stand apart from and to (re-)examine systems and factors (personal, sociocultural and structural) that influence our interpretations and sense-making (Baildon & Damico, 2015). Reflexivity is what enables a meta-view of the relationship between contexts and agency as well as possibilities for individual and collective change.[4] For example, a deficit view of learners, parents or teachers often locates educational 'problems' in individuals when an understanding of broader contexts, particular viewpoints and root causes of the 'problems' may be what helps policy and practice to improve education systems (Teo, 2018; Hinnant-Crawford, 2020). Reflexivity and its ensuing awareness and responsiveness in being able to influence contexts is an important principle for agency in teaching and learning, and for policymaking.

[4] Reflexivity goes beyond reflection to include an awareness and recognition of how our perspectives, sense-making, social practices, construal of self and others, and emotions, desires and investments, may turn out to be harmful to others, constrain particular forms of agency or reproduce harmful contexts (Stein, 2001).

In its consideration of contexts, agency and the discourses that mediate these, possible implications for education policy and practice arising from this paper are as follows:

a. Through education practice and policy discourses, provide opportunities for articulating and encouraging open discussion of the types of contextual characteristics and human agentic factors that education initiatives run up against, and reasons why the observed tensions might exist.
b. Promote greater teacher and learner agency to (re-)imagine forms of teaching and learning by incorporating more interpretive flexibility in curriculum and policy discourses.
c. Promote through education policy and practice (including education professional development) discourses the important qualities of reflexivity, anticipation and responsiveness at various levels of the schooling system.

The rest of this paper examines several contexts that influence education policy and practice, how these contexts manifest, and their relationship to human actors, education content/curriculum and the way people operate in teaching, learning and schooling.

2. Contexts

2.1 What are contexts?

Everything that humans do occurs within particular contexts (and the confluence of different contextual factors interact to shape environments and what people do in them).

Material contexts refer to physical and material social settings, conditions and circumstances, as well as persons that frame both formal and informal teaching and learning activities. Material contexts include physical spaces, objects, lesson structures, physical activity, learning environment, and teacher, parent and learner participants.

Abstract contexts refer to the sociocultural elements and societal factors that influence the ways people think and act (Giddens, 1984; Wertsch, 1994). Abstract contexts include

historical, ideological, economic, political, social and cultural factors, social structures and rules, as well as individual and collective human values and beliefs. Abstract contexts manifest in the physical-material world through human action and the values, beliefs and ideologies (including particular biases) embodied in the material artefacts, tools and technologies created by human actors. Abstract contexts operating in Singapore society and schools have been characterised, amongst other things, as hierarchical, pragmatic, instrumentalist, meritocratic, performative, neoliberal and Confucian (C. Tan, 2008; K. P. Tan, 2008; Hairon & Dimmock, 2012; Deng & Gopinathan, 2016; Sim & Chow, 2019; Alviar-Martin & Baildon, 2021).

2.2 The multiple, interacting contexts of education

Interactions of the material and abstract contexts of teaching and learning are modelled in the literature. For the purposes of this paper, two of interest are Bronfenbrenner's bioecological theory of human development (Bronfenbrenner, 1974; Bronfenbrenner & Morris, 1998) and the International Association for the Evaluation of Educational Achievement (IEA) Civic Education Model. The former is henceforth known as Bronfenbrenner's model (see Figure 1), and the latter, as the IEA model (see Figure 2). Both models conceptualise learning as a biological, social and cultural process, in line with the view of learning in MERA. Bronfenbrenner's model locates these processes in learner needs at various stages of development (e.g., sex, age, health), and the IEA model locates these processes in sociocultural expectations of learner outcomes as defined by various sociocultural institutions and their values.

Bronfenbrenner's model is widely used in Singapore education research. It is fundamental to highlighting the different levels of contexts that make up and influence school systems. For example, Hung et al. (2019) suggest that ecologies for innovation and change can create new education contexts and promote education change in schools. Case studies in their book show the possibility of promoting these ecologies by leveraging affordances and resources across the education system to create new contexts, synergies, and capacities (p. vii). On the other hand, the IEA model is notable because it highlights

the role of public discourse about the goals and values of education in various contexts as communicated through institutions, narratives and processes. The central role of discourses in shaping contexts of learning, as conveyed in the IEA model, cannot be understated because educational policies and curriculum are all forms of discourses.

Abstract contexts (e.g., values and beliefs about education) are communicated by human actors and manifested in the material contexts of everyday social relations, practices and environments that learners encounter. This is an idea common to both the IEA model and Bronfenbrenner's model. In locating the layers of nested contexts that surround the learner, the bidirectionality of these contexts (Bronfenbrenner's model), and the navigation of these contexts through discourses (the IEA model), both models effectively show contexts to be socially constructed. Together, the models facilitate awareness of the contextual interactions that influence education through a variety of factors. These factors include policymaking, teaching and learning, and also relationships between schooling and society, knowledge and skills acquisition, sociocultural differences in educational achievement, and parental involvement in education (Institute of Medicine and National Research Council, 1997).

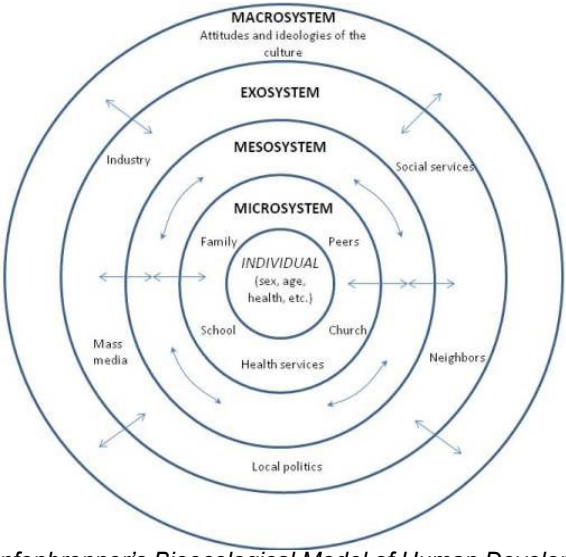

Figure 1. *Bronfenbrenner's Bioecological Model of Human Development. (Source:https://commons.wikimedia.org/wiki/File:Bronfenbrenner%27s_Ecological_Theory_of_Development_(English).jpg.)*

In Bronfenbrenner's model in Figure 1, the multiple contextual levels or systems of relationship that influence the learner are the microsystem, the macrosystem, the exosystem and the mesosystem (Rosa & Tudge, 2013; Guy-Evans, 2020). Abstract and material contexts interact to shape human development within each of these. For example, learner cognition and learning "depends upon the kinds of experience that come from having a body with various sensorimotor capacities, and… these individual sensorimotor capacities are themselves embedded in a more encompassing biological, psychological and cultural context" (Varela et al., 1991, p. 173).

Within Bronfenbrenner's microsystem, beliefs and values are communicated by people (family, peers, teachers) and the way the environment (classroom, playground, neighbourhood, school) is structured. Social institutions are captured in the exosystem, for example, when public institutions, labour markets and businesses continually try to respond to shifting global, national and local contexts, anticipating changes that new (or anticipated) events, issues or technologies might require. Common drivers of change

to education policies and practices from the exosystem can also come from changing demographics (increased learner diversity), some crisis within a community (pandemic, higher levels of stress among youth or climate disruption), general dissatisfaction among stakeholders about educational aims and processes, new education research or partnerships and technological advances or disruptions that impact organisations, work and social relations or demand new forms of knowledge and skills (Dudar et al., 2017). Bronfenbrenner's macrosystem captures cultural values, beliefs, attitudes and ideologies communicated through national policies, global trends, historical narratives and global artefacts (McDonald's food, iPhones, Adidas shoes, etc.) and media platforms (Facebook, Twitter, etc.). International testing schemes, like the Program for International Student Assessment (PISA), are part of Bronfenbrenner's macrosytem, resulting in and responding to education systems emphasising national education standards, 21st century skills, testing programmes and policy borrowing from particular reference societies like Singapore (Deng & Gopinathan, 2016; Baildon & Alviar-Martin, 2018; de Roock & Baildon, 2019).

An interaction of the different systems in Bronfenbrenner's model shows that global trends that shape assumptions and perspectives about education may arise in one context and compete with other contexts. Thus, educational transfer, or policy borrowing, where institutional arrangements, 'best practices' and ideas move across international borders can assume an acontextual perspective that can be problematic and create implementation challenges (Heng & Song, 2020). Even within the same education system, sensitivity to different contexts is imperative for educational transfer across schools. For example, the diffusion of innovative 21st century learning practices within the same education system can be challenging, given multiple and dynamic contexts. It is precisely these challenges that prompt Hung et al. (2017) to suggest a "nested ecology" that "highlights the importance of coordinated efforts by multiple actors within and outside the education system". These include parental support, dialogic interactions and resource allocations that recognise the different contexts and circumstances of schools (Hung et al., 2017, p. 598). Thinking about possibilities for action thus, in reference to multiple contexts, help actors consider the range of available agential options for individuals or groups.

The interaction of multiple contexts and the implications of this for agency is likewise evident in the IEA model (Torney-Purta et al., 2001). Multiple and nested contexts also surround the individual learner in the IEA model in Figure 2, where these contexts include institutional entities, values and beliefs, as well as family and peers. Central to the IEA model are the discourses that traverse multiple contexts, enabling actors to (re)produce and change those contexts. Discourses (daily conversations, professional talk, classroom interactions and artefacts and curriculum and policies, etc.) are the language and societal symbols that structure the practices and knowledge that people use to convey their beliefs and values, as well as to understand and act in the world (Foucault, 1980; Abowitz & Harnish, 2006; Fairclough, 2010). In short, discourses help people to "coordinate their work, make meaning, and negotiate roles and identities" (Lefstein et al., 2020, p. 2). According to the IEA model, it is through their participation in the discourses of everyday nested contexts that young people develop the identities (societal roles, group affiliations, sense of purpose, etc.) that enable them to think about and act upon their social, cultural and political environments (Torney-Purta et al., 2001).

The ways in which public discourses shape the immediate contexts of learning and identity notions are highlighted in the IEA model through an inner and outer circle of contexts. The inner circle demonstrates how learners, parents and family, teachers, curricula, schools, peer groups and the informal and formal communities of learners serve as carriers of the goals and values of education shaped by public discourses. The outer ring is the circle of public discourses that include political/legal, economic, cultural and media institutions and processes, socio-economic stratification and opportunities, as well as national narratives and geopolitical factors that communicate particular goals, purposes and values for education.

The IEA model and Bronfenbrenner's model both show that education systems are complex because of multiple, interacting and dynamic contexts, as well as the variety of ways these influence human actors and social relations. Indeed, PISA (2017) acknowledges that multiple contextual considerations, e.g., inequality, education, economic policies and global trends shape learners' psychological, cognitive and social functioning, as well as life satisfaction (PISA, 2017). Included

in these considerations are more proximal factors such as community and household resources, school environment, and teacher and peer relationships. A recognition therefore of the way multiple contexts interact to influence all aspects of educational thought and practice can help stakeholders to re-examine or evaluate the purposes, organisation and outcomes of education. According to Fullan (2021), for example, stakeholders across the system might find it useful to re-examine whether existing accountability contexts are really helpful in promoting and sustaining intrinsic motivation for work and learning; and whether such contexts as capacity-building (in place of accountability), group solutions (instead of the emphasis on individual achievement) and good instruction (in place of advocating the 'wonders of technology') might serve as better drivers of school outcomes. These, alongside Bronfenbrenner's model and the IEA model, point to a close-knit relationship between the capacities to consider contexts and their interactions, to stand apart from these to evaluate how useful (or not) they are (what we will later introduce as 'reflexivity') and to respond in anticipation to this evaluation (which is agency). This offers an ecological perspective to education systems. As open systems, education systems are shaped by multiple and often competing factors and influences, making an ecological perspective one way that different contexts can be more fully considered in educational decision-making (Burdett and O'Donnell, 2016).

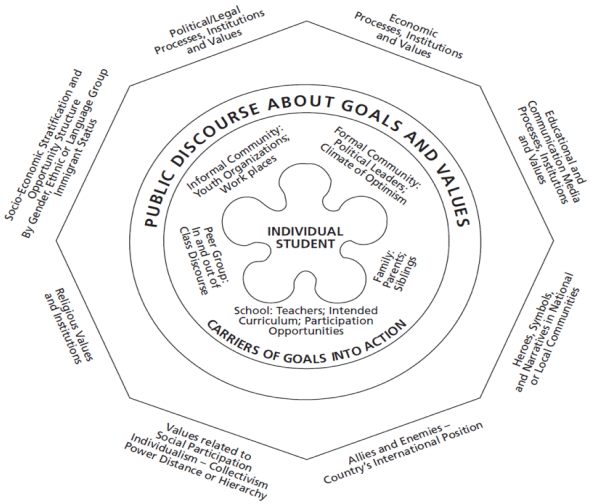

Figure 2. *International Association for the Evaluation of Educational Achievement (IEA) Civic Education Model. (Source: Torney-Purta et al. (2001, p. 21))*

3. Societal contexts that shape education and human agency

The close interconnection between human factors and the societal contexts of education is at the core of all the foundational research areas of education. Indeed, an understanding of contexts cannot preclude an understanding of human agency. As Wertsch (1994, p. 203) notes,

> …one cannot provide an account of human action without taking its cultural, institutional, and historical setting into account. On the other hand, such settings are produced and reproduced through human action.

Contexts and agency are thus mutually interdependent (Foucault, 1983; Giddens, 1984; Wertsch, 1994; Emirbayer & Mische, 1998; Cohen, 2000; Markus & Kitayama, 2003; Bourdieu, 2005; Ball, 2006, 2013; Fairclough, 2006; Banks et al., 2007; Kress, 2009; Pöllmann, 2016). Agency, moreover, includes not only capacities to "make a difference" (Giddens, 1984, p. 14) and to choose to change existing contexts (Pickard, 2011; Ingerslev, 2020), but also capacities to resist change and conform to the status quo (Tao & Gao, 2021). For example, people

may respond in unanticipated ways to new initiatives by relying upon and enacting long-held beliefs, values or practices developed in other contexts. Social practices developed in education under different (earlier) historical or economic conditions may be difficult to change, or people may be so comfortable in those conditions or unconvinced of the need for change that they become resistant to the changes desired by policymakers or educational leaders (Dudar et al., 2017). The need to understand agency in these respects is shown no less in classical accounts of working-class learners who reject dominant education systems whilst reproducing the status quo (Willis, 1977), and in contemporary accounts of people conforming to organisational policies and practices despite their true values and beliefs (Hewlin, 2003).

Alternative frames of reference enable educators to think and act in ways that can support educational innovation. For example, the call for "entrepreneurial dare" aspired towards greater creativity and innovation in Singapore's recent round of education reforms (C. M. Ng, 2016), alongside a precedent Innovation and Enterprise initiative (P. T. Ng, 2004). Even if this entrepreneurism might be seen at times as reinforcing instrumental or neoliberal discourses of education (de Roock & Baildon, 2019), they do evidence an attempt at encouraging greater agency. The role of agency as such in educational change—what enables agency and active participation in change and the extent to which contextual factors support particular types of agentic change—is an area deserving greater attention. This attention can be garnered in the first instance by understanding the influence of contexts on human actors and vice versa.

3.1 Influence of contexts on human actors: Conceptualisation

The influence of contexts on human actors is exemplifiable in the way contextual factors, such as accountability, cast the responsibility for education practices into the hands of different human actors and shape the beliefs or values people hold about education. The accountability movement of the 1970s translated business notions of accountability into the educational arena (Ornstein, 1988) and produced new sets of values, beliefs and practices in educational settings that significantly shaped education policy and practice. Accountability mechanisms have played a key role in the global education movement

to shape national education standards, the escalation of testing and measurement systems and the "quality control" of teaching to regulate education, while making education in many ways a "sub-sector of the economy" (McLaren, 2007, p. 27). While a global phenomenon that has influenced policymakers around the world, accountability schemes are, nevertheless, also shaped by national and local contexts. While a culture of self-responsibility for teacher professionalisation, known as trust-based accountability (Finland), encourages teachers to self-regulate their own professionalisation, professionalisation that is more regulated and system- and performance-based in nature (Singapore) tends to view school leadership and management as agentic in the assurance of quality teaching (Teng et al., 2020). Similarly, in their case study of Professional Learning Communities (PLCs) in Singapore and Shanghai (both high performing education systems according to international rankings), it was found that the heavier workload of Singapore teachers made PLCs an "'add on' burden", which was not the case in Shanghai due to relatively lighter workloads (Hairon & Tan, 2017, p. 97). Meritocratic contexts that shaped either individualist or collectivist orientations toward teacher work were found to impact the nature of PLCs in these places (Hairon & Tan, 2017). The fact that varied contexts of accountability can shape different types of agency in teacher PD illustrates the influence of contexts, especially sociocultural contexts, on human actors.

Within Singapore, the influence of contexts on human actors remains when high-stakes performativity measures in education, international comparisons (like PISA scores) and discourses focused on boosting economic productivity, work-related competencies and international competitiveness (Baildon & Alviar-Martin, 2020) dominate the education domain, even as efforts exist to shift away from these in recent years (more on this in Section 3.2). The education reform shifts in Singapore are notably underpinned by economic contexts, with each wave of major reforms a response to shifting economic conditions and the need, given Singapore's limited natural resources, to build a workforce that sustains the country's economy (Tan et al., 2014). For instance, more recent student-centric, values-driven reforms, apparent in Singapore as in other Asian countries (Kennedy, 2008), have been seen as a response to present-day demands for an economy that thrives best on information and human capital flows (Lee, 2013; Kwek et al., 2020),

alongside a comfort level with the 'unknown' and the unpredictable to prompt innovation and learning (Lee, 2013; Ong, 2018). The influence of global and economic factors on education reforms and importantly, on the human actors implicated in these reforms, cannot be understated, no less than the influence localised discourses sometimes exert to challenge globalised educational policy discourses (Lingard, 2010).

The convergence of multiple sets of sometimes conflicting contexts produces tensions for human actors. Global framings of education, such as efforts to rise in competitive global rankings based on test scores and education policy to prepare people for new forms of labour in the global economy, can simultaneously challenge "policymakers' vision to promote a more holistic, experiential and creative form of teaching and learning that goes beyond summative and written assessment" (C. Tan, 2011, p. 164). The expectation of schooling to balance individual needs and social progress, economic growth and prosperity, social inclusion and civic-mindedness, as well as well-being and performativity are competing demands that put pressure on human actors, who include policymakers, school leaders, teachers, learners and parents (Biesta, 2019). For some, the pursuit of measurable outcomes in the education system to ensure the competitiveness of individuals and institutions (Teng et al., 2020) is seen to cause "tensions between neoliberal pressures to produce human capital and humanistic and democratic imperatives to holistically nurture the individual" (Kwek et al., 2020, p. 426). Others argue fundamentally against a characterisation of the Singapore system as neoliberal, positioning it instead as a pairing of state capitalism (Chua, 2017, p. 121) with collective liberalism undergirded by Confucianist ideals of social harmony and relationality (Sim & Chow, 2019) that, in part, "blunts individual liberalism" (Rodan et al., 2019, p. 187). The result is a set of tensions experienced between collectivist and individualistic orientations, in which individuals compete against each other in a competitive meritocratic system while also being accountable for the collective good of the state. For yet other scholars, these tensions of neoliberalism are experienced worldwide, and simply experienced more in Asian societies (including Singapore), which tend towards relatively higher levels of communitarianism, relationality, collectivity and social cohesion (Kennedy & Fairbrother, 2004; Hairon & Tan, 2017; Tan,

2018; Alviar-Martin & Baildon, 2021) with its consistent rhetoric on the discourse of Asian values (A. Ong, 1999; Barr, 2000).

Tensions felt by human actors through the various contexts noted (e.g., tensions among values, between local and national imperatives, ones related to global neoliberalism and the possible forms these take in Singapore's education system) demonstrate the influence of contexts on human actors. In some cases, these tensions begin to push human actors towards a middle path or "Middle Way" (Nisbett, 2005, p. 212) to ease or manage competing purposes and assuage particular tensions. However, these competing demands may also create conflicting messages for education stakeholders unsure of how to balance or manage competing priorities and agendas (Baildon & Sim, 2009). Documented in Baildon and Sim (2009), for example, are some of the contradictions in official discourses experienced by Social Studies teachers as civil servants expected to teach critical thinking about often controversial public issues while also expected to produce exam results and ensure social harmony. Singapore's centralised-decentralisation and tight-loose initiatives for her education system, discussed in Section 4, are another case in point of competing discourses, as are approaches towards global citizenship education (GCE) and nationalistic forms of citizenship.

3.2 Influence of human actors on contexts: Conceptualisation

While multiple, sometimes conflicting, contexts exert their influence on human actors by producing particular tensions, human actors are capable of exerting their influence on those contexts to manage or ease those tensions, or utilise them in productive ways, e.g., in the promotion equally of both social harmony and social justice (Li, 2014; Ho & Barton, 2022). As MERA notes, learning often involves an integration of experiences from across different contexts. The nested ecology of contexts modelled in both Bronfenbrenner's and the IEA model suggests, moreover, that actors may more or less feel they have the capacity to initiate or control matters within different layers of the nesting. In fact, in any instance where human actors have a sense of being able to initiate something, of having control over ongoing action, of being able to intentionally cause something to happen or even of being able to remain passive or to project a façade of conformity with

the goal of changing something among peers or authorities (Pacherie, 2007), agency is already exercised on context, even if institutional context in the broadest sense of the term seems unchanged. In other words, contexts of learning are never fixed because human actors can shift, for example, discourses used and material/physical arrangements in their very response to existing contexts (Giddens, 1984). Even in school settings for tiny tots, Albon and Hellman (2019) report that efforts to socialise and regulate children into competent members of state and society through ritualised contexts can run up against children's manoeuvres to get around those contexts. When these contexts physically dictated where children had to sit, children were found to "subvert this spatial 'order'" by moving the placemats and the high-chairs that had their photographs to a seating position of their choice (p. 162).

The primary influence of human actors on contexts is thus through agency—whether at an individual or a collective level. Agency is expressed through identities, roles and purposes.[5] Contemporary issues, such as climate change, ecological degradation, inequalities, exclusionary rhetoric, poverty, authoritarianism, basic human rights violation, migration and cultural diversities (Alviar-Martin & Baildon, 2021) are contexts that prompt not just individuals, but whole communities to act. These contexts speak all at once to several identities and roles (e.g., people's role or identity as a citizen, their identity as a low-income earner, a female, a migrant, or someone with a particular sexual orientation or political affiliation). The multiple identities and roles that people hold give them access to the discourses of various contexts, so that even 'official discourses' (Foucault, 1983; Apple, 1993) can become agentic spaces (Giroux, 1990; Fairclough, 2010). An awareness of particular forms of language use in discourses is fundamental in sensitising teachers to the deep-seated roots of inequalities embedded and reinforced in the way language is employed (Arnold & Faudree, 2019, p. 295), hence expanding teachers' roles

[5] Identities are a set of meanings that define who one is, such as one's creed, country, colour, class, culture (Appiah, 2019) and roles are externally-defined expectations (Stryker & Burke, 2000) shared across several individuals. Agency thus does not necessarily have a locus, but may be distributed (Leander & Lovvorn, 2006; Rappa & Tang, 2017; Wee, 2021), e.g., in historically-grounded and socially-shared identities and roles (Foucault, 1983, Holland et al., 1998), in particular activities, or where it is mediated by technological, global, social and cultural conditions (Ahearn 2001, p. 118).

as potential agents of change to reduce these inequalities. Similarly, developing in learners an awareness of language and its social implications can facilitate learners' examination of 'self' and 'other', sensitising them to the encoding—in familiar language practices and norms—of unexamined ideologies and biases that impose specific worldviews as natural (Abe & Shapiro, 2021).

Since roles and identities purposefully directed through discourses towards a course of action is how agency can be expressed and the agency of human actors influence contexts, it is also through an interplay of roles, identities and discourses that contexts can be shifted to advance teaching and learning (Giddens, 1984; Biesta & Tedder, 2007). In empowered forms of learning and teaching, the literature refers to role and identity expansion, e.g., learners who exercise greater choice and voice in learning (Reeve & Cheon, 2021), teachers who are aware of both self-as-teacher and self-as-learner (Natarajan et al., 2021) and teachers who reconstruct different facets of their identities in their pedagogical approaches (Chee et al., 2015). However, as noted, new and emergent contexts can run up against particular roles, identities and discourses that teachers, learners and other education stakeholders might find hard to discard. These then lead again to a set of tensions or what P. T. Ng (2020) has referred to as paradoxes, this time more specifically between the type of agency shifting contexts invite and the type of agency human actors continuously enact, and in doing so, keep intact old contexts or create resistance to new practices and ways of thinking.

A notable context is when parents in Singapore are reported to experience greater anxiety than relief at MOE's scrapping of mid-year examinations (J. Tan, 2022). Here, we have a case of how parental views of examinations as a source of accountability and information for their children's course selections and potential career pathways can run up against policy intentions to shift from a performative and accountability-based education culture to one more focused on active and meaningful learning (J. Tan, 2022, n.p.). In part, these tensions arise from parental identities and their perceived roles, understandably so, as custodians of their children's future. The tensions arise also from the difficulty that teachers, learners and parents face in "look[ing] beyond the weight of academic scores on a child's future" (J. Tan,

2022, n.p.), where these difficulties likely stem from past experiences (Dewey, 1983; Bruner, 1990; Wertsch et al., 1995; Holland, et al., 1998; Tomasello, 1999; Markus & Kitayama, 2003). In Singapore, these past experiences are often contextualised by some sense of an "unchanging systemic, social and cultural demand for good grades in examinations" (Teo et al., 2013, p. 101). What is seen then are tensions between long-held ways of acting based on past contexts of how the system is known to be, including the roles and identities (of parents, teachers, learners, etc.) formed within those systems, and new contexts of learning that institutional processes are trying to introduce or push for.

3.3 Mutual influences of contexts and human actors: Policy/ practice implication

Tensions that arise from the mutual interdependency between human actors and contexts have existed for some time. This explains that despite changes in policy and curriculum, as well as the effort to create new contexts for agency in classroom practice, these efforts continually face challenges. The attempt to encourage a shift towards other measures of performance beyond those quantified by examinations had started way earlier in such initiatives as Teach Less, Learn More (TLLM) (Teo et al., 2013). First mentioned by Singapore Prime Minister Lee Hsien Loong in 2004, and subsequently instituted as a policy, TLLM encouraged teachers to focus less on didactic teaching and engage learners more in learning (P. T. Ng, 2017, p. 82). The spirit of this focus on learning has continued in subsequent initiatives. These include the introduction of the Framework for 21st Century Competencies and Student Outcomes (also commonly referred to as the '21CC framework'), which converges on a set of Desired Outcomes of Education (Confident Person; Self-Directed Learner; Concerned Citizen; Active Contributor) (MOE, 2021b; Chiong & Lim, 2022), and the more recent Learn for Life initiative (MOE, 2020). These endeavours aim to pave the way for contextual shifts from quantified measures of performance focused on academic capacities to quality teaching that equips learners with 21st Century Competencies (21CC) through, for example, differentiated teaching, experiential learning and character-building. However, if despite these efforts, anxieties and tensions around examinations remain (see Sections 3.1 and 3.2), new initiatives or reforms seem insufficient to shift long-standing social, cultural and institutional contexts, as well as their social practices. What might be

important is an acknowledgement in policy and practice discourses of long-standing contexts that make innovation difficult and the human factors (family background, cultural resources, individual qualities, perspectival tendencies, etc.) that keep these contexts intact even as the said human factors are pivotal in supporting desired changes. Matched against the IEA model, which deems discourses central to the (re)production, maintenance and navigation of contexts, the recognition of long-held contexts and a (re-)imagination of new ones have to necessarily engage the relevant discourses in various educational domains. Defining and saying exactly where the balance may be found, for example, between human envisioning of a holistic education and human striving for academic achievement is something requiring clarification for policymakers and other education stakeholders (Ng, 2020). This is especially so if alignment across stakeholders as to the purpose of education (Lee et al., 2016) is required to sustain any educational evolution (Reigeluth & Karnopp, 2013).

Beyond Singapore and in reference to the UK and US schooling contexts, attempts have been made to recognise/identify, for educational progress, school climates that could arise from the interplay of contexts and human agency. In the UK, research evidence on ability grouping was dismissed due to "discursive orthodox[ies]" that reproduce "historic, naturalised assumptions" about 'ability', social hierarchies and the benefits of ability grouping in education (Francis et al., 2017, pp. 12–13). In the US, Cornbleth's (2001) identification of five school climates of (1) bureaucracy, (2) conservatism, (3) censorship, (4) pessimism and (5) competitiveness speaks to human ways of acting that name these contexts, and more importantly, points to the types of human factors that preserve particular school climates.

The reference to Francis et al. (2017) and Cornbleth (2001) is not to say that Singapore is necessarily experiencing the contexts these authors name or that there are not drivers or enablers to neutralise potentially harmful contexts and the agentic forces that (re)produce them. Fullan (2021) refers to climates of well-being and learning (as a counterforce to an obsession with academic achievement), social intelligence (as a counterforce to machine intelligence), equality in investments (as a counterforce to austerity), and systemness (as a counterforce to fragmentation). Systemness, in particular, calls

up the simultaneity of connectedness and agentic autonomy, i.e., where system solutions are open to situational adjustments. Within Singapore, pedagogical innovations also promote teacher agency with teacher change in epistemic beliefs facilitated to enable better learning (Ho et al., 2019). What is important to bear in mind is that because educational climates as a form of context are inextricably linked to human agency (including human perception and response, whether in terms of well-being, social intelligence or beliefs), a recognition/identification through policy and practice discourses of the human agentic forces and contexts that both facilitate and hinder the enactment of present large-scale education shifts might well help these shifts.

This recognition/identification can be conducted along the lines of human actors and contexts in two ways. One is to envision the conceivable consequences of policies on different education stakeholders. A curriculum concept by Cherryholmes and Wickersham (2002, p. 114) captures this in the pragmatic question of "[w]hat are the imaginable, conceivable consequences of affirming or denying a particular vision?" From an education policy viewpoint, this is tantamount to asking what multiple kinds of change education initiatives might engender, what the implications of these are on existing contexts and agency, in particular, on the contexts of human actors' long-held practices and potential reasons for these implications. A second way in which discourses of policy and practice can acknowledge the human agentic forces at work in various initiatives is to articulate the agential elements (beliefs, routines, procedures) related to the achievement of desired outcomes, and the enactment and reproduction of social activities. Included here would be an articulation of the range of "structural options" (McGrath, 2009, p. 81) for agency posed by different levels or layers of context, and a recognition of the "penalties" that might restrict those options, i.e., "the penalties (however strong) that apply if we don't engage appropriately in activity" (p. 86).

A way to think about contexts and agency therefore is to ask what kinds of options are available for exercising agency within system needs for shared, coherent understandings of what the problems are, what would work and forms of meaning-making (Fullan & Quinn, 2015) and what the contexts are that enable and constrain options for agency.

Thinking along these lines would encourage a consideration of what the consequences might be for a teacher or learner to raise a potentially controversial issue that is meaningful, relevant to their identity or that is being debated in the broader society. This includes a consideration of what the consequences might be if the opportunity to raise that issue is beneficial but not permitted. A collaborative spirit and knowledge depth is important for coherent understandings of issues and solutions across contexts (Fullan & Quinn, 2016) and this is something that high accountability education systems might lack (Kwek et al., 2020). Nonetheless, here is also precisely where it becomes important to be able to articulate in policy and practice discourses the dynamics of contexts alongside the human agency that reproduce or change them. These forms of articulation would clarify the ways in which different contexts place different 'demands' on human actors, for example, showing how past values and beliefs nonaligned with holistic education may persist in new contexts and forms of agency that promote this form of education. Wagner (2014, p. 431) refers to such articulations as a methodical sifting "through the complexities and interrelationships of causes [of circumstances] to separate levels of causes, distinguish between causes and effects, and better identify solvable root causes".

Certainly, local education scholars such as Ng (2020), Lee et al. (2016) and J. Tan (2022) have made inroads in pointing to an interplay of contexts and human factors that make some education initiatives less easy to assimilate. Where this translates to policy implications, it might be a matter of crystallising these inroads by explicitly communicating the varied types of school or societal contextual characteristics and human agential factors certain policies are likely to run up against and why, recognising those characteristics and factors for what they are in relevant policy and practice discourses. For example, where Chua et al. (2019) point to the importance of a risk-taking culture to support and sustain the autonomy diffused to Singapore schools, this might translate into a recognition not only of how potential stakeholder risk adversities impact teaching and learning, but of how these adversities arise from broader sociocultural contexts. The *futures* agenda of GERA, which envisions uncovering ways to develop desirable learner competencies, shift teacher roles and teaching, as well as change educational pathways, seems to reflect a fundamental intention to better understand the dynamics of how societal contexts impact human development and agency.

4. Curriculum and the future of learning and teaching

Just as societal and cultural contexts may influence human actors, these contexts may also influence the curriculum. Curriculum is always about developing future-ready learners able to exercise agency in various contexts (including anticipated future contexts) and their life pathways. GERA refers to questions of how to equip learners with competencies to thrive in the future and of curriculum that is linked to societal factors, in its equal prioritisation of the Instructional Core, research efforts targeted at 21CC and the understanding of societal contexts that shape education. Indeed, curriculum reflects what is valued by society as important for learners to learn at present and for the future, and 'society' refers to groups of stakeholders (policymakers, parents, teachers, learners, researchers, community, religious and business leaders—all with different needs, interests and agendas). Contemporary curriculum scholars refer to the role of various powerful groups "in determining what should be taught and learnt in schools" (Schubert, 2021, n. p.), just as hidden curriculum has been claimed to be powerful in reproducing forms of inequality (Bowles & Gintis, 1976; Teo, 2018). For example, business and government leaders might emphasise curriculum for human capital development (e.g., workplace skills, competencies, capacities) in tandem with a notion of the ideal citizen (C. Tan, 2008) as possessing a mix of these skills and competencies. Civil society members might emphasise civic, social and values education, parents want education as a means for social mobility or to hold their place/advantage in society and teachers try to balance/juggle all this, with the need to focus on well-being, mental health and social-emotional learning. Those working in the disciplines (the sciences, social sciences and humanities, etc.) all advocate for the importance of the skills, knowledge and dispositions the academic subjects foster and for their relevance in contemporary society. Multiple, interacting contexts that shape curriculum (and identities) as a dynamic process are also presented by new technology, demographic changes, globalisation, greater attention to equity and special needs learners, as well as social issues such as worldwide pandemics, climate change and the spread of digital technology that require new forms of ethics education, knowledge, criticality, creativity and social practices (Koh, 2004; Rogerson, 2021). This multitude of influences from different vantage points means that a centralised system and its curriculum have to have multiple allegiances yet strike a path that will please some while disappointing others.

The introduction of a centralised-decentralised education system (Ho & Koh, 2018; Kwek et al., 2020) is one way the Singapore MOE seeks to juggle the needs of education for various stakeholders hoping to shape curriculum. Here, a centralised direction for the system is based on local and national goals, whilst individual schools and their leadership are left with autonomy as to how they choose to move in that direction (Ng, 2017). Likewise, MOE's advancement of the 'tight-loose' approach is also a means of juggling various societal needs and contextual influences in its curriculum. Here, the curriculum is approached as 'tight' in its "strategic intents", "educational philosophy", national curriculum formulation and learner evaluation, but 'loose' at the level of school and classroom implementation (Chua et al., 2019, p. 5). The centralised-decentralisation system and the tight-loose approach represent efforts to balance a highly centralised approach that "tends to eschew school voices" with a highly decentralised approach that "may not be aligned with national goals", alongside resource use efficiency to address pressing priorities (Hung et al., 2019, p. xv). This delicate balancing act tries to direct the autonomy of human actors in schools and classrooms, but also likely faces challenges in terms of how much direction or agency is needed to support innovation and changes in curriculum or classroom practice.

Nonetheless, while there are certain "constants" that are difficult to change (society's ideological constructs, the level of importance accorded to certain forms of knowledge, etc.), there are contexts (e.g., "social systems") that "can be influenced" by curriculum policymakers and designers (Glatthorn et al., 2019, p. 58). Questions naturally arise as to whether the contexts that shape curriculum (MOE, schools, classrooms) can be potentially shifted by what those directly engaged in the daily enterprise of curriculum development, teaching and learning can reasonably enact, given the demands placed on curriculum and classroom practice by the perceived imperatives of centralised authorities and broader contexts (future job demands, discourses of educational accountability, etc.) (Apple, 1993; Giroux, 2004; Koh, 2004; Pinar, 2012).

4.1 Influence of contexts on curriculum: Conceptualisation

The contextual influence societal priorities exert on the curriculum is observable in the way curriculum is conceptualised and designed by policymakers and curriculum designers, the way the curriculum is interpreted and the way teachers and learners engage with the curriculum. For example, curriculum development is shaped by what has been referred to as the Tyler (1949) rationale, a model for curriculum development that usually proceeds sequentially from identifying learning objectives, planning activities that support those objectives and evaluating or assessing the extent to which those learning objectives have been met. For Schwab (1964, p. 19), this logical, linear and often prescriptive notion of curriculum has constituted a set of "tyrannical and unexamined curriculum principles" that still drive curriculum development in many systems. Nonetheless, despite its firm footing in educational practice, other curriculum paradigms have emerged to challenge some of the assumptions of a prescriptive curriculum (e.g., see Pinar, 1995).

It is beyond the scope of this paper to examine different curriculum theories or models of curriculum design. A key point, though, is that curriculum development is always a "selective tradition" (Apple, 1990) that determines how curriculum, teaching and learning are viewed and enacted in schools (Deng & Luke, 2008). It is therefore important for educational policymakers, curriculum specialists and teachers to engage in curriculum inquiry and processes of reflection that probe underlying motives, assumptions and consequences of curriculum. Ellis (2004), for example, suggests examining curriculum in terms of whether it is prescriptive or descriptive. While a prescriptive curriculum emphasises the standardisation of content and teaching methods, providing ideas about what 'ought' to happen in classrooms (Ellis, 2004), it can limit the ways in which curriculum is interpreted and enacted. A descriptive curriculum shifts from a pre-ordained view of how things should be taught to a more open view of creating and embracing multiple learning experiences and pathways (Ellis, 2004). Aligned with Dewey's (1938) view that starting with learners' experiences leads to deeper and broader opportunities for learner growth in less pre-defined ways (Jenlink & Jenlink, 2019), a descriptive curriculum facilitates flexibility and responsiveness on the part of teachers and learners, encouraging negotiations, and multiple interpretations and

enactments of curriculum that build learner capacities through the application of skills and dispositions to new problems and situations as these arise. Where a prescriptive curriculum promotes predetermined ends fashioned by those remote from the educational process (Jenlink & Jenlink, 2019), a descriptive curriculum has the ends and means of teaching and learning organically formulated through inquiry, reflection and the social interactions that occur in classrooms (Dewey, 1938). In this regard, one of GERA's goals to examine changes in educational pathways that can support the future of learning and teaching seems to lend itself rather well to the general characteristics of a descriptive curriculum.

The inquiry and probing of curriculum and its contexts in a descriptive light implicates a deliberation of educational purposes and learner and teacher roles and identities, where these consequent interactions might approximate the Instructional Core interaction of curriculum, pedagogy and learning. The Instructional Core is useful as such in understanding contexts of curriculum, and examples presented in this section to aid this understanding are ones that closely associate with the Instructional Core. They are also ones that inevitably call up, as a dimension of the Instructional Core, teacher and learner expression and enactment of their identities, roles and purposes in the instructional process. If fundamental to agency (section 3.2), these expressions and enactments position an understanding of curriculum as a context that infuses also an understanding of agency. Indeed, within Singapore and Asia, a few studies demonstrate the purposeful (re)working of identities and roles in curriculum for new forms of labour and citizenship, new instructional practices and learner-centred experiences. In these studies, teachers and learners experience identity and role shifts, as well as more expansive notions of learning as they navigate and negotiate myriad contexts and forms of agency to straddle the tension between dealing with real issues and engaging with an intended curriculum.

In one study, the curriculum goal of developing "empathetic and global thinkers" (Curriculum Planning and Development Division, 2019, p. 8) in literature study in the English syllabus is seen to rework learner identities of what it means to be global citizens characterised by "cultural pluralism" (Choo, 2021a, pp. 171–172). Learners are shown,

as a result of the way the curriculum was implemented, to be able to appreciate alternative frames of reference and emotions towards globalisation that may be held by various groups but are now felt to be shared and appropriated by the learners themselves. Identity (re) working here locates the beginnings of agency in learners for a more just and equal globalised world. As importantly, the opportunity for these re-workings would not have arisen if not for a curriculum that is sufficiently open to be interpretable in light of contexts such as social divisions, poverty and climate change that citizens everywhere are increasingly facing (Alviar-Martin & Baildon, 2021). Viewed through the lens of an open curriculum, these contexts become important in bringing to bear conceptions of citizenship against tensions that stem from having to balance the dynamics of global civic responsibility, the role of rights-bearing individuals within institutionalised nation-states and the inculcation of moral and ethical values to guide sound decision-making and appropriate social action (Owen, 2014; Tully, 2014; Alviar-Martin & Baildon, 2016; Wood & Milligan, 2016; Neoh, 2017).

Yet another example of the way purposeful negotiation of roles and identities and a more expansive sense of agency can arise through a curriculum that accommodates interpretive flexibility is in Yang's (2021) work. Set against teaching in Singapore schools of a non-examinable curricular component called Issue Investigation (II), the Social Studies (SS) teachers in Yang's (2021) work are notable in exercising agency through the curriculum to resolve the conflictual roles they encounter between supporting national interests in teaching II and their purpose as teachers to impart critical, independent thinking skills that sometimes challenge the status quo. The agency the teachers were able to demonstrate in negotiating their multiple roles and their perceived obligations that come with each is shown when the teachers came to see the supposedly diametric II approaches as two ends of a continuum along which they might shift based on various circumstances and learning needs so that the value of neither is diminished (Yang, 2021). This is not to say that Singapore SS teachers are always able to effectively enact forms of agency through the curriculum in all circumstances. Elsewhere, Singapore SS teachers have been reported to struggle with locating the perimeters (and determining whether these are real or perceived) where they can begin to engage learners in the critical thinking necessary for a globalised society

without encroaching on the political sensitivities of the Singapore government (Baildon & Sim, 2009). The point is that curriculum has to be able to guide teachers to find a balance between their role of encouraging the development of students' 21CC such as critical thinking and civic literacy and their role of maintaining student support of national interests. The 'middle path' teachers forged through the II curriculum between what they saw as competing purposes of state and pedagogical interests (Yang, 2021) is realised through teacher agency, but it simultaneously demonstrates possibilities for this agency to arise through curriculum contexts that include learner needs, teacher purposes and 21CC goals.

Contextual influences on the way curriculum gets negotiated to balance competing demands is also found in other parts of Asia. In an international school setting in Hong Kong, several contexts are found to influence Chinese language (CL) teachers' approach to CL teaching, i.e., whether these approaches lean the curriculum towards traditional methods (e.g., homework and recitations), or towards Western ways targeting learner interests and interactions (Lai et al., 2016). The contexts that shape teaching here include learners, parents and Western colleagues' attitudes towards traditional ways of teaching CL, as well as teachers' own envisioning or perception of what good CL teachers do (e.g., they improve learner grades and ensure learner grasp of the language). These contexts support some CL teachers in being agentic in how they choose to enact the curriculum, where, for instance, they adjust the frequency of traditional approaches to CL teaching as needed without doing away with these altogether. The fact that teachers' decisions on these matters are reported to sometimes go against the grain of what school leadership advocates shows not only the multiple contexts that shape the curriculum CL teachers eventually deliver. It also shows the flexible spaces these contexts afford for curriculum interpretation once teachers engage in forms of purposeful negotiation related to their identity and role that, in turn, support their imagining or re-imagining of how CL teaching ought to be.

In addition to curriculum for school subjects such as Literature, SS and CL, contextual influences also emerge in more contemporary forms of curriculum such as mindfulness programmes. As in previous examples, these influences occur in concert with engaging a purposeful sense

of identity and role. If agency entails choice, i.e., choosing a course of action where another could otherwise have been taken (Pickard, 2011; Ingerslev, 2020), this choice becomes available when learners in mindfulness programmes are taught ways to rethink the identities and roles they may assume (Khng, 2018). A curriculum that promotes this choice is certainly reliant on a set of contexts. Mindfulness is itself a context of learning. It is a context further undergirded by global and national contexts. These include an increased emphasis on self-transformation to navigate an increasingly volatile, uncertain, complex and ambiguous (VUCA) world (Stein, 2021) and the means to achieve this self-transformation (Dirkx et al., 2006), an increased importance placed on developing capacities for coping with stress and anxiety (Khng, 2018) and an overall emphasis in Singapore and in other places on socio-emotional learning and its component skills set (CASEL, 2018; MOE, 2022).

4.2 Influence of contexts on curriculum: Policy/practice implication

Common to the examples of contextual influences on the curriculum is that when these contexts emerge, they are accompanied by agency exercised from ground-up practices (Tully, 2014). These forms of agency can engender a revisit of established teacher roles and the roles teachers may potentially embrace and learners who find or are given the means to develop their identities and take charge of their learning. In other words, this agency stems from “the interaction among people, their work, and the contexts within which they live” (Labaree, 2011, p. 631). It appears often in the form of a middle ground or hybridisation sought to encompass and recognise the multiple interacting contexts impacting the curriculum, e.g., evoking multiple lenses to view globalisation (Choo, 2021a), obtaining a middle path between conforming to the status quo and enacting pedagogical aspirations (Yang, 2021), combining Asian and Western pedagogies as needed (Lai et al., 2016) and having learners see the actions they take as one of several choices as to how they may respond to a situation (Khng, 2018). These forms of agency are neither independent of the tensions felt when people operate across multiple, competing contexts (Section 3.1) nor of the resistance from habitual contexts and practices new initiatives run up against (Section 3.2). What the examples have shown, though, is that it can be through the curriculum and how it is

spontaneously adjusted or adapted from the ground, that the space is found for human actors to flexibly participate in and produce the contextual shifts to introduce helpful conditions of choice, agency and desired values into teaching and learning.

The above resonates with views from both scholarship and policy regarding how 21CC development may be undermined by overly-centralised structures and how, on the contrary, a curriculum that hybridises teacher-centric and inquiry-based, student-centric approaches may be envisioned. It resonates with hybrid pedagogies that promote multiple pathways to schooling, academic progress evaluations and talent recognition (Lee et al., 2016; MOE, 2021d) and with approaches that deliberate on social tensions as an avenue for social harmony (Ho & Barton, 2022). In these, a place is found for curriculum that can be flexibly reconstructed and co-constructed in a progressive, Deweyan sense (Dewey, 1916; Schubert, 2021). In these also is a place found for curriculum that embraces different, nuanced discourses that engage evolving perspectives of citizenship and identity (Alviar-Martin & Baildon, 2016; Neoh, 2017) and "deeper reflections" beyond the context of an East-West dichotomy (Neoh, 2017, p. 36). Themes of balance, hybridity and the encouragement of alternative ways of viewing and framing situations seem to go along with more conjoined forms of agency, described by Markus and Kitayama (2003) as more relationship-focused and interdependent, arising in interactions with others and more responsive to others and the world. As Biesta (2019, p. 666) argues, educational contexts structured along these lines of interdependencies and interactions "give the new generation an opportunity to meet the world and themselves and...time to 'work through' what they meet there", to realise their agency and potential more fully.

With this in mind, one might recall that at the policy level, what TLLM espouses is a cut-back on content taught, to give more space and time in the curriculum for teachers "to reflect more" and for learners to have "the room to exercise initiative and shape their own learning", as then Education Minister Tharman Shanmugaratnam put across (Ng, 2017, p. 83). The policy focuses on space in the quantitative sense of more time given to teachers and learners to do these things. A qualitative sense of how this space may be used to advance reflective teaching

and self-directed learning is in some ways proposed in MOE's *TLLM Ignite! Package* and the *PETALS™ framework*, which foregrounds different levels of emphasis on the 'what', 'why' and 'how' of teaching (Teo et al., 2013). Examples in Section 4.1 have shown that these qualitative types of curricular spaces may well be more generic, taking the form of flexibility for teacher and learner expansion and (re-) imagining of roles and identities (Emirbayer & Mische, 1998; Holland et al., 1998; Pöllmann, 2016) in the spirit of obtaining hybridised, middle-paths to teaching and learning. Beyond specific frameworks, in other words, qualitative curricular spaces for flexible learner (re-)imagining of roles and identities may be found more in a curricular balance struck between teacher- and learner-centricity and in the uptake in curriculum of the multiple vantage points of diverse identities, agencies and aspirations in coping with the competing contexts that influence curriculum (Alviar-Martin & Baildon, 2016; Neoh, 2017).

A flexibility for teacher and learner expansion and (re-)imaginings as a form of agency is thus tantamount to affording more descriptive curricular spaces (Section 4.1) to introduce multiple lenses, both those of dominant and less dominant groups. It is through allowing these multiple lenses that the curriculum itself can serve to produce knowledge (Giroux, 1990, p. 89), rather than simply structure it, casting the curriculum as "opportunities that are provided children to learn while at the same time rejecting those opportunities as complete or authoritative or both" (Cherryholmes & Wickersham, 2022, p. 120). Having such a stance for curriculum in policy and curriculum discourses would grant and generate the agency for greater autonomy, openness and flexibility that hybridised, middle-paths to teaching and learning seek precisely to obtain. This flexibility is not at odds with either the pivotal role of state-level flexibility in rethinking the role of education and other matters (Koh, 2004) or the flexibility that the contexts of the Learn for Life initiative and future economy demand of its knowledge workers (Sim & Low, 2012; Lee, 2013; MOE, 2020). It is also not at odds with the context of Confucianist ideals in Singapore society, where the Confucian social and ethical ideal of a moral and upright person (or *junzi*) is one who possesses "flexibility in handling things" (S.-H. Tan, 2015, p. 622). Added to content reduction, flexibility in curriculum navigation, if encouraged in policy and curriculum discourses, might well advance the goals of TLLM. As Lee et al. (2006) note, these goals

include getting teachers and learners comfortable with re-imagining situations, experimenting with different approaches to educational practice and developing the sensitivities needed to understand past and present system assumptions, so as to respond to and navigate challenging, complex and dynamic social conditions.

5. Future of schooling as a response to and across contexts

This paper has dealt with contexts as they relate to human agency and curriculum. The picture remains incomplete without considering contexts as they relate to schooling. The actions of human actors in teaching and learning or the way curriculum is implemented, learnt and taught happen primarily within the ways in which the operationalisation and organisation of schooling evolves (MOE, 2018). The key term here is 'evolving', which implies a non-static, dynamic nature to the contexts that shape schooling. Multiple interacting contextual factors, such as changing economic conditions, emergent social concerns and new demographic realities, work as drivers of change for (while also being steered by) social and educational policymakers. Often stemming from "situational anxieties" that prompt education reforms (Alviar-Martin & Baildon, 2016, p. 9), these drivers of contextual changes are also educational policymakers' and practitioners' response to changes observed in society. For example, international reforms that prioritise critical and creative thinking skills, vocational education, entrepreneurialism, STEM education and a host of 21CCs deemed necessary for new and evolving forms of labour and economic growth are precipitated by particular global economic trends. These global economic trends and the increased volatility, uncertainty, complexity and ambiguity they create have also resulted in greater emphasis on social-emotional learning, positive education (and teacher and learner well-being), values-based education and other efforts in schooling contexts to manage the consequences of changing global economic landscapes.

Since the launch of the Thinking Schools, Learning Nation reforms (MOE, 1997), Singapore has implemented a series of significant education reforms to meet the challenges of competing in the global knowledge economy. As Kwek et al. (2020, p. 427) note,

> [O]ver the last decade, in particular, concerns about the future economy, lifelong learning, social inequality, and early childhood education have surfaced, leading to government initiatives such as the SkillsFuture initiative (Ang, 2018) to provide lifelong skills mastery, and the KidStart programme that provides an 'ecosystem of support' for struggling families (Early Childhood Development Agency, n.d.). Along with an ongoing anxiety over bilingual education and a continued need to improve classroom pedagogies, these suggest a system that is in continuous evolution as it is subjected to top-down imperatives and bottom-up needs from schools and society.

Concerns arising from changing global economic and social contexts have resulted in education reforms that illustrate how the dynamic, evolutionary nature of different contexts often drive policy responses within the schooling system and the way these reforms take shape. Assessment-for-learning initiatives, inquiry-based learning and other pedagogical innovations desired by policymakers, for example, have been noted to run into challenges in the schooling system because of the continuous influence of high-stakes assessment (Kwek et al., 2020; Onishi et al., 2020; Wong et al., 2020). Deng and Gopinathan (2016, p. 457) note how the high-stakes examination system, along with a prescribed national curriculum, "steers classroom practice towards a kind that is largely traditional and didactic in nature, directed towards the transmission of curriculum content and examination performance, with whole-class teaching as the dominant teaching mode".

From another perspective, persistent constraints on education reforms, such as those between a traditional assessment system and pedagogical innovation, centralised accountability and decentralised autonomy, as well as human capital development and holistic forms of education, have been argued to stem from gaps in analytical capacities (Kwek et al., 2020). Drawing on a conceptual framework developed by Wu et al. (2015), Kwek et al. (2020) suggest that while Singapore has strong fiscal and operational capacity to fund, develop and align the resources needed to garner political and public support for policy actions, lacking are the analytical capacities to ensure that policy goals are met in the implementation of reforms. Hence, while policymakers are likely sensitive to competing contexts, in cases where these run even deeper than what practitioners can adjudicate or manage at a micro-level of agency (Section 3) in curriculum interpretation and

enactment (Section 4), addressing the conflicting nature of these contexts may necessitate macro-level shifts in policy possible only through a holistic view of the full ecology of education.

Whether such macro-level shifts in policy are on the radar is not something we can comment on. However, schooling systems do respond in an ecological way to competing contexts stemming from societal needs, policy imperatives and localised everyday demands. This is evidenced in the way purported sociocultural contexts, such as Western ideals, Asian values or Confucianism, are never absolutely deterministic even as they are seen to align with national needs at times (Lee, 2013). First, possible overlaps among various sociocultural ways of being and doing and so-called East-West dichotomies may well be motivated by contemporary socio-political imperatives (Sen, 1997; A. Ong, 1999). Second, there exist studies that have shown "neither nationality nor a collectivistic cultural orientation" affects teachers' beliefs about the effectiveness and ease of autonomy-supportive pedagogical strategies (Reeve & Cheon, 2021, p. 69). Autonomy-supportive pedagogical interventions have been found to improve students' self-efficacy, self-regulation and grades (Wang et al., 2016) in Singapore and in the Reeve and Cheon (2021) study, evidence of successfully implemented autonomy-supportive strategies are found across 17 nations, spanning from the East to the West.[6] Aimed towards broader goals such as that of taking students' perspectives and supporting their intrinsic motivation, examples of these strategies include inviting students to pursue their interests, explaining the rationale of activities, being patient with students, using invitational language and acknowledging any negative emotions students might have (Reeve & Cheon, 2021). Successful implementation of autonomy-supportive strategies across multiple geographic areas suggests that even if people are presumed to act out of presupposed habits on most occasions (Bourdieu, 1990), they have the reflexivity to act otherwise depending on situations, which is referred to as "good reflexivity" (Elder-Vass, 2007; Pöllmann, 2016, pp. 4–5). This form of reflexivity is core to transformative learning (Dirkx et al., 2006; Eschenbacher & Fleming, 2020), which is increasingly demanded in schooling contexts

[6] The 17 nations include "Australia, Belgium, Brazil, China, Columbia, Estonia, Finland, France, Germany, Greece, Israel, Korea, Norway, Singapore, Spain, the United Kingdom, and the United States" (Reeve & Cheon, 2021, p. 69).

that cannot stand apart from global and local tensions, world crises (Alviar-Martin & Baildon, 2021), other destabilising forces (Parker et al., 1999) and ensuing shifts in the resources (e.g., technology) and (age and locational) boundaries that define learning (MOE, 2020; Moorhouse & Wong, 2022).

5.1 Influence of contexts on schooling: Conceptualisation

A helpful framework to understand present contexts of schooling is the view that acting in contexts simultaneously engages past patterns of being and doing (iteration) based on contextual similarities, likeness or analogies (Schutz, 1967), as well as hypothetical trajectories of future/imagined possibilities (projection) (Emirbayer & Mische, 1998). In brief, human actors adjust past patterns and imagined possibilities to fit present demands and exigencies (practical-evaluation). This manifests in the ecology of schooling in which a multitude of dynamic, interacting contexts may be reproduced, resisted or transformed by multiple actors acting in myriad ways under various influences fundamental to the innovations (Bakhtin, 1979; Wertsch, 1994) that evolve schooling. Necessarily important for this ecologically-based evolution is human reflexivity to stand apart from past, present and projected contexts, to connect these and draw upon them as necessary resources to address the emergent, shifting needs of schooling.

Reflexivity points to the importance of understanding policy enactments through the adaptive lenses of learners, teachers and school leaders facing tensions and solving problems in their everyday schooling practices. As C. Tan (2018, p. 186) notes, to obtain the ideal of harmonising policy "with the educational dreams, habitus, religious and metaphysical commitments and lived experiences of educators and parents", it is imperative for "education authorities and curriculum planners" to be in regular "communication", "negotiation" and "consultation" with stakeholders operating at the level of schooling. The reflexivity enacted from a synthesis of past, present and projected contexts (Emirbayer & Mische, 1998), with which policy and curriculum makers might potentially align, can be illustrated with a few examples.

In school leadership, Ho et al. (2019) note the especial need for school leaders to be clear at the meso-level about the intent of both system and school policies, to ease the connection and grasp the tensions (if

any) between the microsystems of teachers and learners and broader exosystemic and macrosystemic trends, values and cultures that shape policy and practice. In other words, school leaders' ecological awareness of multiple contexts and their ability to leverage multiple levels of the schooling system provides the coherence and consistency across the system to help justify and operationalise education system goals. Ho et al. (2019) argue that this is notably important in terms of communicating and engaging with teachers around interpreting and implementing education policy within each school's own unique contexts. They make the case that since education reforms now depend on teachers' collective agency,

> the model of policy implementation where the top conceptualises and the bottom implements may not be fully effective. Teachers, who are the final implementers of education policies, need to have greater engagement in how policies are understood or interpreted in the context of their school's vision, mission and objectives before these policies can be implemented successfully (p. 16).

The reflexivity in connecting contexts (past, present, projected) in evolving the way schooling responds to contexts may also reside in the institutionalisation of school policies. Ashley's (2010) work, which observes how school leaders from "middle-class fee-charging" private schools in India incorporate outreach programmes to "economically disadvantaged children", is noteworthy for the fact that the school leaders, in seeking to provide an education for "local children who are out of school", actually went "against the norms of their [own] fee-paying systems" (p. 339). Equally important as the agency shown by the school leaders is the fact that this agency came about from a reflexivity linked to school leaders' felt tensions between children's non-equal access to the education system and the values of 'equality' and 'fraternity' advocated in their local Constitution. Reinforced is the idea that the way schooling operations respond to contextual tensions is not something that can stand apart from the human reflexivity to connect contexts. The schooling operations that had changed in the case reported in Ashley's (2010) work were precisely in response to tensions felt through competing social demands.

An ecological perspective that demonstrates reflexivity implicated in the evolution of schooling can apply at the intersection of formal

and informal (or in-school and out-of-school) learning. Rappa and Tang (2017) show, for instance, how learner understanding of school-taught physics concepts is facilitated by connections drawn in a networked fashion across various contextual sources, including learner "knowledge and/or experience of a phenomenon in the informal domain" (p. 682). It is notable that in doing so, the learner simultaneously manoeuvres back and forth across past, projected and present contexts, implicating in some cases tensions between texts the learner engages with outside of school and school-endorsed texts. Apparent from Rappa and Tang's (2017) work is that the evolving ways in which schooling is operationalised and organised, from a learner's viewpoint, is not something that stands independent of the connections made across in-school and out-of-school contexts. The situational reflexivity of learners and teachers in holistically connecting their contexts with broader or more macro-level contexts provides forms of reflexivity crucial to evolve schooling in ways that encompass holistic learning and other related drivers of 21CC.

The fundamentality of reflexivity in connecting the contexts through which schooling evolves is likewise found in formal classroom teaching. Choo et al.'s (2020) work shows how some disciplinary subjects (primarily those in the Humanities), more than others, engage learners in the "ethical-philosophical" and multi-perspectival consideration of issues that characterise 21CC development (pp. 56–57), with this being the case both in a Singapore and a United States (US) school. Of importance here is the capacity teachers seem to have to negate supposed subject disciplinary bounds for the inculcation of 21CCs. The teachers' articulation that teaching these competencies comes up against Mathematics and Science assessment norms (Choo et al., 2020, p. 57) point to their acute awareness that any tension felt in respect of 21CC inculcation in Mathematics and Science reside in assessment norms more than in the subjects themselves. What the teachers have demonstrated is the capacity to reflexively stand apart from their subjects and their subjects' assessment norms to connect several contexts, i.e., the context of pre-existing understandings of these assessment norms, the context of what teaching 21CCs engenders and the context of a non-congruence between teaching for 21CCs and teaching for subject assessment norms.

In the domain of teacher PD, the role of reflexivity in the evolution of schooling is demonstrated when an international school setting in Hong Kong becomes, for some CL teachers, a context for speaking up and expressing themselves and for other CL teachers, of the reinforcement of an identity that restrained rather than expanded their influence on Western colleagues (Lai et al., 2016). Even as the same context shaped different forms of agency in the CL teachers, both groups of CL teachers have, in essence, exercised reflexivity in stepping back from and becoming conscious of the Asian ethnic-heritage virtues and values they are intuitively accustomed to, to detect potential tensions between these and the demands of their present professional context.

Each of these examples suggest that an ecological perspective of the contexts of schooling is not just about policy and policy implementation in a top-down, linear fashion. Schools operate as systems of interconnected parts, with possibilities for human agency, enacted often through a level of reflexivity, located at multiple levels of the school ecosystem. An ecological perspective to promote alignment between research, policy and practice that also considers the reflexivity of human actors would help ensure policy grounding in teachers' work and the everyday classroom experiences of teachers and learners, while also being aware of other drivers of educational change.

5.2 Influence of contexts on schooling: Policy/practice implication

At the heart of the examples above is the importance of reflexivity in evolving (or maintaining) ways of schooling in response to competing factors at various levels, e.g., at the level of texts that are school-endorsed but may be less accessible to learners than other sources of knowledge (Rappa & Tang, 2017), at the level of mismatches between societal values and school policies (Ashley, 2010), between teaching 21CCs and subject assessment norms (Choo et al., 2020) and between long-held values and demands of the present professional context (Lai et al., 2016). The last cannot be excluded because it is linked to the organisation of school structures and cultures, hence, schooling. These examples have shown how the evolution of schooling can occur at the level of learners, school leadership, and disciplinary subject and PD practices, reinforcing a "constant need to align top-down policy intent with bottom-up contextualised school policies" (Ho et al., 2019, p. 5).

There are other ways in which the evolution of schooling is mirrored in both Singapore's policy initiatives and the type of mindset shifts called for by recent large-scale world events that have effects felt by practically every human individual on the planet. MOE's (2020) Learn for Life initiative, as its name suggests, has mapped out learning as occurring across the lifespan, beyond the boundaries of school grounds and the conventional schooling years, which itself signals the evolution already of what has been traditionally defined as schooling. Qualities targeted in the Learn for Life initiative like resilience, adaptability, a global outlook and being comfortable with the unknown (Ong, 2018) approximate contexts of "contradictions, ambivalence…and…not-knowing" (Eschenbacher & Fleming, 2020, p. 657). These are contexts evoked by disorienting events such as Covid-19 that push people to re-make their perspectives and experiences about employability, self-transformation, self-fulfillment, lifelong education and the promotion of "more just and caring societies" (Eschenbacher & Fleming, 2020, p. 669).

In both renderings therefore, from policy and scholarship, a commonality holds that present times call for more than what can be understood from the past and what can be foreseen/imagined of the future—they call for an adaptation of past and imagined ways to the circumstantial demands of the present (Emirbayer & Mische, 1998). Matched against Bronfenbrenner's model, these connections may be equally realised at the microsystemic level of the learner (engaged in project completion), at the mesosystemic level of teachers (in their views of 21CC teaching and assessment norms) and at the macrosystemic and exosystemic level of school decision-makers (engaged in fee-charging considerations given socio-politically instituted values). Fundamental to these, as shown, is reflexivity—the capacity to stand apart from contexts (pre-existing and projected systems, factors and conditions) and (re-)examine them for better sense-making. Reflexivity has been advocated as essential for navigating a VUCA world (Stein, 2021) and is closely intertwined with one's sense of "(self-) regulation, (self-) control and awareness" (Zienkowski, 2017, p. 2), including an awareness of when one may be (unintentionally) complicit in perpetuating less than desirable structures and conditions (Stein, 2021). These are crucial for cultivating a "cosmopolitan orientation to the world" or a "cosmopolitan consciousness" (Choo, 2021b, pp. 1718).

Reflexivity is one way to better understand and manage education reforms, which, in their rollout, often bear out persistent, systemic tensions. A holistic, ecological understanding of the system to resolve systemic tensions, if deemed relevant, would also call for a reflexivity to first stand apart from various contexts, such as societal beliefs and values, teachers' work and classroom experiences, to see how interactions of these at different levels of schooling contribute to the tensions seen and experienced. Possible questions for consideration to trigger this reflexivity in policy and practice discourses could be ones that examine how facets of systems and organisations (including procedures, policies and personnel) might facilitate or hinder agency to resolve problems of practice (Hinnant-Crawford, 2020). It would seem reasonable thus for policy, in evolving systemic improvements, to be informed directly by the everyday practices and situational responses of school stakeholders such as those depicted in Section 5.1. There is a value, in turn, in recognising and explicitly building in the notion of reflexivity in policy and practice discourses. A recognition as such lends a concrete sense to what is at work when schooling systems are thought of as ecological in their diffusion of innovations (Chua et al., 2019) or when an ecological inter-relation of contexts and agency is referred to (Costall, 2000; Biesta & Tedder, 2006, 2007). Systems and contexts (those of schooling and otherwise) are ecological because they are continuously evolving based on the reflexivity of human actors that constitute and manifest the systems/contexts, which is why contexts and agency are necessarily inter-related (Wertsch, 1994). If, in navigating the VUCA world, reflexivity supports the "open-ended pedagogies" (Stein, 2021, p. 489) of addressing the unknown, and for knowing "how to know, be, sense, and relate otherwise" from what is "naturalised" (p. 483), which are goals essentialised in MOE's (2020) Learn for Life initiative (as adaptivity, mindset shifts, etc.), it becomes important to recognise in policy discourses that the evolving ways of schooling are grounded, at some level, on stakeholder reflexivity.

6. What does a critical understanding of contexts and agency "do" for education?

The various dimensions, motivations, interactions, contributions and operations of contexts and agency foregrounded the tensions between primarily two sets of discourses. One set is constructed around order and stability, in the face of anticipated threats and imperatives from

such contexts as economic and technological drivers of change, political instability around the world, climate change disruptions, social media influences, the influence of 'Western' values and the general VUCA of current social conditions. Here emphasised is accountability and the desire for pre-ordained outcomes to ensure all learners can meet these challenges. Biesta (2019) has referred to this as “a discourse of panic about educational quality, which seems to drive an insatiable need for improvement, geared towards ever narrower definitions of what counts *as* education and what counts *in* education” (p. 658, italics in original). Another set of discourses is constructed around the call for curriculum and pedagogy that requires a less centralised or prescriptive approach, such as the focus on joy of learning, personalised learning, inquiry-based learning (IBL), formative assessment, innovation, entrepreneurialism and creative thinking.

The two sets of discourses noted above often result in mixed messaging, putting teachers in a "double bind" that causes a great deal of uncertainty and anxiety (Baildon & Smith, 2009, pp. 418–419). Stakeholders, especially teachers and learners, struggle with trying to balance more authentic and extended forms of inquiry-based learning with covering curriculum content and ensuring learners pass examinations, teaching critical thinking around public issues while staying within out-of-bound markers or doing formative assessment with 40 learners in each class they teach. Nevertheless, teachers and learners do exercise agency to adopt more hybridised, blended or middle-path approaches that mediate and harmonise varied contexts in educational practice, e.g., by seeing various approaches as lying on a continuum rather than being diametrically opposed. To address the question then of what a critical understanding of contexts and agency does for education is to lay out a set of principles that teachers, learners and other education stakeholders may potentially draw upon as a way to manage conflicting demands and tensions.

Principle 1: Identify the contextual factors and tensions that create competing educational priorities and that challenge the implementation of new initiatives in the education system.

Sections 2 and 3 demonstrate the constant, dynamic interaction of multiple contexts (microsystemic, macrosystemic, exosystemic, etc.)

around education and its players (teachers, learners, parents, etc.) (Bronfenbrenner, 1974; Bronfenbrenner & Morris, 1998). Fundamental to these contexts are values and belief systems expressed through discourses and social practices (Foucault, 1980; Wells, 1999; Abowitz & Harnish, 2006; Fairclough, 2010; Lefstein et al., 2020) instrumental to developing human actors' identities and their communities. Values and belief systems also shape individual and collective capacities to think about and act upon their contexts (social, cultural, political) through their participation in relevant discourses and social practices (IEA model; Torney-Purta et al., 2001).

A multiplicity of human actors, contexts and discourses means tensions between competing needs and demands for stakeholders to manage (Ng, 2020). For example, education reforms on content and examination cutbacks at the macrosystemic and exosystemic levels are communicated through discourses of new policies and alternative educational practices in response to a perceived set of ever-changing demands arising from global, national and socio-political contextual shifts (Koh, 2004; Goh & Gopinathan, 2008; Gopinathan, 2015; Ho & Koh 2018; Kwek et al., 2020). However, these remain at odds, at the microsystemic level, with teaching and learning discourses focused on examinations and school grades (J. Tan, 2009, 2022; Hogan et al., 2013; Deng & Gopinathan, 2016; Davie, 2017; Zhao, 2017; Kwek, 2018). Whilst teachers and learners often bear the brunt of managing tensions arising from competing discourses, having to balance high-stakes assessments alongside calls for more holistic forms of education and learning, there may be value in thinking of how these tensions from conflicting contexts might be managed through a policy or curricular lens.

In preparing learners to reconcile the tensions and dilemmas of today, the OECD (2018, p. 5) stresses the need to learn to "think and act in a more integrated way, taking into account the interconnections and inter-relations between contradictory or incompatible ideas, logics and positions, from both short- and long-term perspectives". This translates into "learn[ing] to be system thinkers" (OECD, 2018, p. 5). System thinking approximates policy-level thinking that similarly involves an understanding of the multiple, interacting micro, macro, exo and mesosystemic contexts (and their discourses) that generate various

tensions and dilemmas. Since education is a complex ecosystem with many stakeholders, systems thinking requires an accurate identification of the persistent discourses of policy and practice that challenge large-scale shifts in practice contexts that are pushed for in policy implementation. This identification is the type of analytical capacity necessary to align policy goals with other elements in the education ecosystem (Kwek et al., 2020). The possibility of building such a capacity is strengthened by clearly identifying the main drivers of educational policy and practice that operate through different discourses, contexts and stakeholder desires; mapping the values, goals and agendas that each emphasise and identifying points of potential conflict or tension that may arise in terms of policy, practice and learning.

Promoting discourses that engage stakeholders in questions about the aims of education that arise from different contextual influences, rather than in the "how" for pre-determined aims, can give stakeholders greater agency in shaping education. This also means the importance of involving stakeholders at different levels in an authentic identification and articulation of contextual awareness, contextual tensions and the demands that these place on education. As Ng (2017) suggests, the paradoxes or tensions created by the competing and often conflicting demands that arise in different contexts can be leveraged productively. They might, for example, require policy discourses to shift from notions of performativity, effectiveness, efficiency and what "works" toward a greater focus on learning and the purposes and meaning of education—a point not lost on the OECD's (2018) take on advancing learner agency for the future of education. According to Biesta (2019, p. 659), "the real question is not whether particular educational processes are effective and efficient, but what they are effective and efficient for" (p. 659). Addressing this real question seems to require the important first step of encouraging and facilitating stakeholder identification of contextual factors and tensions that create competing educational priorities and challenge the implementation of new initiatives in the education system.

Principle 2: Grant greater flexibility in the curriculum for teachers and learners to expand and (re-)imagine their roles and identities, to help them exercise greater agency to explore and manage contextual tensions evoked in teaching and learning.

Giving teachers and learners a greater opportunity to examine the different contexts of contemporary life and education and the demands these make on them (as teachers, learners and societal members) can also foreground the myriad aims of education as well as the kinds of roles and identities teachers and learners can (re-)imagine within and beyond the curriculum. In short, opportunities for examining contexts gives teachers and learners a greater sense of agency in negotiating curriculum and classroom practice in ways that more meaningfully help them understand the world they live in and help them develop solutions to address the challenges they currently face or are likely to face in their futures.

In Section 4, we have outlined some of the ways teachers and learners are examining the contexts they live in through open, interpretive, flexible and expansive means to (re-)imagine the roles people can play in the world. Different contextual influences and possibilities for different forms of agency are exemplified. A mindfulness curriculum, for instance, addressed the stressful contexts many young people presently live in while giving them forms of agency that might help them manage those stresses (Khng, 2018). For learners, emotive lines of questioning are found to be useful in stimulating thinking about what it means to be a global citizen, concerned about, empathetic towards and responsible for those who have not necessarily benefited from globalisation (Choo, 2021a). For teachers, the adoption of a non-binary approach to teaching about social issues is found to be useful when contexts of social conformity and critical thinking goals run up against one another (Yang, 2021). These examples demonstrate how, through teacher and learner negotiation of prescribed curriculum, contexts influencing curriculum can stimulate hybrid pedagogies and multiple pathways (Lee et al., 2016, MOE, 2021d) to address some of the contextual tensions that impact teaching and learning. While teachers and learners do exercise agency to negotiate prescribed curriculum, it is also possible that curriculum can be designed and implemented in ways that more productively “invite” these negotiations to enable

the kinds of open spaces and learner pathways that more deeply or broadly explore different roles and identities as well as possible futures teachers and learners may hold for themselves and for their societies.

The transformative engagements with real-world issues and explorations of learner agency that can be encouraged with curricular flexibility for examining and (re-)imagining roles and identities is aligned with systemic needs. It is aligned with desired outcomes of the Singapore education system for its 21st century: for lifelong learners to be confident, self-directed people who are concerned citizens and active contributors to society (MOE, 2016, 2020, 2021a, 2021b, 2021c). It is aligned also with 21st century, technology-enabled learning (e.g., virtual reality, immersive learning) seen as possibly transformative in creating spaces for an envisioned curricular flexibility that accommodates the expression, (re-)imagination and expansion of roles and identities for teaching and learning. This curricular flexibility is akin to a set of curriculum design principles proposed by the OECD (2018) for its Future of Education agenda, to advance changes at an eco-systemic level for sustainability in the face of the multiple crises that besiege humanity and the planet today. The OECD language refers to student agency and choice in curriculum concept, content and topic design, and teacher agency and flexibility in instructional design. A discourse that communicates greater flexibility and autonomy for varied interpretations and implementations of curriculum and classroom practice would be helpful thus in encouraging teachers and learners to (re-)imagine situations, and their roles and identities and to expand their agency for determining actions (Biesta, 2019), and navigating contextual demands and tensions.

Principle 3: Encourage reflexivity, anticipation and responsiveness among all stakeholders to organise and operationalise schooling in ways that support the desired goals of education reforms.

Section 5 sought to demonstrate that human reflexivity cannot be factored out in advancing ecological understandings of schooling. Human reflexivity is a response to the tensions of the everyday demands of schooling and its broader contexts, including education reforms, societal norms and various factors that influence education policy and practice. Examples given to illustrate this reflexivity include:

Mathematics and Science teachers who seem reasonably capable of standing apart from the contexts of their subject discipline and assessment norms to respond to the latter as restricting the global-ethical engagement seemingly more accessible from other subject domains (Choo et al., 2020), the decision of private schools to take on the perspective of broader societal values, and to consequently implement exceptions to their fee-paying norms (Ashley, 2010) and the decisions of CL teachers in an international school to project professional identities less intuitive to their pre-held values and beliefs, but that would better serve them in present professional contexts (Lai et al., 2016).

All of these capacities and decisions would have called first for a measure of reflexivity to stand apart from normative school and community cultures, and consequently, to respond with specific schooling practices and viewpoints in anticipation of how these practices and viewpoints can help improve conditions. In sum, they require shifts away from de facto ways of perceiving, thinking and problem-solving to imagine and envision new possibilities for educational practice. The anticipatory and responsive stance that comes with reflexivity are aligned with the future orientation agenda of GERA. GERA clearly sees the need to support research strands on the futurity of learning, teaching and schooling in anticipation of these as a response to critical problems of practice and policy. Possible ways of drawing out the human factor of reflexivity, anticipation and responsiveness can include considering and confronting the implicit motivations, presumptions and desires that direct courses of thinking and action (Stein, 2021), determining to the fullest extent possible and at whose expense the impact these forms of thinking and action as well as their underlying causes have in both the short and long term (e.g., adding to or reducing work pressures, advancing or having unintended consequences on stakeholders' future pathways and well-being, reinforcing or diluting the emergence of potential systemic tensions, contributing to or reducing unsustainable conditions) (Stein, 2021; Landy et al., 2022).

The above point on the dynamics of human reflexivity, anticipation and responsiveness is an important one, with implications beyond school settings. Increasingly, stakeholders in Singapore and elsewhere—not

necessarily just teachers and school leaders, but other key decision-makers within education and its inter-related systems—are called into challenging positions. These positions can, in turn, impact the school and learner outcomes that are valued. The said positions are challenging because they are ones that might require systems and the people who run them to "conceptualize bold changes" (Sutoris, 2022, n.p.) that could well upend some of the ideologies, values and goals (e.g., human capital development, technological solutions, population growth) on which present global economic frameworks and ecosystem services (implicating health, wealth and human well-being) are contingent (Bradshaw et al., 2021; Sutoris, 2022). Sutoris (2022, n.p.) writes, for example, about the reality of the absence of any "single tech solution" that can solve the scale of an imminent climate crisis, even as key decision players worry more about whether technology is advancing fast enough to avert environmental catastrophes than the key problem of whether technology is indeed the proper solution. Bradshaw et al. (2021, p. 41) write also of how "[s]topping biodiversity loss is nowhere near the top of any country's priorities, trailing far behind other concerns such as employment, economic growth, or currency stability". Thus, in any solution to the problems climate scholars point out about present ways of dealing with the climate crisis, what is seemingly important for decision-makers is their willingness to suspend a default turn to climate solutions that are aimed more at keeping intact present systems that, by their very existence and the way they operate, have perpetuated the crisis in the first instance. What is called for, in other words, is a reflexivity to stand apart from de facto systems and to respond with solutions that can be anticipated to avert the trappings of systems whose characteristics can well be part of the problem.

Reflexivity, anticipation and responsiveness are therefore important qualities to have and encourage. At the school level, they enable learners, teachers and decision-makers to connect across contexts (past, projected, present) to promote continuously relevant ways of schooling and learning. Beyond schooling, their importance continues as a set of human attributes that help learners, in their role as present and future societal members, to operate and exercise the needed agency to make decisions within an increasingly challenging VUCA world with a complex network of uneasily dissectible causes

and effects that account for the present crises the world is facing. Local educational policies (e.g., MOE's Learn for Life initiative) and international scholarship (e.g., Eschenbacher & Fleming, 2020) recognise alike an era where transformative, mindset shifts (Dirkx et al., 2006) are increasingly crucial to help learners and teachers deal with the ambivalence, contradictions and unpredictability of the future. Facilitated by reflexivity, anticipation and responsiveness, these transformative mindset shifts are especially needed in the face of persistent systemic tensions that Singapore education reforms run up against, where these reforms seek precisely to cultivate new ways of thinking and acting to address the demands of a VUCA world, and challenges of learning and working in a global knowledge economy. Fundamental to realising the goals of education reforms within schooling and global ecologies is thus an extent of human reflexivity, anticipation and responsiveness. It remains for education policy discourses to explicitly encourage these human qualities (in schooling and at various societal levels in which schooling is situated) as part of the equation in formulating education reforms and initiatives.

To wrap up Section 6, we recognise that the principles proposed above, though necessarily challenging to engage with, may not be entirely new to MOE, to the extent that MOE would have been guided by some notion of them—even if not often spelt out—in the course of educational/school planning work. In MOE-school-NIE committees set up to discuss different aspects of educational work, for example, curricular work, there would surely have been an intention to adopt Principle 1, i.e., to identify contextual tensions that create competing educational priorities and that challenge the implementation of new initiatives in the system. However, it might well be the case that the flexibility and agency required by stakeholders to manage contextual tensions in teaching and learning (Principle 2), and the reflexivity, anticipation and responsiveness in schooling contexts to help support reform goals (Principle 3), remain perceived as something of a tall order at some levels of the system. This would explain MOE's continued awareness of and intention to plug gaps and challenges to programme and policy improvements.

Whether GERA contextualises these as curriculum, professional development or policy interventions in specific populations, what is

noteworthy is that the research strands and areas of GERA seek, in common, to develop particular human attributes that the broad terms of 21CC and future teaching competencies hope to encapsulate. Likewise, Principles 2 and 3 in this paper refer to human attributes to appropriately discern and decide what teaching, learning and schooling situations require. Insofar as some of the work that would get education stakeholders closer to embracing Principles 2 and 3 might require inter-ministry efforts, e.g., when it comes to supporting the mental health needs of education stakeholders, we recognise that there likely are inter-ministry coordination around priority areas for cross-disciplinary research. It is not within the scope of this paper, however, to delve into collaborative efforts between Ministries and so, we are not able to provide specific recommendations on what needs to be done in these inter-ministry efforts. Nonetheless, we note that in many respects, promoting the spirit of Principles 2 and 3 boils down to a level of autonomy akin to the spirit embraced in autonomy-supportive classroom strategies (Section 5). Perhaps more importantly, it boils down to a level of comfort with this autonomy when it is available, not to mention skills in using the autonomy to discern and to make decisions around curriculum interpretation and enactment, as well as other forms of educational practice. Granted, getting some stakeholders comfortable with said autonomy may be even harder than making it available to them, even if accountability and monitoring systems may be rethought to facilitate this availability. However, cultivating a reasonable level of comfort with autonomy in decision-making that aligns with such human qualities of exercising flexibility and reflexivity is not conceivably impossible.

In reference to Principle 2, in the same way that curriculum can be enacted and designed to “invite” negotiations that draw out the flexibility and agency that help teachers and learners manage contextual tensions, teacher education can proceed along similar lines. For instance, teacher training programmes can include a component that encourages teacher trainees, if not also in-service teaches, to raise, consider and discuss possibly competing viewpoints of existing education policy and curriculum documents and imagine how differing viewpoints may envision/engender differing classroom practices and curriculum enactments. Such exercises are helpful in getting teachers comfortable with exercising autonomy, even at the trainee stage, in

thinking flexibly and in a genuinely agentic way about what various policies can mean for changes at the school and/or classroom level.

In reference to Principle 3, in the same way that the literature reviewed has shown education stakeholders in various places, under various conditions, to be capable of reflexivity, i.e., to stand apart from normative viewpoints (of their subject areas, their professional identities and other societal norms) to anticipate and enact more helpful ways of responding, education stakeholders in training can be attuned to feel comfortable exercising this autonomy of embracing reflexivity. Here, we imagine scenario-based training, possibly facilitated and supported by Artificial Intelligence (AI), to be of some help. Already in the field of business, there are reports of technology-enabled "immersive learning" construed as spaces to prepare people for leadership roles in a VUCA world (Johansen & Euchner, 2013, p. 12). Education as a field should not be too far off from embracing this if blended learning and AI are known priorities in this field. The idea is that where clarity becomes increasingly elusive in evolving, dynamic contexts and where decisions have to be made nonetheless, the simulation of various scenarios (or scenario planning) permits a prospective, reflexive take on potential responses to those scenarios before actual decisions get made.

Teachers are the front line of the education system, delivering and mediating aspects of the system in their day-to-day work and learners are encouraged to see teachers as role models. Thus, getting teachers comfortable with exercising forms of autonomy that encourage flexibility, agency, reflexivity, responsiveness and a sense of anticipation to negotiate and navigate curriculum, systems and futures would reasonably be the starting point to building up an educational ecosystem, including learner and policymaker positionings that promote space and autonomy in discernment and decisioning. These forms of autonomy facilitate MOE's continued pursuit of a centralised-decentralised education system that, as Kwek et al. (2020) suggest, can benefit from the analytical capacities needed to address tensions arising from such a pursuit. Efforts to inculcate through pre- and in-service training the means to autonomously consider flexibly and reflexively policies and curriculum, as well as the links between these discourses and curriculum enactments, would help build the said analytical capacities. At the very least, such efforts would

position stakeholders at the ground level with the needed dispositions and capacities to contribute in a genuinely agentic (rather than pre-determined/guided) way to often top-down initiatives of stakeholder engagement.

7. Conclusion

In our review of the literature on contexts of learning and agency, we found that human actors, whether purposively acting individually or collectively in their world, are always located in multiple contexts—both broader and more localised contexts. These contexts influence people's capacity to act, their sense of identity, as well as their sociocultural practices and ways of thinking. Broader contexts, e.g., social institutions and value systems, and more localised/proximal contexts at the community and classroom levels are mutually inter-related. This is represented both in the bioecological model (Bronfenbrenner, 1974) and in the IEA model, where discourses permeate multiple contextual levels (Torney-Purta et al., 2001). Discourses mediate interactions across contexts and between contexts and forms of agency. Contexts and the discourses through which they are communicated can enable and/or constrain human agency, highlighting the importance of analytical capacities to consider the ways in which contexts, discourses and agency interact. While contexts and discourses may constrain human agency, they can also provide pathways and opportunities for individuals and societies to recognise and enact more fulfilling and generative capacities and forms of identity, in order to create educational change and new social realities.

Figure 3 models, from the literature reviewed, the key dimensions in which contexts, discourses and agency interact.

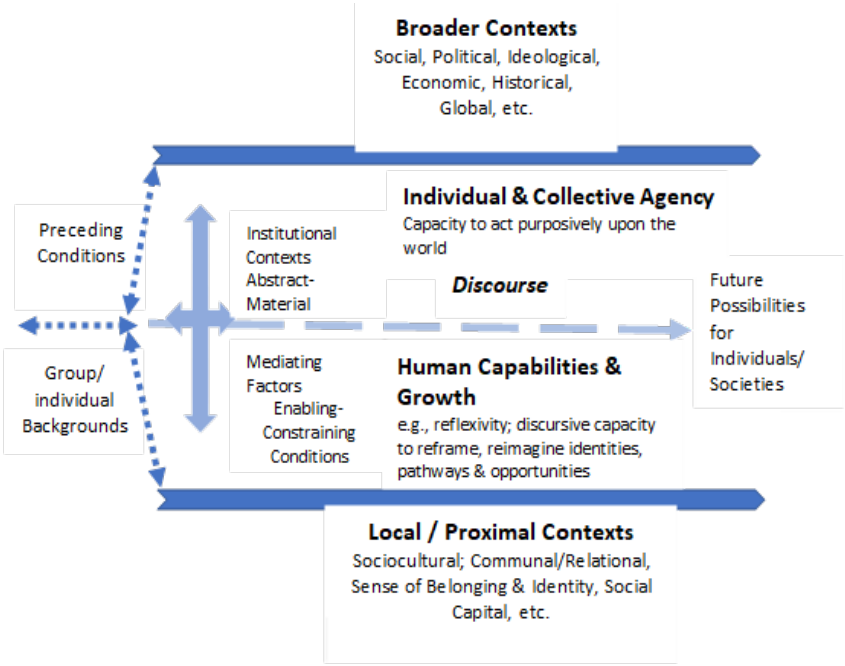

Figure 3. *Interaction of Contexts, Discourses and Agency*

While preceding conditions, broader and proximal contexts shape individuals' or groups' capacities for agency based on their locations in these contexts (socio-economic class, societal status, education access, etc.), agency is not determined by these contexts. Human actors have capacities to (re)produce, reinforce or change their contexts through a reflexive understanding of their contexts and their agency, through the decisions they make and the individual and collective actions they take to enact those decisions. Education plays a significant role in helping individuals and groups understand their contexts, the discourses that structure and shape those contexts and how people can exercise their agency in meaningful and productive ways that benefit their learning, their lives and society.

Table 1 summarises the key principles derived from our review of contexts of learning, what these principles imply for policy and practice and how education discourses can be tapped upon to facilitate the advancement of these principles and their implications.

Principles	Implications	Role of education discourses in advancing principles and their implications
Principle 1: Identify the contextual factors and tensions that create competing educational priorities and that challenge the implementation of new initiatives in the education system.	Obtain understanding of varied types of school and societal contextual characteristics and human factors that make up the ecological network of interdependent components of the education system. Comprehend and articulate how initiatives can create conflicting messages and exert competing demands on past and existing contextual and human factors in ways that constrain classroom practice and curriculum.	Articulate in policy and practice discourses the possible human agentic factors (e.g., teacher and learner risk adversity) that might impact learning and teaching and the societal and cultural contexts (e.g., past and present, local and global) that have shaped or continue to shape these human factors.
Principle 2: Grant greater flexibility in the curriculum for teachers and learners to expand and (re-)imagine their roles and identities, to help them exercise greater agency to explore and manage contextual tensions evoked in teaching and learning.	Recognise that teachers and learners negotiate the curricular and classroom conditions created by macro-level initiatives and contexts in a range of ways that generate new educational possibilities and opportunities. Ensure flexibility in the curriculum for varied (sometimes unexpected) ways of teaching and learning relatable to the diverse identities, roles, agencies and aspirations that arise within multiple, sometimes competing, local, national and global contexts and viewpoints.	Encourage and permit in education policy and practice discourses greater flexibility in interpreting, navigating and shaping policy and curriculum, to help education stakeholders (e.g., teachers and learners) examine existing assumptions about education (e.g., its purposes), consider the implications of different educational pathways (e.g., different curricular or instructional approaches) and (re-)imagine forms of schooling and agency that may better help the navigation of new and emergent social realities.

Principle 3: Encourage reflexivity, anticipation and responsiveness among all stakeholders to organise and operationalise schooling in ways that support the desired goals of education reforms.	Recognise that the tensions that arise from education reforms are often linked to the multiple, interdependent contexts in an education ecology. Recognise that the above tensions can be productive for learners and the system when accompanied by capacities to stand apart from contexts of schooling and its normative operations, to see where these have to be reworked to manage tensions when reforms are introduced. Ways of standing apart include: considering and confronting implicit motivations, presumptions and desires that direct thinking and action; determining to the fullest extent possible the impact these forms of thinking and action, as well as their underlying causes have in the short and long term on various conditions (human conditions and otherwise).	Advance in education policy and practice discourses the importance of reflexivity, anticipation and responsiveness at various levels of the schooling system, to strengthen efforts towards the shifts pursued in education reforms. Reflexivity refers to a willingness and ability to stand apart from and to (re-)examine how various contexts (personal factors, sociocultural and structural influences and pressures) shape our interpretations, sense-making and social practices. Reflexivity entails commitment to changing contexts (as needed) at all levels of the education system to improve educational outcomes for all learners and stakeholders.

Table 1. *Key Principles, Implications and Discourses*

Contexts (of learning, teaching and schooling) are often in tension because they draw together a confluence of historical, social, ideological, economic and local, national and global factors. Competing contexts and their demands pull human actors in opposite directions, e.g., between entrenched assessment systems and pedagogical innovations. Articulating in policy and practice discourses a keen awareness of the types of contextual characteristics (at school and in society) that education initiatives run up against, and the reasons why those tensions exist, helps human actors operating within those contexts better navigate those tensions in productive ways. Although contexts are highly influential, it is important to bear in mind that they are not deterministic. Human actors, as teachers, learners and societal members, are capable of expanding and (re-)imagining their identities and roles beyond socially normed ones, and in ways envisaged by scholarship and practice to be helpful in the development of 21CCs. Permitting,

encouraging and articulating a greater flexibility and autonomy in the way teachers and learners interpret and use the curriculum is crucial in encouraging the (re-)imaginings (of self, others and situations) that build up 21CCs. At the same time, reflexivity, anticipation and responsiveness are fundamental to education reforms. To envision solutions to problems that arise from the inherently ecological nature of schooling and from many contemporary systems, human actors have to reflexively stand apart from the contexts that organise and operationalise systems (schooling and global systems alike), to become acutely aware of these contexts, so as to be able to properly (re-)examine the contexts for better sense-making and action. Such human qualities of flexibility, reflexivity and agency have to be encouraged through education policy, practice and curriculum documents and discourses, supplemented (as likely necessary) by professional development and learning conditions that encourage and build up a sense of autonomy in teachers and learners to flexibly (re-)imagine and envision a multitude of possibilities and responses in a very complex world. Marking an important first step in these efforts are the discourses of such MOE initiatives as Learn for Life that refer to adaptivity and mindset shifts across the lifespan beyond the schooling years.

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References

Abe, S., & Shapiro, S. (2021). Sociolinguistics as a pathway to global citizenship: Critically observing ‘self’ and ‘other’, *Language Awareness*, *30*(4), 355–370.

Abowitz, K. K., & Harnish, J. (2006). Contemporary discourses of citizenship. *Review of Educational Research*, *76*(4), 653–690.

Ahearn, L. M. (2001). Language and agency. A*nnual Review of Anthropology*, *30*, 109–137.

Albon, D., & Hellman, A. (2019). Of routine consideration: 'Civilising children's bodies via food events in Swedish and English early childhood settings. *Ethnography and Education*, *14*(2), 153–169. https://doi.org/10.1080/17457823.2017.1422985

Alviar-Martin, T., & Baildon, M. (2016). Context and curriculum in two global cities: A study of discourses of citizenship in Hong Kong and Singapore. *Education Policy Analysis Archives*, *24*(58). http://dx.doi.org/10.14507/epaa.24.2140

Alviar-Martin, T., & Baildon, M. (2021). Introduction: Desettling conceptions, perceptions, and practices in global citizenship education. In T. Alviar-Martin, & M. Baildon (eds), *Research on global citizenship education in Asia: Conceptions, perceptions, and practice* (pp. 3–22). Charlotte, NC: Information Age Publishing.

Ang, J. (2018, November 1). Skillsfuture initiatives to boost quality of adult education training. The Straits Times. https://www.straitstimes.com/singapore/education/skillsfuture-initiatives-to-increase-quality-of-adult-education-training

Appiah, A. (2019). *The lies that bind: Rethinking identity, creed, country, color, class, culture.* Liveright Publishing Corporation.

Apple, M. (1993). *Official knowledge: Democratic education in a conservative age*. Routledge.

Arnold, L., & Faudree, P. (2019). Language and social justice: Teaching about the "word gap". *American Speech*, *94*(2), 283–301. https://doi.org/10.1215/00031283-7592088

Ashley, L. D. (2010). The use of structuration theory to conceptualize alternative practices in education: the case of private school outreach in India. *British Journal of Sociology of Education*, *31*(3), 337–351. https://www.jstor.org/stable/27802756

Baildon, M., & Alviar-Martin, T. (2018). Transforming social studies teacher education for global citizenship education. In C. Martell (Ed.), *Social studies teacher education: Critical issues and current perspectives* (pp. 77–100). Charlotte, NC: Information Age Publishing.

Baildon, M., & Alviar-Martin, T. (2020). Taming cosmopolitanism: The limits of national and neoliberal civic education in two global cities. *Asia Pacific Journal of Education*, *40*(1), 98–111.

Baildon, M., & Damico, J. S. (2015). Judging the credibility of Internet sources: Developing critical and reflexive readers of complex digital texts. In Parker, W.C. (Ed.), *Social Studies Today: Research and Practice* (pp. 246-253). New York: Routledge.

Baildon, M., & Sim, J. B.-Y. (2009). Notions of criticality: Singaporean teachers' perspectives of critical thinking in social studies. *Cambridge Journal of Education*, *39*(4), 407–422. 10.1080/03057640903352481

Bakhtin, M. M. (1979). *Estitika slovesnogotvorchestva [The esthetics of verbal creativity]*. Moscow: Iskusstvo.

Ball, Stephen J. (2006). *Education policy and social class*. London & New York: Routledge.

Ball, S. J. (2013). *Focault, power, and education*. New York & London: Routledge.

Banks, J. A., Au, K. H., Ball, A. F., Bell, P., Gordon, E. W., Gutiérrez, K. D., Heath, S. B., Lee, C. D., Lee, Y., Mahiri, J., Nasir, N. S., Valdés, G., & Zhou, M. (2007). Learning in and out of school in diverse environments: life-long, life-wide, life-deep. Seattle: The LIFE Center (The Learning in Informal and Formal Environments Center) and the Center for Multicultural Education, University of Washington. https://education.uw.edu/sites/default/files/cme/docs/LEARNING%20LIFE%20REPORT.pdf

Barr, M. D. (2000). Lee Kuan Yew and the “Asian values” debate. *Asian Studies Review*, *24*(3), pp. 309–334.

Biesta, G. (2019). What kind of society does the school need? Redefining the democratic work of education in impatient times. *Studies in Philosophy and Education*, *38*, 657–668. https://doi.org/10.1007/s11217-019-09675-y

Biesta, G., & Tedder, M. (2006, February). How is agency possible? Towards an ecological understanding of agency-as-achievement. Working Paper No. 5. Learning Lives: Learning, Identity and Agency in the Life Course.

Biesta, G., & Tedder, M. (2007). Agency and learning in the lifecourse: towards an ecological perspective. S*tudies in the Education of Adults*, *39*(2), 132–149.

Bourdieu, P. (1984). *Distinction: A social critique of the judgement of taste*. Cambridge, Massachusetts: Harvard University Press.

Bourdieu, P. (1990). *The logic of practice*. Cambridge: Polity Press.

Bourdieu, P. (2005). Habitus. In J. Hillier & E. Rooksby (Eds.), Habitus: *A sense of place* (pp. 43–49). Aldershot: Ashgate.

Bowles, S., & Gintis, H. (1976). *Schooling in capitalist America: Educational reform and the contradictions of economic life*. New York, NY: Routledge & Kegan.

Bradshaw, C. J. A., Ehrlich, P. R., Beattie, A., Ceballos, G., Crist, E., Diamond, J., Dirzo, R., Ehrlich, A. H., Harte, J., Harte, M. E., Pyke, G., Raven, P. H., Ripple, W. J., Saltré, F., Turnbull, C., Wackernagel, M., & Blumstein, D. T. (2021). Underestimating the challenges of avoiding a ghastly future. *Frontiers in Conservation Science*, *1*(615419), 1–10. 10.3389/fcosc.2020.615419

Bronfenbrenner, U. (1974). Developmental research, public policy, and the ecology of childhood. *Child Development*, *45*(1), 1–5. https://doi.org/10.2307/1127743

Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. In W. Damon & R. Lerner (Eds.). *Handbook of Child Psychology* (Vol. 1, pp. 993–1028). New York: John Wiley & Sons.

Bruner, J. (1990). *Acts of meaning*. Cambridge: Harvard University Press.

Burdett, N., & O'Donnell, S. (2016). Lost in translation? The challenges of educational policy borrowing. *Educational Research*, *58*(2), 113–120, 10.1080/00131881.2016.1168678

Chee, Y. S., Mehrotra, S., & Ong, J. C. (2015). Professional development for scaling pedagogical innovation in the context of game-based learning: Teacher identity as cornerstone in "shifting" practice, *Asia-Pacific Journal of Teacher Education*, *43*(5), 423–437.

Cohen, I. J. (2000). Theories of action and praxis. In B. S. Turner (Ed), *The Blackwell Companion to Social Theory* (pp. 73–111), Blackwell Publishers.

Collaborative for Academic, Social, and Emotional Learning (CASEL). (2018). Social and emotional learning and positive behavioral interventions and supports. Chicago, IL: CASEL. https://nemtss.unl.edu/wp-content/uploads/2020/04/Pyramid-SEL-PBIS-Crosswalk.pdf

Costes-Onishi, P., Baildon, M., & Aghazadeh, S. (2020). Moving inquiry-based learning forward: A metasynthesis on inquiry-based classroom practices for pedagogical innovation and school improvement in the humanities and arts. *Asia Pacific Journal of Education*, *40*(4), 552–575.

Chiong, C., & Lim, L. (2022). Seeing families as policy actors: Exploring higher-order thinking reforms in Singapore through low-income families' perspectives. J*ournal of Education Policy*, *37*(2), 205–225.

Cherryholmes, C. H., & Wickersham, E. (2002). Chapter 3: What to do? Problematic: Reading curriculum visions. *Counterpoints*, *151*, 114–129.

Choo, S. S., Alsagoff, L., & Chan, C. M. L. (2020). *Education for twenty-first century global capacities: A comparative case-study of two schools in Singapore and the United States*. OER Final Report Series, Office of Education Research, National Institute of Education, Singapore.

Choo, S. S. (2021a). Cultivating cosmopolitan dispositions through literature: Examples from Singapore schools. In T. Alviar-Martin & M. Baildon (Eds.), *Research on global citizenship education in Asia: Conceptions, perceptions, and practice* (pp. 161–179). Charlotte, NC: Information Age Publishing.

Choo, S. S. (2021b). *Teaching ethics through literature: The significance of ethical criticism in a global age*. London: Routledge.

Chua, P. M.-H., Toh, Y., He, S., Jamaludin, A., & Hung, D. (2019). Centralised decentralisation in Singapore education policymaking. In D. Hung, S.-S. Lee, Y. Toh, A. Jamaluddin & L. Wu (Eds.), *Innovations in educational change: Cultivating ecologies for schools* (pp. 3–21). Singapore: Springer.

Cornbleth, C. (2001). Climates of constraint/restraint of teachers and teaching. In. W. B. Stanley (Ed.), C*ritical issues in social studies research for the 21st century* (pp. 73–95). Greenwich, CT: Information Age Publishing.

Costall, A. (2000). James Gibson and the ecology of agency. *Communication & Cognition*, *33*(1), 23–32.

Curriculum Planning and Development Division. (2019). *Literature in English syllabus 2010: Primary and secondary*. Singapore: Ministry of Education.

Davie, S. (2017, August 20). Singapore students suffer from high levels of anxiety: Study. The Straits Times (Online). http://www.straitstimes.com/singapore/education/spore-students-suffer-from-high-levels-of-anxiety-study

De Roock, R. S., & Baildon, M. (2019). MySkillsFuture for students, STEM learning, and the design of neoliberal citizenship in Singapore, *Cognition and Instruction*, *37*(3), 285–305. 10.1080/07370008.2019.1624545

Deng, Z., & Gopinathan, S. (2016). PISA and high-performing education systems: Explaining Singapore's education success. *Comparative Education*, *52*(4), 449–472.

Deng, Z., & Luke, A. (2008). Subject matter: defining and theorizing school subjects. In F. M. Connelly, M. F. He & J. Phillion (Eds.), T*he Sage handbook of curriculum and instruction* (pp. 66–87). Thousand Oaks, CA: Sage Publications.

Dewey, J. (1916). *Democracy and education*. New York, NY: Macmillan.

Dewey, J. (1938). *Experience and education.* New York, NY: Macmillan.

Dirkx, J. M., Mezirow, J., & Cranton, P. (2006). Musings and reflections on the meaning, context, and process of transformative learning: A dialogue between John M. Dirkx and Jack Mezirow. J*ournal of Transformative Education*, *4*(2), 123–139.

Dudar, L., Scott, S., & Scott, D. (2017). A*ccelerating change in schools: Leading rapid, successful, and complex change initiatives (Advances in Educational Administration*, vol. 27) [First edition.]. Bingley, UK: Emerald Publishing Limited.

Early Childhood Development Agency. (n.d.). KidSTART programme. https://www.ecda.gov.sg/Parents/Pages/KidSTART.aspx

Elder-Vass, D. (2007). Reconciling Archer and Bourdieu in an emergentist theory of action. *Sociological Theory*, *25*, 325–346. http://dx.doi.org/10.1111/soth.2007.25.issue-4

Ellis, A. K. (2004). *Exemplars of curriculum theory*. Larchmont, NY: Eye on Education.

Emirbayer, M., & Mische, A. (1998). What is agency? *The American Journal of Sociology*, *103*(4), 962–1023. https://www.jstor.org/stable/10.1086/231294

Eschenbacher, S., & Fleming, T. (2020). Transformative dimensions of lifelong learning: Mezirow, Rorty and COVID-19. *International Review of Education*, *66*, 657–672.

Fairclough, N. (2006). *Language and globalization*. New York: Routledge.

Fairclough, N. (2010). *Critical discourse analysis: The critical study of language* (2nd ed.). Harlow, UK: Pearson Education.

Foucault, M. (1980). *Power/knowledge.* New York: Random House.

Foucault, M. (1983). Discourse and truth: the problematization of Parrhesia: 6 lectures given by Michael Foucault at the University of California at Berkeley, Oct–Nov. 1983. University of California, Berkeley. http://foucault.info/documents/parrhesia/

Fullan, M., & Quinn, J. (2015). *Coherence: The right drivers for action in schools, districts, and systems*. Thousand Oaks, CA: Corwin.

Fullan, M. (2021). *The right drivers for whole system success*. https://michaelfullan.ca/3460-2/

Francis, B., Archer, L., Hodgen, J., Pepper, D., Taylor, Becky, & Travers, M.-C. (2017). Exploring the relative lack of impact of research on 'ability grouping' in England: A discourse analytic account. *Cambridge Journal of Education*, *47*(1), 1–17. 10.1080/0305764X.2015.1093095

Garrett, P. (2013). Meanings of 'globalization': East and West. In Nikolas Coupland (Ed.), T*he handbook of language and globalization* (pp. 428–447). West Sussex, UK: Wiley-Blackwell.

Goh, C. B., & Gopinathan, S. (2008). The development of education in Singapore since 1965. In S.K. Lee, C. B. Goh, B. Fredriksen & J.P. Tan (Eds.), *Toward a better future: Education and training for economic development in Singapore since 1965* (pp. pp. 12–38). Washington, DC: World Bank.

Gopinathan, S. (2015). *Singapore chronicles: Education*. Singapore: Straits Times Press.

Gopinathan, S., & Mardiana, A. B. (2013). Globalization, the state and curriculum reform. In Z. Deng, Lee, C. K.-E. Lim & S. Gopinathan (Eds.), *Globalization and the Singapore classroom: From policy to classroom* (pp. 15–32). Singapore: Springer.

Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. Berkeley & Los Angeles: University of California Press.

Giroux, H. A. (1990). Reading texts, literacy, and textual authority. T*he Journal of Education*, *172*(1), 84–103.

Giroux, H. A. (2004). Critical pedagogy and the postmodern/modern divide: Towards a pedagogy of democratization. *Teacher Education Quarterly*, *31*(1), 31–47.

Glatthorn, A. A., Boschee, F., Whitehead, B. M., & Boschee, B. F. (2019). *Curriculum leadership: Strategies for development and implementation* (5th edn.). London: Sage Publications.

Gutentag, T., Orner, A., & Asterhan, C. S. C. (2022). Classroom discussion practices in online remote secondary school settings during COVID-19. *Computers in Human Behavior*, *132*(107250), 1–11. 10.1016/j.chb.2022.107250

Guy-Evans, O. (2020, November 9). *Bronfenbrenner's ecological systems theory*. Simply Psychology. https://www.simplypsychology.org/Bronfenbrenner.html

Hannerz, U. (1991). Scenarios for peripheral cultures. In A. King (Ed.), *Culture, globalization and the world system* (pp. 107–128). Basingstoke: Macmillan.

Heng, T. T., & Song, L. (2020). A proposed framework for understanding educational change and transfer: Insights from Singapore teachers' perceptions of differentiated instruction. *Journal of Educational Change*, *21*, 595–622. https://doi.org/10.1007/s10833-020-09377-0

Hinnant-Crawford, B.N. (2020). *Improvement science in education: A primer.* Myers Education Press.

Ho, J., Salleh, H., & Chua, P. H. (2019). *Local evidence synthesis on school leadership*. https://repository.nie.edu.sg/bitstream/10497/21348/1/LES_Volume%202.pdf

Ho, L.-C., & Barton, K. C. (2022). Critical harmony: A goal for deliberative civic education. *Journal of Moral Education*, *51*(2), 276–291. https://doi.org/10.1080/03057240.2020.1847053

Ho, J-M., & Koh, T-S. (2018). Historical development of educational leadership in Singapore. In T. S. Koh & D. Hung (Eds.), *Leadership for change: The Singapore schools' experience*. Singapore: World Scientific.

Hogan, D., Towndrow, P., Kwek, D., & Chan, M. (2013). Core 2 final report. National Institute of Education.

Holland, D., Lachiotte, W., Jr., Skinner, D., & Cain, C. (1998). I*dentity and agency in cultural worlds*. Cambridge: Harvard University Press

Hairon, S., & Dimmock, C. (2012). Singapore schools and professional learning communities: Teacher professional development and school leadership in an Asian hierarchical system. *Education Review*, *64*(4), 405–424.

Hairon, S., & Tan, C. (2017). Professional learning communities in Singapore and Shanghai: Implications for teacher collaboration. *Compare: A Journal of Comparative and International Education*. *47*(1), 91–104. https://doi.org/10.1080/03057925.2016.1153408

Hewlin, P. F. (2003). Note: And the award for best actor goes to…: Facades of conformity in organizational settings. A*cademy of Management Review*, *28*(4), 633–642.

Hogan, D. (2009). MOE Research Seminar: OER/NIE PowerPoint Presentation to MOE. Singapore: Ministry of Education.

Hult, F. M. (2019). Toward a unified theory of language development: The transdisciplinary nexus of cognitive and sociocultural perspectives on social activity. *The Modern Language Journal*, *103*(51), 136–144. 10.1111/modl.12527

Hung, D., Lee, S.-S., Toh, Y., Jamaludin, A., & Wu, L. (Eds.) (2019). *Innovations in Educational change: Cultivating ecologies for schools.* Singapore: Springer.

Hung, D., Toh, Y., Jamaludin, A., & So, H.-J. (2017). Innovation becoming trajectories: leveraging lateral and vertical moves for collaborative diffusion of twenty-first century learning practices. *Asia Pacific Journal of Education*, *37*(4), 582–600. 10.1080/02188791.2017.1388213

Inden, R. (1990). *Imagining India*. Oxford: Blackwell.

Ingerslev, L. R. (2020). Inhibited intentionality: On possible self-understanding in cases of weak agency. *Frontiers in Psychology*, *11*(558709), 1–13. https://doi.org/10.3389/fpsyg.2020.558709

Institute of Medicine and National Research Council. (1997). *Improving schooling for language-minority children: A research agenda.* Washington, DC: The National Academies Press. https://doi.org/10.17226/5286

Jenlink, P. M., & Jenlink, K.E. (2019). Examining educative versus mis-educative experiences in learning to teach. In C. L. Lowery & P. M. Jenlink (Eds.), T*he handbook of Dewey's educational theory and practice* (p. 155–173). Brill.

Johansen, B., & Euchner, J. (2013, January–February). Navigating the VUCA world: An interview with Bob Johansen. *Research-Technology Management*, *56*(1), 10–15.

Koh, A. (2004) Singapore education in “new times”: Global/local imperatives. *Discourse: Studies in the Cultural Politics of Education*, 25(3), 335–349. 10.1080/0159630042000247917

Kennedy, K. J. (2008). Globalized economies and liberalized curriculum: New challenges for national citizenship education. In D. Grossman, W. O. Lee, & K. Kennedy (Eds.), *Citizenship curriculum in Asia and the Pacific* (pp. 13– 26). Hong Kong: Springer/Comparative Education Research Centre, University of Hong Kong.

Kennedy, K. J., & Fairbrother, G. P. (2004). Asian perspectives on citizenship education in review: Postcolonial constructions or precolonial values. In W. O. Lee, D. L. Grossman, K. J. Kennedy, & G. P. Fairbrother (Eds.), *Citizenship education in Asia and the Pacific: Concepts and issues* (pp. 289–301). Hong Kong: Comparative Education Research Center.

Khng, K. H. (2018). Mindfulness in education: The case of Singapore. *Learning: Research and Practice*, *4*(1), 52–65. https://doi.org/10.1080/23735082.2018.1428120

Kress, G. (2009). *Multimodality: A social semiotic approach to contemporary communication*. Routledge: Oxon & New York.

Kwek, D. (2018). Historical context of secondary education in Singapore. In L. P Symaco, M. T. Tatto & I. Menter (Eds.), *Bloomsbury education and childhood studies*. https://www.becs-bloomsbury.com/article?docid=b-9781474209472&tocid=b-9781474209472-014&st=kwek

Kwek, D., Teng, S. S., Lee, Y. J., & Chan, M. (2020). Policy and pedagogical reforms in Singapore: taking stock, moving forward. *Asia Pacific Journal of Education*, *40*(4), 425–432.

Labaree, D. (2011). The lure of statistics for educational researchers. *Educational Theory*, *61*(6), 621–632.

Lai, C., Li, Z., & Gong, Y. (2016). Teacher agency and professional learning in cross-cultural teaching contexts: Accounts of Chinese teachers from international schools in Hong Kong. *Teaching and Teacher Education*, *54*, 12–21. https://doi.org/10.1016/j.tate.2015.11.007

Landy, K., Flaming, A. L., Tapp, S., & Kaldor, E. C. (2022). Contexts for agency: A framework for managing educational development work. *To Improve the Academy: A Journal of Educational Development*, *41*(1). https://doi.org/10.3998/tia.445

Leander, K. M., & Lovvorn, J. F. (2006). Literacy networks: following the circulation of texts, bodies, and objects in the schooling and online gaming of one youth. *Cognition and Instruction*, *24*(3), 291–340.

Lee, S.-S., Hung, D., & Teh, L. W. (2016). An ecological view of conceptualising change in the Singapore Education System. *Educational Research for Policy and Practice*, *15*, 55–70.

Lee, W. O. (1991). *Social change and educational problems in Japan, Singapore, and Hong Kong*. London: Macmillan.

Lee, W. O. (2013). The development of a future-oriented citizenship curriculum in Singapore: Convergence of Character and Citizenship Education and Curriculum 2015. In Z. Deng, S. Gopinathan & C. K.-E. Lee (Eds.), *Globalization and the Singapore classroom: From policy to classroom* (pp. 241–260). Singapore: Springer.

Lefstein, A., Louie, N., Segal, A., & Becher, A. (2020). Taking stock of research on teacher collaborative discourse: Theory and method in a nascent field. *Teaching and Teacher Education*, *88*, 102954.

Leskinen, K. (2022, September). Agency in academic literacy practices: Multilingual migrants working towards their professional goals in Finland. Poster presented at the British Association of Applied Linguistics (BAAL) Conference 2022, Queen's University Belfast, UK.

Li, C. (2014). *The Confucian philosophy of harmony*. Routledge.

Lingard, B. (2010). Policy borrowing, policy learning: Testing times in Australian schooling. *Critical Studies in Education*, *51*(2), 129–147.

Lim, S. H., & Baildon, M. (2022). Understanding self-regulated learning in Singapore's social studies classrooms. *Learning: Research and Practice*, *8*(1), 25–41. 10.1080/23735082.2021.1954235

Malin, J. R., Brown, C., Ion, G., van Ackeren, I., Bremm, N., Luzmore, R., Flood, J., & Rind, G. M. (2020). World-wide barriers and enablers to achieving evidence-informed practice in education: What can be learnt from Spain, England, the United States, and Germany? *Humanities and Social Sciences Communications*, *7*(99), 1–14. https://doi.org/10.1057/s41599-020-00587-8

Markus, H. R., & Kitayama, S. (2003). Models of agency: Sociocultural diversity in the construction of action. In V. Murphy-Berman & J. J. Berman (Eds.), *Vol. 49 of the Nebraska symposium on motivation. Cross-cultural differences in perspectives on the self* (pp. 18–74). University of Nebraska Press. https://psycnet.apa.org/record/2003-88416-001

McGrath, B. (2009). School disengagement and 'structural options': Narrative illustrations of an analytical approach. *Young: Nordic Journal of Youth Research*, *17*(1), 81–101.

McLaren, P. (2007). This fist called my heart: Public pedagogy in the belly of the beast. *Antipode*, *40*(3), 472–481.

Ministry of Education, Singapore (MOE). (1997). *Speech by Prime Minister Goh Chok Tong at the opening of the 7th International Conference on Thinking on Monday, 2 June 1997, at 9.00 AM at the Suntec City Convention Centre Ballroom: Shaping our future: Thinking Schools, Learning Nation*. http://ncee.org/wp-content/uploads/2017/01/Sgp-non-AV-2-PM-Goh-1997-Shaping-Our-Future-Thinking-Schools-Learning-Nation-speech.pdf

Ministry of Education, Singapore (MOE). (2016). C*haracter and citizenship education syllabus pre-university: Implementation starting from 2016*. https://www.moe.gov.sg/-/media/files/programmes character_and_citizenship_education_preu_syllabus.pdf?la=en&hash=F4B55203C3F0B328B45A6E703E7529AC2CC0FA0B

Ministry of Education, Singapore (MOE) (2018, July 24). *Proposed MOE Corporate Education Research Agenda* (*FY2018-2022*). Unpublished.

Ministry of Education, Singapore (MOE). (2020). *Learn for life — ready for the future: Refreshing our curriculum and skillsfuture for educators*. https://www.moe.gov.sg/news/press-releases/20200304-learn-for-life-ready-for-the-future-refreshing-our-curriculum-and-skillsfuture-for-educators

Ministry of Education, Singapore (MOE). (2021a). *Character and citizenship education syllabus pre-university: Implementation starting from 2022*. https://www.moe.gov.sg/-/media/files/syllabus/2021-preu-character-and-citizenship-education.pdf?la=en&hash=936D2

Ministry of Education, Singapore (MOE). (2021b, October 18). *Desired outcomes of education*. Education in SG. https://www.moe.gov.sg/education-in-sg/desired-outcomes

Ministry of Education, Singapore (MOE). (2021c, October 21). *21st century competencies*. https://www.moe.gov.sg/education-in-sg/21st-century-competencies

Ministry of Education, Singapore (MOE). (2021d, March 4). *Multiple pathways, new opportunities*. https://www.moe.gov.sg/microsites/cos2021/multiple-pathways.html

Ministry of Education, Singapore (MOE). (2022, February 22). *Social and emotional learning*. https://www.moe.gov.sg/education-in-sg/our-programmes/social-and-emotional-learning

Moorhouse, B. L., & Wong, K. M. (2002). The COVID-19 pandemic as a catalyst for teacher pedagogical and technological innovation and development: Teachers' perspective. *Asia Pacific Journal of Education*, *42*(1), 105–120. 10.1080/02188791.2021.1988511

Natarajan, U., Tan, A. K., & Teo, T. W. (2021). Theorizing STEM leadership: Agency, identity and community. *Asia-Pacific Science Education*, *7*, 173–196.

Neoh, J. Y. (2017) Neoliberal education? Comparing Character and Citizenship Education in Singapore and Civics and Citizenship Education in Australia, *Journal of Social Sciences Education*, *16*(3), 29–39. 10.1080/02188791.2020.1725431

Nisbett, R. E. (2005). The geography of thought: How Asians and Westerners think differently. London and Boston: Nicholas Brealey Publishing.

Ng, P. T. (2004). Innovation and enterprise in Singapore schools. *Educational Research for Policy and Practice*, Educational Research for Policy and Practice, *3*(3), 183–198.

Ng, C. M. (2016). *Speech by Ng Chee Meng, Acting Minister for Education (Schools) at the Singapore Economic Policy Forum*. Retrieved from https://www.moe.gov.sg/news/speeches/20161027-speech-by-ng-chee-meng-acting-minister-for-education-schools-at-the-singapore-economic-policy-forum

Ng, P. T. (2017). *Learning from Singapore: The power of paradoxes*. New York.

Ng, P. T. (2020). The paradoxes of student well-being in Singapore. *ECNU Review of Education*, *3*(3), 437–451.

Nutley, S. M., Walter, I., & Davies, H. T. (2007). *Using evidence: How research can inform public services*. Bristol, UK: Policy Press.

Ong, A. (1999). *Flexible citizenship: The cultural logics of transnationality.* Durham: Duke University Press.

Ong, Y. K.(2018). Opening address by Mr Ong Ye Kung, Minister for Education, at the Schools Work Plan Seminar. https://www.moe.gov.sg/news/speeches/20180928-opening-address-by-mr-ong-ye-kung-minister-for-education-at-the-schools-work-plan-seminar

Ornstein, A. C. 1988). The evolving accountability movement. *Peabody Journal of Education*, *65*(3), 12–20.

Owen, D. (2014). On global citizenship and public philosophy. In James Tully (Ed.), *On global citizenship: James Tully in dialogue* (pp. viii–xii). London: Bloomsbury. http://library.oapen.org/handle/20.500.12657/30133

Pacherie, E. (2007). The sense of control and the sense of agency. *PSYCHE: An interdisciplinary journal of research on consciousness*, *13*, 1–30.

Parker, W., Nonomiya, A., & Cogan, J. (1999). Educating world citizens: Toward multinational curriculum development. *American Educational Research Journal*, *36*(2), 117–146.

Pickard, H. (2011). Responsibility without blame: Empathy and the effective treatment of personality disorders. *Philosophy, Psychiatry, and Psychology*, *18*(3), 209–224. 10.1353/ppp.2011.0032

Pinar, William F. (2012). *What is curriculum theory?* (2nd ed.). Mahwah, New York: Routledge.

Pinar, W. F., Reynolds, W. M., Slattery, P., & Taubman, P. M. (1995). *Understanding curriculum: An introduction to the study of historical and contemporary curriculum discourses*. New York: Peter Lang.

Pöllmann, A. (2016). Habitus, reflexivity, and the realization of intercultural capital: The (unfulfilled) potential of intercultural education. C*ogent Social Sciences*, *2*, 1149915. http://dx.doi.org/10.1080/23311886.2016.1149915

Priestley, M., Edwards, R., Priestley, A., & Miller, K. (2012). Teacher agency in curriculum making: Agents of change and spaces for Manoeuvre. *Curriculum Inquiry*, *42*(2), 191–214. https://doi.org/ 10.1111/j.1467-873X.2012.00588.x

Programme for International Student Assessment (PISA). (2017). *PISA 2015 results (volume III): Students' well-being*. OECD Publishing. https://www.oecd-ilibrary.org/content/publication/9789264273856-en

Rappa, N. A., & Tang, K.-S. (2017). Student agency: An analysis of students' networked relations across the informal and formal learning domains. *Research in Science Education*. 10.1007/s11165-016-9523-0.

Reeve, J., & Cheon, S. H. (2021). Autonomy-supportive teaching: Its malleability, benefits, and potential to improve educational practice. *Educational Psychologist*, *56*(1), 54–77. https://doi.org/10.1080/00461520.2020.1862657

Reigeluth, C. M., & Karnopp, J. R. (2013). *Reinventing Schools: It's Time to Break the Mold*. Lanham, MD: Rowman & Littlefield.

Rodan, G., Clammer, J. R., & Chua, B. H. (2019). *On liberalism disavowed: Communitarianism and state capitalism in Singapore* by Chua Beng Huat. Singapore: NUS Press, 2017. Review essays by Garry Rodan and John R. Clammer, with a response from Chua Beng Huat. *SOJOURN: Journal of Social Issues in Southeast Asia*, *34*(1), 185–206.

Rogerson, S. (2021). Rebooting ethics education in the digital age. Academia Letters, Article 146. https://doi.org/10.20935/AL146

Rosa, E. M., & Tudge, J. (2013). Urie Bronfenbrenner's Theory of Human Development: Its evolution from ecology to bioecology. *Journal of Family Theory & Review*, *5*(4), 243–258. https://doi.org/10.1111/jftr.12022

Schubert, W. H. (2021, March 25). *A chronology of curriculum questions.* Oxford Reference Encyclopaedias: Education. https://doi.org/10.1093/acrefore/9780190264093.013.1031

Schutz, A. (1967). T*he Phenomenology of the Social World* (G. Walsh & F. Lehnert, Trans.). Evanston, Ill.: Northwestern University Press.

Schwab, J. J. (1964). The structure of the disciplines: Meaning and significance. In G. W. Ford & L. Pugno (Eds.), T*he structure of knowledge and the curriculum* (pp. 1–30). Chicago: Rand McNally.

Schwab, J. J. (1973). The practical 3: Translation into curriculum. *The School Review*, *81*(4), 501–522.

Sen, A. (1997). *Human rights and Asian values*. Carnegie Council on Ethics and International Affairs. https://www.carnegiecouncil.org/publications/archive/morgenthau/254/_res/id=Attachments/index=0/254_sen.pdf&lang=en

Sim, J. B.-Y., & Chow, L. T. (2019). Confucian thinking in Singapore's citizenship education. *Journal of Moral Education*, *48*(4), 465–482.

Sim, J. B.Y., & Low, E. L. (2012). Character and citizenship education: Conversations between personal and societal values. *Asia Pacific Journal of Education*, *32*(4), 381–394. 10.1080/02188791.2012.746214

Souto-Otero, M. (2021). Validation of non-formal and informal learning in formal education: Covert and overt. European Journal of Education: Research, Development and Policy, *56*(3), 365–379. https://doi.org/10.1111/ejed.12464

Sutoris, P. (2022, February 7). Our environmental crisis requires political fixes, not technological ones. Retrieved April 11, 2023, from https://www.scientificamerican.com/article/our-environmental-crisis-requires-political-fixes-not-technological-ones/

Stein, S. (2021). Reimagining global citizenship education for a volatile, uncertain, complex and ambiguous (VUCA) world. *Globalisation, Societies and Education*, *19*(4), pp. 482–495.

Steiner-Khamsi, G. (2012). Understanding policy borrowing and lending: Building comparative policy studies. In G. Steiner-Khamsi & F. Waldow (Eds.), *Policy borrowing and lending*. World Yearbook of Education 2012 (pp. 3–17). London: Taylor & Francis.

Stryker, S., & Burke, P. J. (2000). The past, present and future of identity theory. *Social Psychology Quarterly*, *63*(4), 284–297.

Tan, A.-L., Lim, S. S. L., & Poon, C. L. (2014). *Inquiry into the Singapore science classroom*, Research and Practices. Springer.

Tan, C. (2008). Globalisation, the Singapore state and educational reforms: towards performativity. *Education, Knowledge & Economy*, *2*(2), 111–120.

Tan, C. (2011). Framing educational success: A comparative study of Shanghai and Singapore. Education, Knowledge and Economy, *5*(3), 155–166. 10.1080/17496896.2012.673939

Tan, J. (2009). Private tutoring in Singapore: Bursting out of the shadows. *Journal of Youth Studies*, *12*(1), pp. 93–103.

Tan, J. (2022, March 12). Commentary: Why scrapping mid-year exams is giving some parents more anxiety than relief. Channel News Asia (Online). https://www.channelnewsasia.com/commentary/mid-year-exams-removal-anxiety-parents-more-stress-2557851

Tan, K. P. (2008). Meritocracy and elitism in a global city: Ideological shifts in Singapore. *International Political Science Review*, *29*(1), 7–27.

Tan, S.-H. (2015). *Review of the book The Confucian philosophy of harmony*, by Chenyang Li. Philosophy of East & West, *65*(2), 620–622.

Tao, J., & Gao, X. A. (2021). *Elements in language teaching: Language teacher agency* (H. Rose & J. McKinley, Eds.). UK: Cambridge University Press.

Teng, S. S., Abu Bakar, M., & Layne, H. (2020). Education reforms within neoliberal paradigms: a comparative look at the Singaporean and Finnish education systems. *Asia Pacific Journal of Education*, *40*(4), 458–471.

Teo, J. E., Deng, Z., Lee, C. K.-E., & Lim-Ratnam, C. (2013). Teach less, learn more: Lost in translation. In Z. Deng, S. Gopinathan & C. K.-E. Lee (Eds.), *Globalization and the Singapore classroom: From policy to classroom* (pp. 99–117). Singapore: Springer. Tomasello, M. (1999). *The cultural origins of human cognition*. Cambridge: Harvard University Press.

Teo, T. T. (2018). Broadening and deepening the dialogue about “low achievers”. *Asia Pacific Journal of Education*, *38*(3),275–278. https://www.tandfonline.com/doi/full/10.1080/02188791.2018.1511271

The Organization for Economic Cooperation and Development (OECD). (2018). *The future of education and skills: Education 2030.* https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf

Torney-Purta, J., Lehmann, R., Oswald, H., & Schulz, W. (2001). *Citizenship and education in twenty-eight countries: Civic knowledge and engagement at age fourteen*. https://www.iea.nl/publications/study-reports/international-reports-iea-studies/citizenship-and-education-twenty-eight

Tully, J. (2014). On global citizenship. In James Tully (Ed.), *On global citizenship: James Tully in dialogue* (pp. 3–100). London: Bloomsbury. http://library.oapen.org/handle/20.500.12657/30133

Tyler, R. W. (1969). *Basic principles of curriculum and instruction*. Chicago: University of Chicago Press.

Varela, F. J., Thompson, E., & Rosch, E. (1991). *The embodied mind: Cognitive science and human experience*. The MIT Press.

Wagner, T. P. (2014). Using root cause analysis in public policy pedagogy. J*ournal of Public Affairs Education*, *20*(3), 429–440. https://www.jstor.org/stable/24369813

Wang, J. C. C., Ng, B. L. L., Liu, W. C., & Ryan, R. M. (2016). Can being autonomy-supportive in teaching improve students' self-regulation and performance. In W. C. Liu, J. C. K. Wang & R. M. Ryan (Eds.), *Building autonomous learners: Perspectives from research and practice using self-determination theory* (pp. 227–243). Singapore: Springer.

Wee, L. (2021). *Posthumanist World Englishes*. Cambridge, UK: Cambridge University Press.

Wells, G. (1999). D*ialogic inquiry: Towards a socio-cultural practice and theory of education*. Cambridge: Cambridge University Press.

Wertsch, J. V. (1994). The primacy of mediated action in sociocultural studies. *Mind, Culture, and Activity*, *1*(4), 202–208. https://doi.org/10.1080/10749039409524672

Wertsch, J. V., del Rio, P., & Alvarez, A. (1995). Introduction. In J. V. Wertsch, P. del Rio. & A. Alvarez (Eds.). *Sociocultural studies of the mind* (pp. 1–37). New York: Cambridge University Press.

Willis, P. (1977). *Learning to labour: How working-class kids get working-class jobs*. Farnborough: Saxon House.

Wong, H. M., Kwek, D., & Tan, K. (2020). Changing assessments and the examination culture in Singapore: A review and analysis of Singapore's assessment policies. *Asia Pacific Journal of Education*, *40*(4), pp. 433–457.

Wood, B. E., & Milligan, A. (2016). Citizenship education in New Zealand policy and practice. *Policy Quarterly*, *12*(3), 65–73.

Wu, X., Ramesh, M., & Howlett, M. (2015). Policy capacity: A conceptual framework for understanding policy competences and capabilities. *Policy and Society*, *34*(3–4), 165–171.

Yang, P. (2021). Interpreting inquiry learning in social studies: Singapore secondary school teachers' understandings of "Issue Investigation"—A preliminary study. *Pedagogies: An International Journal*. 10.1080/1554480X.2021.1944870

Zhao, Y. (2017). What works may hurt: Side effects in education. *Journal of Educational Change*, *18*(1), 1–19.

Zienkowski, J. (2017). Reflexivity in the transdisciplinary field of critical discourse studies. *Palgrave Communications*, *3*(17077), https://www.nature.com/articles/palcomms20177

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