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Bridging the Gap:
Levers of Change scoping report
Breadth of skills and teacher development

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RESEARCH • IMPLEMENTATION • MONITORING & EVALUATION

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Acronyms and abbreviations

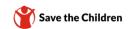|	
3PN	Three Pomegranate Network
4IR	fourth industrial revolution
AI	artificial intelligence
ATC21S	Assessment and Teaching of 21st Century Skills
CHE	Council on Higher Education
CPTD	Continuous Professional Teacher Development
DBE	Department of Basic Education
DCDT	Department of Communications and Digital Technologies
DHET	Department of Higher Education and Training
DoE	Department of Education
DSD	Department of Social Development
ECD	early childhood development
HEI	higher education institution
ICTs	information and communication technologies
ITE	Initial Teacher Education
NDP	National Development Plan
NGO	non-governmental organisation
NPC	National Planning Commission
NQF	National Qualifications Framework
QCTO	Quality Council for Trades and Occupations
SACE	South African Council for Educators
SAMR	Substitution Augmentation Modification Redefinition
SAQA	South African Qualifications Authority
SDG	Sustainable Development Goal
TPACK	Technological, Pedagogical, and Content Knowledge

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Executive Summary

Holistic skills, or 21st century skills, represent a breadth of skills considered necessary for a new social order that is underpinned by widespread information and communication technologies (ICTs) and has become recognised as the Fourth Industrial Revolution (4IR). The 'breadth of skills' movement emerged from Sustainable Development Goal (SDG) 4 of the United Nations' 2030 Agenda for Sustainable Development [1] as a mechanism to ensure inclusive and quality education for all and promote lifelong learning (Care, Anderson & Kim 2016, 4). SDG 4.7 speaks to global citizenship and education for sustainable development and has particularly been linked with promoting 21st century skills (Care, Kim, Vista & Anderson, 2018). As such, enhancing 21st century skills is an internationally driven, global imperative. According to Care et al. (2016) skills focused on literacy and numeracy, employment and entrepreneurship and sustainable development, together comprise the breadth of skills required in the 21st century.

JET Education Services (JET) has been contracted by Save the Children South Africa to conduct research that will feed into an advocacy project focused on enhancing the breadth of skills in the South African education system, particularly in early childhood development (ECD) and primary education. The project is aligned to three global objectives:

Global Objective 1 - Political will and commitment towards children's holistic skills development within national education systems is enhanced

Global Objective 2 - Increased knowledge, motivation, and demand for holistic skills within education systems amongst target audiences

Global Objective 3 - Increased attention to and salience of the importance of holistic skills development within education among target audiences

Save the Children South Africa has developed three national outcomes linked to the Global Outcomes:

- *Intermediate outcome 1.1:*

Improved government engagement for delivering educational systems that incorporates children's 21st century skills development at pre-primary and primary level by 2024.

- *Intermediate outcome 2.1:*

Knowledge exchange between breadth of skills experts (civil society, higher training institutions, researchers, coalitions, unions, etc.) to inform processes and policies to facilitate the inclusion of 21st century skill development at pre-primary and primary levels.

- *Intermediate outcome 3.1:*

Champions engaged with decision makers on incorporating breadth of skills development in policy and curriculum at pre-primary and primary levels.

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[1] https://sdg4education2030.org/the-goal

The purpose of this report was to present research that can inform the advocacy project and assist Save the Children South Africa to achieve its intended outcomes. In doing so, the report systematically outlined the nature and scope of what should be advocated for and sought to identify and create a clear understanding of the key stakeholders; including government, private sector, and non-governmental organisations (NGOs) that are able to drive changes in the education system. In particular, the report will consider teacher development as a key lever through which change might be driven to enhance and expand holistic skills development within the education system.

The report covers three broad focus areas.

1. Conceptualising holistic skills for the 21st century by engaging with the conceptual coherence and contestation between similar terminology focused on skills development for the contemporary age and the future. These are unpacked in relation to their value in education and the world of work, and the preparation of children for participation in a future society shaped by uncertainty and rapid social and technological change. This section engages with a number of complementary frameworks to this end, and considers the general curriculum implications of these frameworks.

2. A situational analysis with four subsections: a) framing ECD (pre-primary education) in South Africa, b) understanding primary education, c) identifying and articulating 21st century skills in education policy, and d) the role of quality assurance councils in the translation of 21st century skills. Together the sub-sections identify a clear policy discourse with regards to 21st century skills without clear mechanisms to ensure alignment of implementation and prioritisation of resources.

3. A discussion of teacher development and 21st century skills that foregrounds the importance of incorporating these skills into the initial training and continuing professional development of South African teachers, taking into account those barriers that may impede the successful articulation of these skills in current policy and practice. This section identifies differences in the thrust of Continuous Professional Teacher Development (CPTD) and Initial Teacher Education (ITE) priorities with regards to 21st century skills, as well as concomitant political will.

From the situational analysis and discussion of teacher development, the following points emerged:

- Coherent articulation of and about 21st century skills across policies or policy alignment with regards to conception and intention is emergent but not seamless.
- Alignment across different agencies in the education sector – basic education, higher education and qualification and quality assurance agencies – is emergent but not seamless.
- A 'new' curriculum is not necessarily needed. However, strengthening the current curriculum, a process already underway, is a crucial undertaking that demonstrates political will in the South African context.
- Basic skills cannot be ignored while developing the breadth of skills in the South African context.
- Optimal use of resources is fundamental to the success of enhancing breadth of skills in the South African context.
- Existing processes should thus be harnessed, for example, the Sector Plan for Entrepreneurship in Schools and the pilot of the General Education Certificate (GEC) are likely to hold valuable lessons with regards to teacher development and enhancing the breadth of skills in the South African education system.

1 Introduction

The report starts by defining the relationship between breadth of skills, holistic skills and 21st century skills as a necessary element to frame the report. Clear conceptualisation is essential for developing a coherent analysis of the situation with regards to breadth of skills in the South African education system, which in turn is required to outline an advocacy agenda. After conceptualisation, the report moves into a situational analysis of the context. In other words, it maps the situational features regarding how breadth of skills is developed in pre-primary and primary school in the South African education system, it identified and articulates 21st century skills in education policy, and examines the role of quality assurance councils in the translation of 21st century skills. The last section of the report explores teacher development and 21st century skills foreground both the initial education and continuing professional development of South African teachers before concluding with key take-aways to develop an advocacy agenda.

2 Conceptualising holistic skills development for the 21st century

There appears to be a broad consensus amongst the citizens of the globe, at a global level, that the world is changing and different skills are needed to support life and livelihoods in the future. Gaining popularity in the current education sphere is the concept of '21st century skills'. The aim of introducing the concept into education systems is so that they will produce citizens who have the kind of knowledge that is holistic and useful over their lifespan.

Clarifying the distinction between the 21st century and 21st century skills is important, particularly for driving home advocacy messaging. Individuals and stakeholders may agree on the particular phenomena unique to the 21st century that have heralded a changed or changing society, but not on the skills needed for this setting. The converse might also be true, that the change is not entirely accepted, yet the skills are considered essential. Each of these perspectives will thus be defined in order to make future distinctions possible.

Discourse around 21st century skills began in the early 2000s, with employers noticing a disjuncture between work expectations and skills possessed by learners graduating from schools, technical colleges and universities (Trilling & Fadel, 2009). These skills are crucial because they are intended to better equip learners with skills aligned to the requirements of a changing world, particularly in terms of their participation in the economy but also in terms of the changing nature of societies (Miet Afrika, 2016). Trilling and Fadel (2009) use three different ages to illustrate this: the Agrarian Age, the Industrial Age and the current Knowledge Age. In the Agrarian Age, contribution to the larger society was based on one's ability to assist in satisfying basic communal needs; in the Industrial Age, contribution was through working in a particular profession that impacted the Industrialised Age; and in the current Knowledge Age, which is inclusive of digital technologies, contribution is best made through the creation of unique ideas to solve problems and by participating in the global economy (Trilling & Fadel, 2009).

In line with the Knowledge Age, education systems around the world are experiencing change, largely influenced by technology through digitisation and digitalisation. These two processes are occurring in the world of work, and there is a need for education to respond to the requirements of the workplace (Care et al., 2016). The relationship between education, training and the world of work is very delicate, involving careful balancing of both the policy formulation and collaboration imperatives (Care et al., 2016). Significantly, the education system now has an added role of preparing young people with skills to live and work with technology. This is important because in a rapidly changing world, where many existing jobs might be taken over by technology and be technology-assisted, digital literacy is paramount.

Furthermore, the acceleration of global trends such as the 4IR translates into a world of increasing complexity and uncertainty that fundamentally affects the nature of work and society and has added to the demand for the development of 21st century skills. In order for these skills to become a feature of how young children are taught and learn, it is essential to prioritise the professional development of teachers towards this end, with a focus on capacitating them to build 21st century skills development into their methods and practices.

From the literature, it is evident that holistic skills are not easy to define for a few reasons. Firstly, countries are at varying degrees of achievement in terms of integrating holistic skills into their education systems (Care et al., 2016). Secondly, the content that is implicated in teaching holistic skills requires a different approach to that of recollection of facts; it requires learners to do more than memorise and be in a position to practically apply those skills (Care et al., 2016). While these skills might originate from a collective mind set, it is important that individual traits are expanded on when describing them (Care et al., 2016). Countries might have values of peace, lifelong learning and educated citizens; however, without relating these values to individual efforts, the definition of holistic skills would fall short of the description (Care et al., 2016).

One useful framework for conceptualizing 21st century skills is the Assessment and Teaching of 21st Century Skills (ATC21S) framework that originates from collaborative research headed by the University of Melbourne and separates skills into four compartments: Ways of Thinking; Ways of Working; Tools for Working; and Ways for Living in the World (GPE, 2020).

Figure 1: Assessment and Teaching of 21st Century Skills

(GPE, 2020, 27)

The AT21CS is a useful way of understanding 21st century skills and to which domain the skills belong in terms of an individual's development. Being context sensitive, the use of the framework is not limited to the skills specified in the framework. Rather, the framework provides a skeletal structure by means of which one can locate the aforementioned 21st century skills as well as additional 21st century skills that are relatable to the South African context.

Aggregation of skills into the four quadrants above offers a way of thinking about potential curriculum integration and organisation of teacher development. For example, Care et al. (2016) note that collaboration, problem solving, information literacy, creativity, communication and empathy are examples of 21st century skills. Similarly, Joynes, Rossignoli and Amonoo-Kuofi (2019) define 21st century skills as the '4Cs': critical thinking, communication, creative thinking and collaboration - soft skills that should be well-integrated into the education of learners.

Communication refers to the ability to convey meaning and express thoughts and ideas in oral and written form, confidently and with understanding (Joynes et al., 2019). Dede (2019) proposes that lifelong communication skills go beyond ordinary communication skills and should incorporate learning how to communicate controversial or not often engaged with ideas in depth as well as how to communicate a difference of opinion or challenging perspectives, as might be required in the work environment. Communication skills are also aligned with technological and media skills as there has been an expansion in the use of digital devices as communication tools in school, work and social life (Joynes, et al. 2019). Learners' capabilities to communicate have often been assessed from the perspective of in-person interaction, whereas the ubiquitous use of digital communication tools requires a suitable introduction to enable learners to be comfortable with online communication (Dede, 2010). Communication is a way of working within the AT21CS framework.

Collaboration is the ability to form and maintain healthy relations in the workplace with involved stakeholders, be they within close proximity or not. Communication is a prerequisite for collaboration (Joynes, et al. 2019). There is also a growing trend in workspaces where people are required to communicate with colleagues who are not within close proximity and with whom they interact using digital devices; this underlines the importance of being comfortable with using technology in workspaces, even more so in the current times. Being able to use technology is a crucial skill and is a means to achieving other skills (Joynes, et al 2019). COVID-19 took collaboration in the digital workplaces up a few notches. Collaboration is a way of working within the AT21CS framework.

Creativity refers to the skill of inventing new ideas or posing questions that are not commonly thought of (Joynes, et al. 2019). Creativity is a way of thinking within the AT21CS framework.

Critical thinking is a thought process that is considered a crucial 21st century skill and that overlaps with other skills such as communication and information literacy. Critical thinking is also required to process the large volumes of information that are consumed in daily life; the increase in information available requires that individuals develop skills to separate information that is useful to them from information that is not relevant to their tasks or needs (Dede 2010) – in other words, the ability to gauge which information is worth storing, which can be disposed of, which is fake and which is reliable in relation to achieving one's aim. Critical thinking is a way of thinking within the AT21CS framework.

To further extend the definition of holistic skills, Ngale and Monaheng (2019) suggest that holistic skills mean the coming together of African traditional (Basotho) knowledge with Western Education. This could be added to the quadrants, ways of thinking and living in the world. In other words, engaging with holistic skills could be an opportunity to emphasise particular philosophical traditions that would enhance social life in the 21st century. For example, *Ubuntu*, a widely used and accepted concept in the South African context established the essence of collaboration within human existence. From this perspective, holistic education is defined as being learner-centred, inclusive of character influences and modern skills and competencies (Ngale & Monaheng, 2019). Furthermore, according to Ngale and Monaheng (2019), holistic skills include flexibility

and adaptability, productivity and accountability (ways of working), as well as social and cross-cultural skills, leadership and responsibility (living in the world).

Due to the fast-paced nature of the 21st century, the **ability to be flexible** and accept **and adapt** to new ways of communicating, working and living is essential (Trilling & Fadel, 2009). There are also higher occurrences of career path changes or entering into newly created jobs in response to the changing world (Trilling & Fadel, 2009). 'Increased mobility, immigration, inter-marriage, and access to job opportunities worldwide have led to another kind of blending and mixing communities across the globe that are becoming ever more culturally diverse' (Trilling & Fadel, 2009, 18). 'Understanding and accommodating cultural and social differences' and being able to use them creatively to come up with solutions would also stand one in good stead during these times (Trilling & Fadel, 2009, 80). An important social skill is the ability to interact with people of different backgrounds, cultures and belief systems while maintaining respect for those differences (Ngale & Monaheng, 2019). The ability to guide others towards an aim using your communication, problem-solving and interpersonal skills is to lead and be responsible (Trilling & Fadel, 2009). Joynes et al. (2019, 14) furthermore refer to soft-skills such as empathy, the ability to mentally and emotionally make sense of another person's experiences and feelings, and responsibility, which is to understand one's place within a setting and live up to the roles associated with that place, as crucial 21st century skills. Empathy and responsibility capture well what is implied in the concept of *Ubuntu* and ways of living in the world that would equip one to succeed in a 21st century social milieu and be the catalyst of others' success.

Active citizenship and global awareness are also considered 21st-century skills (Kim, Raza & Seidman, 2019), as is independence, which is the ability to self-initiate and take appropriate work action without being instructed to do so (Kivunja, 2015). Independence in the workplace is appreciated because it demonstrates one's ability to think and is associated with willingness and being highly motivated (Kivunja, 2015).

The difficulty of defining holistic skills may discourage countries from implementing holistic skills development. In this regard, Care et al (2016, 4) found the following, based on a review of 102 countries:

- Policy in most countries makes some reference to 'breadth of skills'.
- The skills are consistently identified in policy of only a few countries.
- The most common skills mentioned in policy documents are – 'Communication, creativity, critical thinking, and problem solving'. These skills are considered to move learners beyond the basic skills of literacy and numeracy (Care et al., 2016).

Care et al (2016) concluded that while 'breadth of skills' may be acknowledged in national discourse, they are not articulated in pedagogy and curricula and thus in the classroom. The solution to this problem may lie in defining holistic skills in accordance with the particular context in which they are needed. Consequently, this report does not commit to a particular definition at this point. The national policy discourse and educational interventions are discussed in section 3 in order to articulate the South African context in this regard. A working definition of 21st century skills on which advocacy for breadth of skills in South Africa might be advanced is formulated in section 3.

2.1   Implications for curriculum

In order for 21st century skills to be accessible to all learners, they need to be incorporated into mainstream education and taught in such a way that they are successfully transferred in the classroom setting. While learning takes place in many different settings, a national curriculum is one key mechanism through which

learning is standardised so that those entering an education system have the potential to progress in a similar fashion.

As mentioned above, in many countries there is a lack of evidence that any of the policies relating to holistic skills that may exist are being actively implemented. Moreover, while many countries have adopted a 21st century skills approach in policy, the extent to which this sees expression in the education system differs from country to country (Care et al., 2016), with integration of 21st century skills into curricula largely lacking. This means that the chances that such skills are present in classroom learning is highly unlikely (Care et al., 2016).

Any curriculum needs to be underpinned by progression in skills; in other words, a curriculum must specify how learners develop more complex skills as they progress into higher grades (Care et al., 2016). Further, when a new curriculum is created, it is not only the content that needs consideration but also the teaching approaches that need to be adjusted to be most suitable to transfer the skills of that particular knowledge base (Care et al., 2016).

An essential tenet in curriculum development is that skills develop and therefore competence increases over time, and this progression should be explained and the process of scaffolding well-articulated in the curriculum document (Care et al., 2016). Care et al (2016, 6) contend that the following elements can indicate whether a country has moved from envisioning breadth of skills to implementing breadth of skills development in the education system:

1. *The mission or vision statements on the education websites.*
2. *Whether specific competencies or skills that related to the mission were identified, either in the mission and vision or in other documents.*
3. *Evidence of integration of skills in curriculum documents.*
4. *Evidence of assumptions about progressing levels of sophistication of skills.*

According to the authors (Care et al., 2016), a country's curriculum is informed by a combination of its national goals, history and the needs of its economy. Care et al. (2016) thus propose a pathway that countries can follow to implement breadth of skills in the curriculum, which entails looking at 'the national vision, the competencies that lead to this [breadth of skills], how they are embedded in the curriculum, and how they are assumed to progress'(Care et al 2016, 5).

Across different countries that have integrated breadth of skills in their curricula, three approaches are discernible (Care et al., 2016, 5):

- Teaching skills as standalone subjects;
- Embedding skills in current curricula; and
- Designing inter-disciplinary subjects that incorporate the skills.

Due to the complexities entailed in implementing holistic skills in curricula, countries are encouraged to select skills which are more relevant to their particular country contexts. Furthermore, since countries are at varying levels of identifying and implementing holistic skills, it is unlikely that there can be a fit-for-all approach in this regard. Amongst the most significant factors influencing the teaching and acquisition of holistic skills are teachers' approach. In the next two sections of the report a situational analysis of 21st century skills within pre-primary and primary education in South Africa is provided, and teacher development in this regard.

3 Situational analysis of pre-primary and primary education in South Africa – and implications for enhancing a wider breadth of skills

The broader overarching state of the South African education system is described below and frames the following sections as well as what is possible within this context. The situational analysis will discuss pre-primary education (ECD), primary school education, 21st century skills in South African policy, and quality assurance bodies and 21st century skills.

South African learners still have vastly unequal experiences of education as a result of the country's apartheid past. The education system inherited with the advent of democracy was characterised by structural inequality arising from the apartheid state's differentiated spending and resourcing based on race and, through deliberate policy choices that limited the professionalisation of black, coloured and Indian teachers, a fragmented and unevenly-qualified teaching force. Over time, in post-apartheid South Africa, these inequalities have crystallised and intensified, with high-quality teachers being attracted to (historically white) high-performing schools, despite an equity-based quintile system intended to redress the underdevelopment of poorer schools and improve learning outcomes. For this reason, disadvantaged learners face particular sets of challenges in accessing high-quality education and translating this into improved livelihoods.

The Constitution of the Republic of South Africa 1996

> *guarantees the rights of all children under the age of 18 (including young children) to equal enjoyment of the rights; inter alia, to life; dignity; access to information; a name and nationality; a healthy environment; basic education; family and parental care; nutrition; shelter; basic health care and social services; language and culture.*

> (Republic of South Africa (RSA) 2015, 30).

In post-apartheid South Africa, education was initially the responsibility of the Department of Education (DoE). In 2009, the DoE was split into two departments, the Department of Basic Education (DBE) and the Department of Higher Education & Training (DHET). Pre-primary education or ECD has, until recently, not been a responsibility of either of these departments, but has fallen under the Department of Social Development (DSD). This was motivated by an initial conceptualisation of ECD as being primarily a public health, wellbeing and childcare function to support young children in their early development. Over time, with growing awareness of the complexity and importance of the early years to lifelong development, the educational component has come to the fore as a critical lever to support this process. The DBE has since developed the National Curriculum for ECD, and the governance of ECD is also in the process of shifting to the DBE (DBE & NECT, 2021). In this report pre-primary education and ECD are used interchangeably.

Basic education is divided into four phases, the Foundation Phase (Grades R-3), Intermediate Phase (Grades 4-6), Senior Phase (Grades 7-9) and the Further Education and Training Phase (Grades 10-12). Together the Foundation, Intermediate and Senior Phases are known as the General Education and Training (GET) Phase. At the same time, South African schooling has traditionally been divided into primary and high/secondary schools. Grades R-7 are generally accommodated in primary schools, and is known as primary education while Grades 8-12 are accommodated in high/secondary schools is commonly referred to as secondary education. The Senior Phase of basic education thus straddles both primary and high school. In this report primary education refers to Grades accommodated in primary school.

As defined in Section 2 above, there are a range of skills that are recognised as being part of the breadth of skills/21st century skills/holistic skills notions of skills development. An individual possessing such skills would be able to engage more effectively with the social conditions experienced as consequences of the 4IR. When different contexts are brought into the equation, differences in the exact nature and scope of the skills may alter. When one considers the South African context, digitalisation is not the only social condition that needs to be attended to; rather, holistic skills must be considered within the broad context of the South African lived experience.

It has been said that as a nation, South Africans lack social cohesion, and consequently that social cohesion requires promotion (Barolsky, 2013). This implies that South Africans fail to grasp the fundamental concept of Ubuntu, a Bantu philosophy that ties the actions of all consequentially to those of others. 'I am because you are' is generally interpreted as a value-driving mechanism, which it could be, if it is interpreted as having both physical and sociological consequences driven by altruism. By a physical and sociological consequence, we mean that the actions of individuals are always consequential to others; be it positively or negatively. It is for this reason that a comprehensive understanding of Ubuntu should promote value-driven actions and behaviour.

How does this relate to advocacy about 21st century skills? It emphasises the importance of getting the advocacy as right as possible – because the decisions of the powerful affect more individuals and can potentially bring about greater good. The approach further emphasises the importance of forging a common framework regarding which skills are necessary and should be prioritised over others. The notion of 'common good' may be based on the idea of a commonly experienced good, but an alternative and more supporting notion is of the common good as that good (as in outcome) that has been 'commonly' or democratically forged. In Nancy Fraser's (1998) terms, this is the notion of good that everyone had an equal chance of informing.

When decision making is confined to a few, it stands to reason that the benefits thereof would also be enjoyed by a few. It is not logical that certain individuals can make decisions for others when they lack knowledge of the qualitative experience and historical trajectory of others. But when individuals contribute equally to a decision, they are more likely to understand the underlying logic, even when their views might be overridden. This might mean that decisions take longer to make, but decisions made by a few in South Africa have consistently led to inequality, as the most recent World Bank report continues to affirm.

Moreover, there have been calls for greater policy coherence and alignment in the South African context (DNA Economics, 2017, 14). This aligns with the need for a common good approach. One of the policy instruments that frames the South African education system is the National Qualification Framework (NQF). This framework describes the knowledge, skills and attributes learners are expected to exit particular levels of education with. The NQF was intended to ensure the social and economic validity of education and training, and by implication, skills.

A valid question that emerges from this is why there continues to be a skills gap in South Africa? The answer is that either the NQF cannot do what it is meant to do, that its principles are not applied coherently and/or that its mechanisms are not operating optimally. In order to ensure policy coherence and alignment, advocacy relating to breadth of skills must embrace the notion of the NQF as a compass or framing device. Furthermore, the efficacy of the NQF ought to be interrogated in relation to what ECD and primary education are and should be delivering. The extent to which the mechanisms of the NQF require reimagining cannot be left out of advocacy in this regard, and indeed should form part of the first-order priorities through which 21st century skills will find expression in specific sub-sectors of the education system.

The four sub-sections included in this situational analysis are as follows: (1) Framing pre-primary / ECD in South Africa; (2) primary education in South Africa; (3) 21st century skills in South African policy and (4) quality assurance councils and 21st century skills. Teacher development, as a critical lever to bring about change in the system, is discussed in the section that follows that situational analysis.

3.1   Framing pre-primary / ECD in South Africa

Structurally and socially engineered inequalities remain deeply rooted within all facets of life in contemporary South Africa. Since 1994, government has directed its policymaking efforts to reversing or ameliorating these inherited inequalities which has required intervention from primary school through to the post-school and higher education and training levels. Pre-primary or ECD has not been neglected in this respect: its importance in preparing children for a career of learning has also been acknowledged in the restructuring of the education system. If the goal of education is to equip children with skills for the future, it is evident that this should start at ECD level (Atmore, 2021). This is not only to ensure that children are equipped to participate in an economy characterised by rapid digitisation and digitalisation, but also that a crucial psycho-social foundation is laid for further their personal development.

Under apartheid, policy decisions were made to systematically sort different race groups into particular life streams, which, when scaffolded together resulted in a sophisticated architecture of racial segregation that was as much enforced in law as it was in material reality. Ebrahim (2012) argues that this continues a longer legacy of colonial education, where ECD centres were used as sites of 'civilising' and disciplining indigenous children into the norms and mores of the colonial society. For this reason, it is important to bring a broad approach to understanding how ECD functions in particular contexts, as well as what indigenous and localised ECD practices exist that form the foundation of how children learn.

The South African government understands the constitutive dimensions of ECD in the following way:

- Family planning, healthy pregnancies and postnatal care to give children an optimal start in life;
- Nutrition support for pregnant and breastfeeding women and young children;
- Birth registration, social security and other state provisions for the poorest families;
- Support for parenting;
- Quality learning by young children at home and in groups, programmes and centres;
- Preparation for formal schooling (NPC, 2013, 298).

These priorities have been enacted through a series of steps towards cultivating a role for ECD as a critical linchpin in the delivery of holistic social and educational support. These steps include:

- The signing of the Convention on the Rights of the Child in 1995;
- Free medical and healthcare services for all pregnant women and children from birth to six years of age;
- A nationwide audit of 23 482 ECD sites, successfully completed in 2000;
- The passing of a new Children's Act by parliament in 2005, including chapters that deal with ECD programmes;
- The establishment of a Directorate for Early Childhood Development within the DBE;
- The establishment of a dedicated children's section within the DSD;
- The publication of *Education White Paper 5* on ECD (RSA, 2001): ECD has also featured in the *White Paper on Social Welfare* (RSA, 1997);
- The introduction of Grade R for children aged five to six years;

- The provision of subsidies to ECD sites by the nine provincial social development departments each year;
- The provision of grants-in-aid for Grade R by the nine provincial education departments.

The National Development Plan (NDP) underscores these gains and highlights the role ECD has to play in contributing to future growth. The NDP aims to position South Africa as a developmental state where government takes the lead in propelling the country forward. In the NDP, government recognises the value afforded by access to quality ECD for future quality of life, including:

- Better school enrolment rates, retention and academic performance.
- Higher rates of high school completion.
- Lower levels of antisocial behaviour.
- Higher earnings.
- Better adult health and longevity (NPC, 2013, 297).

ECD in this sense is framed as a wraparound bundle of services that includes but is not limited to education, nutrition, and general health from birth to primary school age. Provision of services at this level is very uneven as it is mostly informal (Taylor & Schindler, 2016), with NGOs working with practitioners tending to dominate the provision of services, especially in rural areas (Harrison 2020). Rural areas are characterised by high rates of unemployment and poverty. Consequently, children in these areas are vulnerable to factors that continue to disadvantage them in the course of their lives, for example, stunting due to poor nutrition and lack of supervised care. Stunting affects about 1 in 5 children (18.5 %) in South Africa, the situation being worse in rural areas (24.5 %).

While ECD has been the joint responsibility of the Departments of Health, Social Development and Basic Education (Taylor & Shindler, 2016), this is currently in the process of changing. As indicated, in line with prioritising the provision of ECD, government is currently concluding a process of shifting the governance of ECD from the DSD to the DBE. This represents an important normative shift from an initial focus on nutritional development and basic childcare to re-centering learning as an essential and practical component of ECD (DBE & National Education Collaboration Trust (NECT), 2021). The educational relevance of ECD has however been acknowledged in South African education policy at least since 2001.

Education White Paper 5 on ECD of 2001 primarily aims to address the issue of incorporating education into the early childhood years, mainly in Grade R (or Reception Year). Research is used as evidence that children from a young age can learn under the correct methods of teaching that are appropriate for their age. The policy is sensitive to past discrimination that occurred under apartheid and recognises the critical challenges South Africa faces in ECD provision as a result, namely: '1) The extent of ECD provision; 2) Inequality in existing ECD provision; 3) Inequality in access to ECD services; 4) Variable quality of ECD services and lastly; 5) An incomplete, fragmented legislative and policy framework for ECD that results in uncoordinated service delivery' (RSA, 2001, Section 1 and Section 2).

In Section 3 of *Education White Paper 5*, a recommendation is made to make Grade R a prerequisite for entry into Grade 1, with this transition phase taking place over five years. Pre-school years are recognised as the foundation stage in which a child can learn particular skills and attitudes that can determine learning in the long run for a child. 'These include the acquisition of language, perception-motor skills required for learning to read and write, basic numeracy concepts and skills, problem solving skills and a love of learning' (RSA, 2001, Section 2.1.1). The policy also proposes a set of rights for children three years and younger and those in the reception year.

The *National Integrated Early Childhood Development Policy* (DSD, 2015) aims to assign various aspects of ECD to the local, provincial and national levels of government. The policy makes reference to the South African National Curriculum Framework for Children from birth to 4 years (DBE, 2015), which emanates from the National Integrated Early Learning and Development Standards (NELDS). The framework's purpose is to guide children from their early years to learn skills, attitudes and behaviours that will be important throughout their educational lifespan and future working lives (DBE, 2015, 36). The six areas of development that are viewed by this framework as critical are: well-being; identity and belonging; communication; Mathematics; creativity and knowledge and understanding of general information (DBE, 2015). Two of the 4Cs mentioned in Section 2 are therefore explicit in the current ECD curriculum in South Africa namely, communication and creativity. Collaboration (identity and belonging) and critical thinking (Mathematics and understanding general information) could also be implicitly present.

The concept note *Vision for Early Childhood Development (ECD) in South Africa* (DBE & NECT, 2021) identifies some of the pressing issues faced by the ECD sector including the provision of childhood learning of good quality, funding for staff and infrastructure and cohesion between the departments involved in ECD provision The note proposes that the ECD function be moved from the DSD to the DBE (DBE & NECT, 2021) and recognises that well trained ECD practitioners can be at the forefront of crucial changes in ECD (DBE & NECT 2021). The document further proposes 'playgroups' as a modality of implementation in which the cognitive, motion, emotional and social aspects of development are given attention (DBE & NECT, 2021).

Over the years, various policy development initiatives have sought to include ECD. The majority of the resulting policies recognise the important role of ECD in the educational lifespan of learners and old assumptions of learning being impractical in early childhood have fallen away. Support for ECD needs however to be improved, beginning with an improved understanding of what ECD entails. Richter et al. (2019) point to the continued existence of differences in understanding of the meaning, content and purpose of ECD among scholars and policymakers and the general public; moreover, Richter et al. suggest that this lack of consensus contributes to misunderstanding, mismatched expectations and a failure to capitalise on the flexibility inherent in the design of existing policies that enable them to be realised to their fullest extent. They argue that this enables a bias towards the characteristic 'ECD centre' as an inherent feature of existing policymaking that inevitably privileges the educational experience of children from better-off families. This view is supported by Ebrahim (2012) whose work suggests that community-based ECD practices have significant benefits but also come with embedded challenges relating to the level of economic inequality in communities where ECD practitioners and programmes attract significant resources and investment that promotes fragmentation and political contestation to the detriment of children's wellbeing and the overall success of a programme of learning.

This brief situational analysis of ECD or pre-primary education in South Africa highlights three elements that are essential when advocating for holistic skills; curriculum, teacher development and socio-economic material conditions. Addressing one or two of these while neglecting another is unlikely to achieve an expansion of the breadth of skills in the South African education system. The section further demonstrates that there are policies in place that promote and enable a holistic breadth of skills to be developed within pre-primary education which would prepare learners to meet the 21st century head-on. New policies are thus not expected to be needed in this regard. Policy analysis that examines alignment of pre-primary education, primary education, and the education system in its entirety with regard to enhancing the breadth of skills would however ensure that wheels are not reinvented and resources are expended in the best possible manner.

3.2 Primary education in South Africa

Primary education is compulsory in South Africa, with an enrolment rate of over 90%. It is therefore the most opportune moment for the state to intervene to ensure that citizens are equipped to operate in society upon completion of this level of education. The South African schooling system begins with Grade R and ends at Grade 12, after which qualifying matriculants can enter into post-school education and training.

The basic building tool available to teachers to develop knowledge and skills in learners is the curriculum and, in South Africa, is specified in the *National Curriculum Statement Grades R-12:*

> *The National Curriculum Statement Grades R-12 gives expression to the knowledge, skills and values worth learning in South African schools. This curriculum aims to ensure that children acquire and apply knowledge and skills in ways that are meaningful to their own lives. In this regard, the curriculum promotes knowledge in local contexts, while being sensitive to global imperatives.* (DBE, 2011, 4*)*

The details of the curriculum including promotion requirements are specified in the Curriculum and Assessment Policy Statements (CAPS) for each subject listed in the *National Curriculum Statement Grades R-12.* The CAPS state its purpose as being to equip learners to participate in society, access higher education, transition to the workplace and provide employers with the profile of competences (DBE 2011, 4). The CAPS do not make explicit mention of 21st century or holistic skills. However, they do aim to produce learners that are able to:

- *identify and solve problems and make decisions using **critical and creative thinking**;*
- ***work effectively** as individuals and with others as members of a team;*
- *organise and manage themselves and their activities responsibly and effectively;*
- *collect, analyse, organise and **critically evaluate information**;*
- ***communicate effectively** using visual, symbolic and/or language skills in various modes;*
- ***use science and technology effectively** and critically showing responsibility towards the environment and the health of others; and*
- *demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation. (DBE, 2011, 5, own emphasis)*

All 4Cs are captured in the aims of the CAPS: creativity, critical thinking, communication and collaboration. It could thus be contended that, holistically, these skills ought to be imbued in learners as they progress through the South African education system. At a basic level CAPS does not hinder or prevent such skills from being taught. At the same time, as part of the front matter of all CAPS documents, these aims are not associated with related guidance regarding the progression and assessment of these skills. Nor is it clear to what extent they are incorporated in how the content of different subjects are taught and assessed.

Advocating for 21st century skills or breadth of skills in the South African education system does not have to mean the introduction of a new curriculum; rather, what could be required is reorienting the curriculum and putting a greater focus on recognising and assessing skills already embodied in the aims of CAPS. Further exploration of the extent to which these skills are being developed and how relevant their development is in the context of what is required for seamless entry into a society within the throes of the 4IR is also needed. The DBE appears to support the idea that a brand-new curriculum is not needed, tabling instead the prospect

of developing a strengthened curriculum at the Basic Education Lekgotla held at the beginning of 2022[2]. The process of developing this strengthened curriculum is already underway, representing a significant advocacy opportunity.

At the lekgotla, two presentations focused on 21st century skills. Dr Mark Chetty's presentation *Developing and Implementing a Modernised Curriculum for 21st Century Skills* advocated for modernising the curriculum with 21st century skills appropriate to the local context (DBE, 2022a). Dr Ria de Villiers' presentation titled *Teacher Involvement in the Entrepreneurship and 21st Century Skills* focused on teachers (DBE, 2022b). Both presentations referred to 'skills for a changing world' adopted in the DBE's Strategic Plan 2020-2024 (DBE, 2020). This suggests that the term 21st century skills is becoming more integrated into the activities of the DBE. This further establishes the reason to refer to 21st century skills when advocating for the holistic breadth of skills within the South African context.

The DBE had also begun introducing entrepreneurship as a subject in schools in order to create a culture of entrepreneurship, empathy and social responsibility (DBE, n.d.). The intention is to build a pro-active, employment-focused mindset among learners (DBE, n.d.). A Sector Plan for Entrepreneurship Education in School: 2030 exists (DBE, n.d.) and is in the process of being rolled out under the auspices of the DBE by the organisation E3[3]. The plan is underpinned by a project-based learning approach and is intended to eliminate poverty and reduce inequality in the South African context (DBE, n.d.). The initiative does not intend to change CAPS, but rather to 'enhance the development of entrepreneurial, problem-solving, and action-oriented mind-sets' within the ambit of CAPS through the use of 'collaborative teaching methodologies' (DBE, n.d. 3). Teacher development is an integral part of this plan, and strengthening the curriculum as proposed at the Lekgotla could draw on what is learnt during the roll-out.

The primary focus in South African education in the past years has, however, been on numeracy and literacy development. The reason for this focus is the poor performance that learners have shown in these areas. For example, one assessment in 2016 found that 78% of Grade 4 learners could not read for meaning. Advocating for a breadth of skills approach cannot ignore basic numeracy and literacy development for two chief reasons. Firstly, resources are finite, and in the South African post-COVID-19 context, are becoming even more limited. Secondly, skills such as communication and critical thinking are hard to imagine in the absence of being able to read, write and count or classically, do arithmetic. Integration of these older traditional skills with newer soft skills is the most pragmatic route at this point. Infusing new competencies into the Foundation Phase literacy programme, as proposed by the NECT (2022) could offer interesting insights. Under these circumstances, ECD has been highlighted for the potential contribution it can make to foster a solid social and educational foundation from which children will be able to thrive (Atmore, 2021). Given that the DBE will be governing ECD as well, it would be prudent to conceive of the strengthened curriculum from pre-primary into primary education and beyond.

There should be some caution about the strong links between 21st century skills and work-readiness, particularly given 21st century skills' conceptual origins in the relationship between business and school leavers. While ensuring that young children are geared towards an understanding of their working futures is an essential component of their preparation for the complexities of a rapidly changing world, this does not occur in a vacuum: existing challenges and constraints that affect children's social and economic experience must be accounted for. So, for example, the chronic challenge of unemployment in South Africa is as much a structural challenge as it is a question of business innovation, meaning that no amount of entrepreneurship education can resolve the constraints brought about by limited economic transformation, the breakdown of

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[2] https://www.education.gov.za/2022BELekgotla.aspx

[3] https://www.ecubed-dbe.org/about-us/

public institutions, and widespread mismanagement of public funds and procurement processes. Being mindful of these tensions is essential to ensuring that the strengthening of the CAPS curriculum to be 'future proof' is accompanied by the development of 21st century skills that facilitate adaptation, social responsibility and the ability to reconcile these tensions and contradictions as young people navigate a world at odds with that described in the curriculum itself.

The process of strengthening the curriculum is also likely to draw on a policy brief developed by National Education Collaboration Trust (NECT) (Eadie, et al. 2020), which recognises the challenge faced by the DBE 'in preparing South African learners with the 21st century skills and competencies required for the future of work, and the consequent need for adjustments to the delivery of education to develop such skills'. The policy brief proposes five recommendations to the DBE with regards to the assessment of 21st century competencies:

1. *Prepare for competency-based teaching and learning by defining key competencies and developing learning progressions.*
2. *Expose, explore, and document student learning by making learning visible.*
3. *Focus on formative assessment as a way of prioritizing student ownership of learning.*
4. *Adapt assessment measures through rubric co-creation, qualitative feedback, and proficiency grading.*
5. *Provide teacher professional development and support to align curriculum, pedagogy, and assessment.*

(Eadie, et al. 2020, 2)

These recommendations suggest a notable shift from current trends in education, which include seemingly rigid adherence to testing regimes that take significant time, energy and resources away from the teaching and learning project. Attention to how current initiatives develop within the education system in a manner that ensures broad based participation could be regarded as a major advocacy imperative. There are currently a number of moving parts which are directed by the DBE but not entirely internal to it either. Moreover, while teacher development is a function of the DBE, material for developing teachers is not developed within the DBE. For example, initial teacher education falls within the ambit of Higher Education Institutions (HEIs) and continuing professional teacher development (CPTD) is championed by many organisations. Ensuring alignment with initiatives to strengthen the curriculum with teacher development therefore requires constant attention.

Beyond the curriculum, the next section presents a broad view of policies in South Africa that have alluded to either 21st century skills or skills for a changing world. It is imperative, for coherent articulation and to ensure the most optimal use of resources, that policy and implementation be aligned. This could be a key thrust of advocacy for breadth of skills in the South African context.

3.3 21st century skills in South African policy

For any country, the first step in determining what kind of education they need involves assessing the skills and knowledge demanded for their development. Policy documents focused on a country's development including short, medium- and long-term goals, can be assessed to reveal a country's priorities (Care, et al., 2016).

As indicated, South Africa's current macro-economic development plan is the NDP (NPC, 2013). The NDP is both an aspirational document as well as a plan of action, envisioning the country as a Developmental State.

It sets out goals that government aims to achieve by 2030. These plans laid out to achieve these goals are related to numerous social objectives, including educational improvement. While the NDP aims to achieve wide ranging improvements across a range of sectors, three core areas of development are acknowledged: 'raising employment through faster economic growth; improving the quality of education, skills development and innovation; and building the capability of a state to play a developmental transformative role' (NPC, 2012, 27). The requisite skills and knowledge to achieve sustained economic growth are also outlined in this document as well as the industry priorities and the number of graduates required per year to achieve the goals of the country are detailed (NPC 2013). The document asserts that 'Education has intrinsic and instrumental value in creating societies that are better able to respond to the challenges of the 21st century' (NPC, 2012, 296). Also, 'Lifelong learning, continuous professional development and knowledge production alongside innovation are central to building the capabilities of individuals and society as a whole' (NPC 2013 296). The NDP recognises the value of education in responding appropriately to the 21st century, and refers to the 21st century as an era of technological change, but stops short of making the specific skills required to navigate this technological change explicit. As a macro-economic, visionary roadmap, the purpose of the NDP is to set the scene and open up a dialogue that specific policy interventions can build on. To this end, it opens up the space to engage with 21st century skills.

Policies focused on specific aspects of governance, including education and the economy, offer further insights into how development, as envisaged by the NDP can be achieved. One such policy, the Green Paper published by the Department of Communications and Digital Technologies (DCDT, 2013) is titled *An Overview of Skills for the 21st Century*. The Green Paper refers to skills that are needed for the 21st century but does not conceptualise 21st century skills as a set of unique skills grouped together. Instead, it broadly refers to the concept of e-skills (DCDT, 2013). The DCDT has since gazetted the *National Digital and Future Skills Strategy* (DCDT, 2020). 21st century skills are defined as skills that will be needed together with digital skills to promote competitiveness (DCDT, 2020). The conceptualisation is thus in line with the Assessment and Teaching of 21st Century Skills (ATC21S) framework: Ways of Thinking; Ways of Working; Tools for Working and Ways for Living in the World, discussed above. Based on the review of the NDP and DCDT Strategy, national policy discourse in South Africa is in line with the concepts of breadth of skills and 21st century skills, and is not limited to the education sector. At the same as has been demonstrated above, and will be seen below, 21st century skills are firmly entrenched in the policy discourse of the education sector as well.

Beyond the CAPS, the DBE and DHET, as the custodians of the South African education system, have published documents that align with the goals of the NDP, and a snapshot of what they contribute is provided below. For example, in the Strategic Plan 2020 – 2024 (DBE, 2020, 22), the DBE states that it aims to provide education to all and lead the schooling system to become one for the 21st century. The terminology '21st Century Skills' is not used, but 'Skills for a changing world' is. However, innovation is regarded as a keystone value in the plan, with a stated focus on 'preparing youth for the 21st century'. By implication, this aligns the aims of the plan with the drive towards 21st century skills. The plan identifies and prioritises those skills and competencies that would enable young people to thrive under 21st century conditions.

The DHET's (2013) *White Paper for Post* School Education and Training (PSET) looks specifically at the teacher development component and considers how teachers are going to be equipped to teach 21st century skills. Teacher development is addressed not only with regard to primary education but includes teachers in the PSET system.

Many 21st century skills have a common element: they involve the heart and mind, with the exception perhaps of digital literacy and skills. These are skills that focus less on what an individual can do with their hands and more on the thinking abilities and values that are inherent in a person (Kim, Raza & Seidman 2019).

Examples mentioned above are communication, critical thinking, teamwork (collaboration) and creativity (Care et al., 2019). In the context of South Africa, based on the small selection of policies discussed here, an acknowledgement of these skills is present, if not exactly uniformly articulated across departments. The DBE Strategic Plan highlights this in noting that there is not always agreement or congruence on the best approaches to take in institutionalising 21st century skills. It is emphasised that South Africa needs to begin shaping its own debates on the meaning and content of these skills, with a focus on how these can advance learning and disrupt inequality. The piloting of a programme to introduce entrepreneurship in schools suggests that there is political will to ensure that the skills are developed in the nation.

The entrepreneurship in schools programme claims that youth require an *entrepreneurial mindset,* which encapsulates the skills and competences needed for the changing world that is fast-paced and complex (DBE-E[3], n.d.). Entrepreneurs require five key skills, the 4Cs, mentioned above together with curiosity - named the big five that underpin a discovery mindset driven by purpose, mastery and autonomy (DBE-E[3], n.d). The current DBE-E[3] intervention is thus underpinned by a definition of 21st century skills which can be articulated as follows:

> 21st century skills are constituted of five core skills; collaboration, communication, critical thinking, creative innovation and curiosity which together are forged by a mindset of discovery driven by purpose, mastery and autonomy.

Formulated along the lines of an accepted DBE programme, this definition presents an opportunity to build advocacy on a commonly articulated conceptualisation of 21st century skills. The efficacy and acceptance of this common language across all sectors of government, and in the education sector specifically does however require examination. While this is a DBE programme, it is also in the pilot stage, and it is unclear the extent to which teachers, district and provincial officials or teacher education and development providers have affinity with the definition and its implications in practice. In addition, digitalisation or digital literacy is not explicitly articulated in this formulation. It could however be inferred and assumed. Digital literacy is however included as a subject area of the 21st century learner considered in the General Education Certificate assessment model (DBE 2022). The pilot of this assessment that is underway in 2022 could provide important lessons and insights into how alignment can be achieved and the skills acquired by learners.

Similar skills do appear across the various department documents, but not with similar definitions. Although the DBE's Strategic Plan does not mention these skills, the *White paper on PSET* mentions communication skills. Without a common language and concepts concerning 21st Century Skills, it is unlikely that a uniform understanding amongst stakeholders will emerge. This does not mean that the concept of 21st century skills should be cast forever in stone. When the concept is critiqued or developed, a common departure point is, however, pragmatic. In this sense, the articulation of 'Skills for a changing world' in the DBE's Strategic Plan 2020 – 2024 (DBE, 2020) may be the terminology of choice for the government of South Africa, and if so, that terminology should be apparent whenever the skills that are placed under this term are used across all government communication. Definitional clarity should be a central priority not only to support cohesive application across departments, but also to ensure that departmental mandates can mutually enforce the articulation and operationalisation of 21st century skills at different levels of curriculum and teacher pedagogy. Conceptual clarity and intention within policy discourse and implementation are also critical for tracking the extent to which aims are being achieved as well as bringing stakeholders on board.

Before turning to how teacher development can contribute to developing 21st century skills as it underpins the sector plan for introducing entrepreneurship in schools, we explore the extent to which the concept of 21st century skills is present in the discourse of quality assurance councils in South Africa.

3.4 Quality assurance councils and 21st century skills

When examining the conceptualisation of 21st century skills across various government departments, it is important to interrogate how the structures that form part of the education system, particularly those responsible for qualifications and standards, envision 21st century skills. These are the quality assurance bodies; the Council for Quality Assurance in General and Further Education and Training known as Umalusi[4], the Council for Higher Education (CHE)[5] and the Quality Council For Trades & Occupations(QCTO)[6], all of which operate under the South African Qualifications Authority (SAQA)[7], the custodian of the South African national qualifications framework (NQF). This section is not intended to be an extensive review of the councils; rather, it provides a brief exploration of the extent to which the concept of 21st century skills is a part of these councils' discourse. This was ascertained by reviewing a selection of documents produced by each body during the past few years.

The term '21st century skills' could not be identified in documents published in the documents reviewed that are available on the Umalusi, CHE, QCTO or SAQA websites. Thus, while the intention to integrate 21st century skills has been identified in South African curricula for ECD and basic education (see Section 3), one might conclude from the term's absence in the quality councils' documents that 21st century skills are either not being assessed or that the assessment thereof is not being quality assured. The absence might also be an indication that the mechanisms the NQF is using to achieve its aims require examining, particularly for being future-proof.

The review of the quality councils is approached from a point of view assessing whether the concept of 21st century skills is recognised and used by government institutions responsible for quality assurance in education, and if the concept is acknowledged, what the relevant skills are. 'Skills for a changing world' is another term that has come up in government communication about skills that are needed for the modern economy, and the use of this term in the documents of quality assurance structures would signify some level of linkage between government departments and a common understanding of the 21st century skills framework, incorporating skills such as the big five and digital skills which are needed to participate in the modern world.

Umalusi

In their latest Annual Report, Umalusi talks of the prioritisation of education and skills as contained in the Medium-Term Strategic Framework (MTSF) 2019 – 2024, with a mention of the attainment of lifelong skills as part of the General and Further Education and Training Qualifications Sub-Framework (GFETQSF) (Umalusi, 2021a, 24). The report does not refer to digitisation or digitalisation as two of the fundamental changes that have taken place in education, accelerated by the COVID-19 pandemic. The skills known as the big five are also not mentioned in the report. In a 2021 Umalusi report on ECD, the terms are similarly lacking (Umalusi, 2021b, 56). While 'learning through play' is one of the new approaches noted, there is no exploration of how this approach could contribute to developing 21st century skills in young children in the Umalusi report. Learning through play does however encourage collaboration. Understandably, at this early stage, numeracy, literacy and cognitive skills are given priority. Under the discussion of 'Implications of findings for the implementation of ECD policies' (Umalusi, 2021b, ix), some of the skills that are mentioned in the curricula of a sample of ECD centres, e.g. the development of self-regulation, language and communication skills,

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[4] https://www.umalusi.org.za/ Council for Quality Assurance in General and Further Education and Training
[5] https://www.che.ac.za/
[6] https://www.qcto.org.za/
[7] https://www.saqa.org.za/

creativity and imagination can be aligned with 21st century skills as discussed above. Life and emotional skills are also mentioned, and interestingly, as pertains to the contextualisation of these skills, two of the centres exhibited an awareness and some inclusion of indigenous and local skills (Umalusi, 2021b, 135). However, it is important to note that all these skills are not framed within a 21st century lens.

The three Umalusi quality assurance reports on the DBE, the Independent Examinations Board (IEB) and the South African Comprehensive Assessment Institute (SACAI) also do not mention the concept of 21st century skills, although some of the skills associated with the framework come up across the reports: specifically, these are problem-solving, reasoning and critical thinking skills (Umalusi, 2021c; 2022a; 2022b).

Council for Higher Education

In the CHE documents, the use of language relating to 21st century skills does not appear until 2020. Earlier, in 2013, terms like transversal or transferable skills appear, and in 2017, the focus was on knowledge and general/practical skills (CHE, 2013, 33). This is consistent with other government departments which do not refer to 21st century skills, apart from the CAPS policy. In 2020, CHE documents still refer to transversal skills, but 21st century skills also appear, in particular under the topic of student governance and academic success. Moreover, critical and creative thinking skills are mentioned, but still not within a specific framework (CHE, 2020, 20). Terms like digitisation and digitalisation also do not appear in CHE documents at this stage. It is not clear whether this is because these are still emergent priorities for the CHE, or if they fall under other aspects of the Council's ambit that are not covered in the reports that were reviewed. Given that higher education institutions (which include teacher education as part of their offerings) have had to engage significantly with technology, digitisation and 21st century skills as a result of the pivot to online learning during the COVID-19 pandemic, it is likely that there these factors will feature in the future work of the CHE.

Quality Council for Trades and Occupations

We reviewed the QCTO Annual Report for 2021 and the webinar on 'From Emergency to Emergence: The Future of Trades and Occupations in the Post Pandemic from 2021' to assess whether 21st century skills appear in the QCTO's communications. In the webinar, no tangible mention was made of 21st century skills. In the Annual Report, we identified phrases like 'emerging skills needs' and 'future skills' with reference to trends in a 'changing world of work', which is similar to the 'skills for a changing world' used in some government documents (QCTO, 2021, 4). Still, there is no reference to specific skills that are related to 21st century skills. Digitisation is mentioned as the council is in the process of this transformation as part of improving its systems and is partially informed by the pandemic and the move to online learning and work.

South Africa Qualifications Authority

In the SAQA Annual Integrated Plan (SAQA, 2021) and Strategic Plan 2020 – 2025 (including the revised version) (SAQA, 2019a; 2019b), there is no mention of 21st century skills or any of the specific skills that form part of the big five framework. SAQA had planned a digitisation process which was put on hold, as indicated in the revised strategic plan. Overall, the concept of 21st century skills seems to be absent.

On the other hand, the National Qualification Framework's (NQF) critical cross-field outcomes are not completely of the big five mark. "Critical Outcomes describe the qualities which the NQF identifies for development in students within the education and training system, regardless of the specific area of content of learning i.e. those outcomes that are deemed critical for the development of the capacity of lifelong learning" (SAQA, 2008, 6). The outcomes are necessary to guide policy makers, curriculum developers,

subject facilitators and students (SAQA, 2008, 6). The critical cross-field outcomes featured strongly in the development of the NQF. They mainly provide support to the NQF by targeting the intended outcomes of the NQF. They are used to identify skills that are required in education and workplace environments regardless of the field of study or industry (SAQA, 2008, 2). The three main goals of the critical cross-field outcomes training are: To support learning that occurs over one's lifespan; enhance critical thinking skills in learners and lastly; to be a source of alignment for the NQF by identifying primary goals for education and training (SAQA, 2008, 2).

Cross Field Education and Outcomes are inclusive of the following points; however, they are not limited to them:

- Identifying and devising solutions that demonstrate the use of critical thinking and creativity.
- The ability to work collaboratively with teams and large organizations and communities
- Good time-management skills and well-organized when performing tasks
- Collecting, analysing, organizing and critically evaluating information
- Communicating effectively using pictures, numbers and language skills in both written and verbal modes.
- Using science and technology effectively and critically showing responsibility to the environment and health of others.
- Demonstrating an understanding of the world as a set of related systems by recognizing that problem- solving contexts do not exist in isolation
  - SAQA, 2008, 7

Concluding remarks on quality councils

It is evident that 21st century skills have not yet been taken up by South Africa's educational quality assurance bodies across the board. Umalusi has identified some of the skills as important, but not within the framework of 21st century skills. There is also no evidence of the organisations subscribing to the concept of 'skills for a changing world' as it appears in the national and education policy discourse as established in this report.

In order to realise the intention encapsulated in the NDP, to educate the nation for a changing world, alignment of policy discourse within the education sector would enhance its implementation and tracking: if the government structures responsible for education, from the DBE to the DHET and the organisations that make up the qualifications machinery sing from the same hymn sheet it is more likely that the political will translate into decision makers incorporating breadth of skills development in policy and curriculum at pre-primary and primary level. Understanding how these different components of the education system plan and operationalise their plans is essential to formulate a coherent and cohesive advocacy strategy that is likely to gain systemic traction.

The next section explores why teacher development could be a useful lever in breadth of skills advocacy and how this might be best achieved.

4   Developing 21st century skills

The 21st century has implications for curricula as well as teacher development. In the 21st century, education needs to provide knowledge that is relevant to the current socio-economic and technological context (Mangena, 2021, 2). Teachers play a vital role as they are responsible for ensuring successful skills transfer. This section will unpack teacher development in relation to 21st century skills.

Developing a nation adept in 21st century skills requires that learners learn the skills, and for this to happen, teachers must be able to teach the skills. This means that teachers must become learners first – grasping the importance and complexity of these skills in order to effectively share and scaffold them in the learning process. In other words, teacher development has to adapt to include this new skills paradigm. Moreover, it is anticipated that artificial intelligence (AI) will take over much of teaching through individualised learning platforms that are becoming more sophisticated and more accessible, and the role of the teacher might switch to that of primarily teaching the human traits that characterise 21st century skills. The DBE-E[3] focus on the big five underpinned by a discovery mindset captures this shift.

The literature suggests that changing social conditions imply a drastic shift in teacher education and professional development, with the focus shifting to equipping new and existing teachers with the knowledge of how to teach critical thinking, problem solving and communication skills (Kim, Raza & Seidman 2019). One of the features of technology-assisted learning is the feedback that accompanies learning at every stage and encourages the learner. However, the transition to AI-supported learning is both incremental and uneven, particularly in a country such as South Africa, with deep social and economic divides. Learners in rural and poorer urban schools are still reliant (and are likely to be for some time) on traditional teaching methods, meaning that traditional teaching practices and pedagogies remain critical. It is important to factor in this variation when talking about the dissemination of 21st century skills in the education system, as it cannot be taken for granted that all learners, teachers and schools are primed to harness the benefits of these skills at present. Rather, it requires stakeholders to consider how, in the absence or limited availability of tools and technologies, 1) learning for the future can still take place, based on high-quality teaching and learning; and 2) what interventions can be developed to equalise the availability of those tools to support learning alongside the critical role of teachers.

When talking about 21st century skills, it is important to note that different institutions and scholars have different understandings of the concept although there is an overlap in the specific skills that have been identified as 21st century skills, as already outlined in this report.

Twenty first century skills are touted as a mechanism for enhancing teacher instructional quality (Kim et al., 2019), however, insufficient context-specific understanding of teaching practice and how teachers might be supported challenges how teacher instructional quality might be improved (Kim et al., 2019). Teacher development and 21st century skills have gained significant attention in developing countries (Chigona, 2015; Chigona, 2018; Deacon, 2016; Musset, 2009). Chigona (2013) articulated the problem that in developing countries, the teacher education path does not adequately prepare student teachers to teach 21st century skills. Yet teacher development plays a pivotal role in education and is even more important concerning the inclusion of 21st century skills in the curriculum. Teacher quality, an outcome of teacher education, is an especially important influencing factor in student performance (Maphosa & Mashau, 2014, 319). In the same manner that learners need to be prepared to acquire a skill set appropriate to the changing society, teachers need to be prepared to develop teaching strategies that are suitable for the inclusion of these skills in the curriculum (Maphosa & Mashau, 2014, 320). Teacher development is categorised into two phases. The first phase is initial teacher education (ITE) or pre-service teacher education, and the second phase is continuing or in-service teacher education. According to Musset (2009), ITE is the first step in the teacher's professional career. For Taylor (2015), ITE relates to all the stages of education and training that lead to a teacher's entry to paid employment in a school. For South Africa in particular, ITE includes a four-year year Bachelor of Education (BEd) degree programme offered by CHE accredited universities and recognised by the SAQA. In addition, South African teachers need to be registered with South African Council of Educators (SACE) to teach at South African schools. SACE registration moreover, assumes that a teacher would embark on continuing professional teacher development (CPTD).

The figure below explains the teacher professional path proposed by SACE, from recruitment to the periodic renewal of the SACE registration (BRIDGE Meeting Highlights, 23 April 2022). Vanencia Chiloane from SACE explained that teachers are required to go through these steps to comply with the processes for Continuing Professional Teacher Development (CPTD) through an accumulation of points.
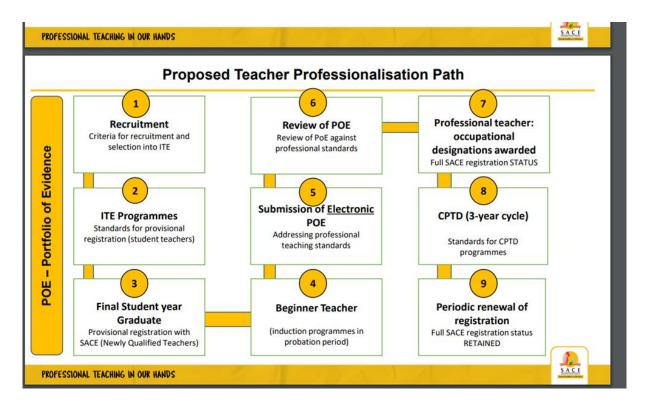

Figure 2: Professional path for teachers.

Teacher development is a fundamental component of the sector plan for entrepreneurship in schools (DBE, n.d.). The plan to introduce entrepreneurship, social entrepreneurship and employability into the basic education curriculum involves training teachers as facilitators as well as educators (DBE, n.d.). As such, a programme of capacitation is proposed for new and existing teachers (DBE, n.d.). This will involve large scale reskilling, underpinned by shifts in knowledge, attitudes and behaviour (DBE, n.d.). According to the plan, the training phase for teachers was due to commence in 2017 (DBE, n.d.). The DBE-E[3] intervention is focused on teacher development which E[3] is rolling out via a Teacher's Guide titled *How Project-Based Learning (PBL) can help teachers to prepare learners for a changing world* (DBE-E[3], n.d.). This guide envisions, 21st century skills to be developed through alternative pedagogic or assessment strategies as opposed to different curriculum content.

At the DBE lekgotla at the start of 2022, De Villiers (2022) explained that the following are underway within the system as part of a teacher development process:

- Self-development: South African Council for Educators (SACE) type 1 and 3: online courses, attendance of The (Professional) Teachers' Lounge, Celebration of teachers in monthly Town Halls;
- Developing experienced 'champions' (on-site coaches) involved in curriculum planning and decision-making;

- Promoting, with the Flemish Association for Development Cooperation and Technical Assistance (VVOB, the creation of champion-facilitated professional learning communities (PLCs);
- Strengthening Digital Classroom Teacher Centres (DTDCs) to support (12 support roles already appointed) teachers, aligned to The Integrated Strategic Planning Framework for Teacher Education and Development in South Africa 2011-2025. This is will be rolled out to 3 600 schools by end of 2022, 13 600 schools by the end of 2023 and all schools by the end of 2024 (De Villiers 2022). Project based learning and assessment for learning are pedagogies to be developed in teachers. It is unclear to what extent initial teacher education programmes have taken up these pedagogies, and how the process seeks to involve faculties and schools of education.

The DBE-E[3] intervention has the capacity to enhance the understanding of how teacher development in this regard might occur in the South African context. The year 2022 is the roll-out of this project to 3600 schools. Key insights and important lessons that could inform advocacy are likely to emerge from this roll-out. The intervention is however being rolled out as a continuing professional teacher development programme (CPTD), rather than an initial teacher development (ITE) programme. In addition, this CPTD programme is by far not the only CPTD programme ongoing within the education system. As such the capacity of teachers to incorporate it in their practice requires exploration.

The DBE-E[3] teacher development intervention is also not overtly focused on digitisation and digitalisation but on developing an assessment regime that will promote the big five in learners; collaboration, communication, critical thinking, creative innovation and curiosity to forge a mindset of discovery driven by purpose, mastery and autonomy. Mabaso (2017) has noted that communication, one of the big five, for example, requires a different perspective in teaching and learning within the era of the digital economy and the level of technological integration. As such, it would be remiss to conceive of the big five or expect mastery and autonomy in the absence of digital literacy. Indeed, teacher development aligned to 21st century skills has been particularly occupied with digitalisation, particularly ITE.

In considering teacher development in the 21st century, it is recognised that teaching practice requires change to fit in with the need to support students' acquisition of 21st century skills. Online teaching and learning have been an important mechanism for the ways that teachers have had to shift their teaching practice and engage students differently. Undoubtedly the current pandemic has forced many countries to begin or accelerate their transition to hybrid forms of teaching and learning enabled by technology. This transition to a digitalised environment is unquestionably the way forward in this era of high-capacity computing and AI.

The 21st century skills in teacher development relate to teachers' ability to equip learners with digital knowledge (Chigona, 2018). Maphosa and Mashau (2014) argue that the 21st century teacher should be able to welcome new technologies into the classroom and integrate them into teaching and learning.

In their research on initial teacher education models, Tunjera and Chigona (2020) introduced two models: Technological, Pedagogical, and Content Knowledge (TPACK) and Substitution Augmentation Modification Redefinition (SAMR). TPACK is a model to account for teacher knowledge on how to effectively teach with technology; this model is complemented by the SAMR model, which can predict that the integration of technology at different levels yields certain outcomes (Tunjera & Chigona 2020). The two models work can work hand in hand for the best possible outcomes, according to Tunjera and Chigona (2020). The limitation of this model is that teachers who are not trained to use technology are less likely to use it in the classroom. The model is criticised for not reflecting critically on the lack of technological resources in rural areas (Chigona, 2018).

Beyond the recognition that teachers have to be equipped with 21st century skills in DHET's (2013) *White Paper for Post School Education and Training* (PSET), no systemic interventions for ITE could be identified. Of course, higher education institutions (HEIs), the providers of initial teacher education in South Africa have the autonomy to develop their own programmes. Universities use e-learning to upload ITE tutorial videos and PowerPoint presentations for content learning. E-learning provides easy access to information from a distance (Chigona, 2013). However, one of the challenges experienced with e-learning is that data is not affordable and internet connectivity is not good in the rural areas. This means that access to teaching and learning resources might not be accessible to trainees and newly qualified teachers.

In summary with regards to teacher development, a few critical aspects have emerged. An important CPTD intervention is underway with DBE backing and support that is focused on developing teachers to support learners in the development of the big five 21st century skills; collaboration, communication, critical thinking, creative innovation and curiosity. Evidence from ITE appears to be more focused on digitalisation or digital literacy of student teachers. There does not seem to be an integrated focus on developing 21st century skills across ITE and CPTD. The revised integrated strategic framework for teacher education and development that is currently being drafted might however address this and needs to be explored. The summit held at the end of 2021 acknowledges that the digital wave has entrenched itself in the socio-economic fabric of South Africa (DBE & ETDP Seta, 2021). A paper commissioned by the National Education Collaboration Trust (NECT) from Sarah Gravett (2021), titled 'Competencies for a changing world' recommends that, clarity on the way forward on teacher education and development is required in relation to 21st century skills.

As such, with regards to advocating for breadth of skills in pre-primary and primary education the relationship between teacher development and learner skills requires further analysis. It might be that teachers require digital literacy but that this is separate from how learners acquire the big five skills for a changing world. At the same time, to what extent will digital literacy be acquired by learners if teachers do not have the competencies or the resources are not available to acquire it. Advocacy around teacher development ought to acknowledge, explore and examine this diverse if not divergent requirements related to breadth of skills development.

5 Conclusion

The purpose of this report was to inform advocacy seeking to enhance and expand the breadth of skills in the South African education system, particularly in pre-primary and primary education. The overview of the Early Childhood Development sector was included to comprehensively present education in South Africa. The focus of the levers of change are however mainly on the primary schooling years since that is where government has announced formal plans for inclusion of 21st century skills into the curriculum. The report aimed to systematically outline the nature and scope of what should be advocated to enhance and expand the breadth of skills in the South African education system. The report further sought to create a clear understanding of who the key stakeholders (including in government, private sector, NGOs) are that could be expected to drive changes in the education system. In particular, the report considered teacher development as a key lever through which change might be driven to enhance and expand holistic skills development within the education system.

To achieve these aims, the concept of 21st century skills as it would frame an advocacy strategy is examined, including the important stakeholders for ensuring its uptake in pre-primary and primary education. The report then provided a brief synopsis of the situation with regard to breadth of skills in the South African

education system. In particular, the situational analysis explored pre-primary education, primary education, South African policy and quality councils with regards to how 21st century skills are positioned. The report furthermore discussed teacher development as a potential lever of change to activate 21st century skills. From the situational analysis and discussion of teacher development, the following points emerged:

- Coherent articulation of and about 21st century skills across policies or policy alignment with regards to conception and intention is emergent but not seamless.
- Alignment across different agencies in the education sector – basic education, higher education and qualification and quality assurance agencies – is emergent but not seamless.
- A 'new' curriculum is not necessarily needed. However, strengthening the current curriculum, a process already underway, is a crucial undertaking that demonstrates political will in the South African context.
- Basic skills cannot be ignored while developing the breadth of skills in the South African context.
- Optimal use of resources is fundamental to the success of enhancing breadth of skills in the South African context.
- Existing processes should thus be harnessed, for example, the Sector Plan for Entrepreneurship in Schools and the pilot of the General Education Certificate (GEC) are likely to hold valuable lessons with regards to teacher development and enhancing the breadth of skills in the South African education system.

Proposed pathways for how to enhance the development of 21st century skills and the stakeholders that are essential for these pathways are likely to emerge from a deeper understanding of how these key take-aways might be developed.

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