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Assessment Practices to Support the Development of Learner Competencies for a Changing World

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Executive Summary

This policy brief recognizes the challenge faced by the Department of Basic Education (DBE) in preparing South African learners with the 21st century skills and competencies[1] required for the future of work, and the consequent need for adjustments to the delivery of education to develop such skills. The document focuses on the need for updated assessment practices to support the General Education Certificate (GEC) being piloted in 2021. Five key recommendations are proposed to the DBE regarding the assessment of 21st century competencies:

1. Prepare for competency-based[2] 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.

[1]There is varying nomenclature relating to 21st century skills and competencies, with nuance in the definitions agreed on by jurisdictions and frameworks. For the purposes of this policy brief, we use 'skills' and 'competencies' interchangeably, as do we use '21st century education' or 'education for a changing world'. If these recommendations are taken up, one of the first steps would be for South Africa to agree on and define local nomenclature.

[2]While the term 'competency-based' has been used in this report, in keeping with terminology in much of the literature on 21st century education, it is important to note that we are not proposing a replacement of the existing 'subject-based' curriculum with a 'competence-based curriculum' in South African schooling. This shift would entail structuring the curriculum around competences, rather than around the disciplines, and it is part of a broader conversation about the design of the curriculum.

Introduction

Over the next few decades, Africa's labor market will likely be characterized by increased technological growth that requires individuals, businesses, and governments to be flexible and adapt to change. According to the World Economic Forum, 9% of African employers perceive inadequate workforce skills as a major constraint, furthermore, South Africa is only meeting 63% human capital optimization (WEF, 2017). Ensuring the "future-readiness" of curricula is one of the key levers to strengthen the education system. This has serious implications for the education sector and its role in equipping young people for jobs of the future given that "the changing nature of work in Africa will increase uncertainty and the pace of change, raising the premium on skills that help young people be adaptable, resilient, and creative problem solvers" (Mastercard, 2020). In South Africa, jobs of the future will be concentrated in STEM and ICT fields and will require graduates to either transition into tech and AI enabled roles or to create opportunities as entrepreneurs (McKinsey, 2019). However, preparing for the future is not only about having the right technical skills. Collaborative work will be a critical part of the Fourth Industrial Revolution (4IR) thus technical skills need to be complemented by critical thinking, creativity, cognitive flexibility, and EQ (WEF, 2017).

The South African Educational Context

Like many education systems globally, there is growing acknowledgement that the South African education sector is not adequately equipping students with the skills and competencies to meet the demands of our fast-changing world (DBE, 2016; NDP, 2012). Research by the South African Department of Higher Education and Training shows that there is a skills mismatch between employers and school-leavers in South Africa. Shortages in individual basic competencies were shown to be particularly acute for reading comprehension, active listening, speaking, writing, critical thinking, and active learning skills (DHET, 2020). Emerging competencies for which demand is expected to increase in South Africa include analytical thinking, creativity, complex problem solving, resilience

and emotional intelligence, amongst others (WEF, 2017). If the South African economy is to cope with substantial changes in the demand for certain skills because of the Fourth Industrial Revolution, "the types of skills obtained by labor market entrants will need to change" (DHET, 2020).

In response to this growing body of research and increasing acknowledgement of the crucial importance of ensuring that these 21st century competencies are systematically and deliberately incorporated into education, the Department of Basic Education (DBE) has taken several steps toward competency-based education in K-12. These efforts include the Three Stream Model, Focus Schools, the National Curriculum and Assessment Task Team (NCATT), the introduction of new subjects (e.g., Robotics), the E3 initiative (Employability, Entrepreneurship and further Education) and the consideration of a Competency-infused Curriculum (CiC). Interventions to date have focused on attempting to formally incorporate these skills and competencies into the curriculum as well as into teaching practice, but efforts to understand how best to evaluate or assess the development of the competencies are lagging. South Africa runs the risk of a lack of alignment between curriculum, pedagogy and assessment, both at classroom and national levels (Care, Kim, Vista, & Anderson, 2018) leading to confusion and ineffective practices throughout the system.

The Department of Basic Education has made progress in considering alternative assessment practices. One such approach has been the introduction of the General Education Certificate (GEC), a new method of assessment in the General Education and Training (GET) band that provides grade 9 learners with a qualification that will give them the option of choosing between alternative pathways for the completion of secondary school, Dr. Chetty, Director of National Assessments at the DBE, notes that "The GEC is an important national initiative that will support and strengthen the effective assessment of South African learners' 21st century skills and knowledge to help guide their future study and career pathways" (DBE, 2021). The GEC's assessment approach proposes a model that enables a shift in assessment and school-level credentialing.

Currently school assessments and credentials emphasize the acquisition of academic knowledge. The GEC calls for a shift in emphasis to include 21st century skills and competencies (known as 'General Capabilities' in the GEC) as well as unique learner aptitudes and inclinations (known as 'Aptitudes & Inclinations' in the GEC), resulting in equal weighting between the three focal areas. In July 2020 the Basic Education Minister, Ms. Motshekga announced that the DBE GEC policy framework be sent to Umalusi, the quality council authority, for review and approval. The GEC is scheduled to begin piloting in 2021, with initial rollout planned for 2023 (DBE, 2020).

In actualizing the GEC, one key challenge noted by the DBE has been understanding how best to evaluate the competencies listed under General Capabilities (metacognition, self-reflection, self-evaluation, critical thinking, creative thinking, collaboration, problem solving), and how to track learner progress over time from basic to more complex forms. This challenge is unsurprising and is indeed not unique to South Africa. Reiterated by Care and Kim in the Brookings Institute report on the assessment of 21st century skills, "The assessment of 21CS, still in its infancy, does not lend itself easily to the modes of assessment that typically populate summative assessment approaches" (Care et al., 2018).

This policy brief provides a number of recommendations to the assessment of 21st century skills that could be considered by the DBE in the GEC pilot. The recommendations focus specifically on the competencies included in the 'General Capabilities' that are being developed via the E3 initiative. E3 is a Playful Project-based Learning intervention being rolled out across schools in South Africa that uses learner-centered Active Learning Pedagogies such as Learning through Play and Project-based Learning in the existing CAPS curriculum. These real-life and relevant projects better prepare learners to thrive beyond school by deliberately fostering 21st century competencies. Given the relatively emergent understanding of 21st century assessment practices, we combine the recommendations with reference to relevant literature and best practice, providing two

case studies in the appendix. We lay a foundation for the recommendations provided by commencing with sharing emerging learnings and limitations of the assessment of 21st century skills.

Emerging Learnings And Limitations Of Assessment Of 21st Century Skills

Moving from aspirations to implementation

Despite global, national, and district aspirations toward a 21st century skills learning agenda, full-scale implementation at the school and classroom levels has been slow. Whilst countries across the globe are broadening their educational provision beyond content mastery and academic achievement, the degree to which education systems' aspirations for the development of 21st century skills have translated to implementation varies significantly.

Common challenges

In a series of studies on behalf of UNESCO and The Brookings Institution on global implementation of 21st century skill-based curriculums, Care et al. (2018) unearthed many challenges faced by educational systems in moving from curriculum development to effective implementation of competency-based pedagogy and assessment practices. While many countries have initiated or adopted competency-based curriculums, the practical considerations of how to teach and assess competencies have lagged behind (Care et al., 2018). In general, the educational systems of the countries were found to lack:

- Clear understandings of 21st century skills.
- Developmental, learning progressions of competencies over time.
- Identified best practices for assessment, given that the skills are often invisible to teacher observation and difficult to measure on summative assessments.
- Teacher professional development in how to teach and assess 21st century skills.
- Support in terms of access to assessment tools and technologies.

Rethinking assessment

The shift to competency-based curriculums has necessitated a major rethink of the purpose of assessment and the means to conduct it: "the current assessment system, which is used for measuring academic scores, cannot adapt to the current demands of developing innovative skills...it is clear that if systems intend to assess transversal competencies, a change in perspective on educational assessment is needed" (Care et al., 2019). There exists a tension between the prioritization of formative assessments for the purpose of providing qualitative, descriptive feedback and large-scale, quantitative assessments for public accountability (Towards, 2018). There is still a tendency to utilize 20th century pedagogy and assessments, such as direct teacher to student instruction, summative tests and high stakes standardized exams, in the teaching of 21st century skills (Care et al., 2018). These methods do not align with the need for more student-driven learning and informal, classroom-based formative assessments for competency development.

Prioritizing formative assessment

Assessment policies and practices in competency-based curriculums have moved away from the use of 'one size fits all' summative and standardized assessments used to measure student content knowledge to embrace formative assessment practices, such as visible thinking routines, reflection, self and peer assessment, and co-creation of rubrics to define expected learning goals and outcomes. These formative assessment practices are infused into the learning process at multiple points, are often co-constructed by learners and teachers, and utilize an asset versus deficit-based language.

Learning from and with others

Some effective strategies for 21st century skills assessment have been recently developed; however, these assessments are in their infancy and their efficacy in promoting and measuring 21st century competencies will not be fully known for some years

to come. There is currently little substantial evidence on the most effective tools and approaches to delivering 21st century skills (Joynes, 2019). With that in mind, there are some countries further down the implementation path that are beginning to highlight best practices that have worked for them from which other countries in the early stages of developing or implementing a competency-based curriculum, such as South Africa, can learn from.

Best practices in 21st century skills assessment are shared below; however, it should be noted that "while there are common elements and building blocks of 21st-century skills across cultures, there are also significant differences, particularly in relation to interpersonal skills, such as effective communication and collaboration" (Mastercard, 2020). Any assessment policy or practice "requires an understanding of the intricacies of intercultural communications and culture-specific norms" (Mastercard, 2020). With these limitations in mind, these recommendations are provided as entry points for discussion about what policies and practices would best support South Africa's E3 initiative with respect to assessment of defined 21st century skills developed via playful project-based learning.

Recommendations & Alternatives

1. Prepare for competency-based assessment

1.1 Select, define and understand the key competencies

An examination of competency-based curricula around the world reveals variation in the types of '21st century' skills selected for inclusion and the description of those skills (Joynes, 2019). In South Africa, the GEC lists the 'General Capabilities' which have been selected as an area of focus for the new competency-based curriculum. With the curricular core competencies identified, the next challenge to implementing pedagogical and assessment practices based upon the competencies is the need for clear definitions and understanding of the selected skills (Care et al, 2018). The General Capabilities need to be clearly defined and described in such a way that the educational community would recognize attainment and application of the skills.

1.2   Develop learning progressions to identify expected competency levels

In order to design and develop effective assessment tools for use in competency-based learning, it is necessary to identify the behaviors that are expected for each competency at various stages of development: "without an understanding of what increasing levels of competency in a skill look like, it is not possible to draft the assessment tasks that will target different levels" (Care et al., 2018).

The use of developmental continua, or learning progressions, are beginning to be used in progressive educational systems to provide "guidelines for teachers and students to understand the processes of learning in particular domains by identifying appropriate competency levels and reasonable aspirations for students at different grade or age levels; not only do they underlie curricula, but they are used as frameworks to locate assessment tasks that

sample student skills at increasingly difficult levels of complexity or sophistication" (Care et al, 2018). Teachers need to have access to skill progression descriptions in order to identify behaviors that indicate differing levels of skill or knowledge and to design appropriate instruction. Students also need access to descriptions of how skills progress over time so that they can set goals and have identified means to work towards those goals. Learning progressions also enable more efficient data collection, usage and aggregation within and across schools as they ensure consistency in language and skill acquisition (Care et al., 2018).

Generating these skill progression frameworks, however, has proven to be difficult given the history of schooling as being the transmission of content not the development of competencies, as well as the more 'hidden' nature of human competencies. It can be argued that progression frameworks of this nature attempt to simplify notoriously complex competencies and may in fact be counterproductive to competency development. According to Care et al. (2018), "how to establish education standards–what students should know and be able to do–in the absence of a long history of teaching and learning these competencies is a hurdle to curriculum development and assessment." However, there are some educational systems that have developed detailed profiles or standards of competency progression showing increasingly complex acquisition and application of skills. One such system is found in British Columbia, Canada (Appendix B). While British Columbia's learning profiles are becoming recognized globally for their description of how 21st century skills develop over time, they reflect Canadian culture and the B.C education context. South Africa needs to generate its own learning progressions, notably for competencies related to interpersonal or intrapersonal skills, that are reflective of its unique culture.

2. Expose, explore, and document learning

2.1 Utilize thinking routines to make student learning visible

There is a recognized challenge in measuring 21st century skills through traditional summative assessments in light of the more 'hidden' nature of competency growth versus knowledge (content) acquisition. To be able to develop and assess skill competency, it is essential that teachers support students in making their learning and thinking visible. You must first, before anything else, make visible what is often invisible. The Project Zero team at the Harvard Graduate School of Education is one of several groups that has done extensive research around thinking routines that can prompt, scaffold, and support students' thinking. By equipping students with different routines, or mechanisms, to make their thinking visible, students can develop a variety of thinking dispositions that nurture their understanding. Ron Ritchart and Mark Church (2020) have created an understanding map that outlines thinking dispositions, such as "building explanations and interpretations" and "reasoning with evidence," that can help build students' understanding (p. 28).

Once teachers have specified the kinds of thinking that will help their students engage with content, they can identify thinking routines that can help foster that thinking. Ritchart and Church (2020) explain that thinking routines "operate as tools to prompt and promote thinking, as structures that reveal and scaffold thinking, and through their use over time routines become patterns of behavior" (p. 28). They elaborate how thinking routines can help transform student learning from a process of absorbing others' ideas to actively uncovering one's own ideas and making connections to their thinking (p. 32). As discussed earlier, to monitor and assess students' progression in their thinking, teachers and students need to focus on the process of learning, not just the products. Whilst making learning visible using traditional teaching approaches could pose several challenges to teachers, E3's efforts to bring Learning through Play and Project-based Learning to classrooms across South Africa offer teachers and students ideal opportunities to emphasize and evaluate the process of learning. Through these interactive learning experiences, students are given opportunities to deeply explore, discuss, and assess their thinking as well as their peers'.

## 2.2 Involve students in documenting their learning to help them track and evaluate progress

Once teachers have utilized thinking routines to help make students' thinking visible, they must document their thinking so that they can track students' progress in their learning over time. Ritchart and Church (2020) detail how "documentation includes not only what is collected but also the analysis, interpretations, and reflections of the thinking and learning that took place" (p. 27). The documentation of thinking and learning requires that teachers and students be vigilant observers and that students engage in self-reflection around their learning process. Important to the South African context, the assessment load should not fall predominantly on the teachers, as is the norm currently. Rather, teachers should share the assessment load with their students, especially in the large classrooms so common in public schools, by having the students engage in project-based work in small groups. Doing so will enable the students to engage in hands-on learning and deep conversations that will help make their learning more visible than in a whole class format. These small groups can help students partake in documentation through self-reflection and peer assessment, giving the teacher more flexibility to move around the classroom, observe, and support student learning.

The alternative, having the teacher lead both whole class instruction as well as manage the full assessment load, is unsustainable for already stretched teachers. Documentation of student learning can take a variety of forms: student written work, audio or video recordings of student reflections or presentations, pictures of student work, and teacher observations. Educate!, a nonprofit social enterprise tackling youth unemployment in East Africa, is a pioneer on the continent in documenting youth's skills progression: they utilize rubrics and observations of behavioral tasks to assess and document 21st century skill development (Appendix A). Exit tickets offer South African teachers another simple yet effective form of

documentation. They can be assigned to students for a few minutes at the end of each class and include reflective writing questions, such as "What is something you learned today? What challenged you? What kinds of thinking did you use to help you with this task? What would you do differently next time?"

Portfolios of student work are particularly useful for documenting progress in competency-based learning through formative assessment over time. Compared to traditional assessments methods, portfolios allow teachers, students, and parents to have a holistic view of students' development within and across school years, particularly around learning progressions on 21st century competencies. Students actively partake in the development of their portfolios, contributing artifacts and evidence of their capabilities through written work, multimedia content, and self-reflections on their learning experience. Portfolios help students set goals for their learning, devise strategies to achieve those goals, and engage in metacognition around the tools that enhance their learning.

In digitally connected classrooms, e-portfolios, such as Seesaw, have facilitated the process of documenting multimedia evidence of student work and competency development. E-portfolios have supported students in building their digital fluency while fostering student agency by equipping them with the tools to track their own learning. Early evidence shows that e-portfolios engage students more in their learning, incorporate more 21st century skills into the classroom, and foster technological skill development (Kilbane & Milman, 2017, p. 105). While e-portfolios are not currently a practical solution in the South African context, their growing utilization and ability to capture a more holistic view of students' development signal an opportunity to incorporate paper-based portfolios into the assessment practices in South African schools.
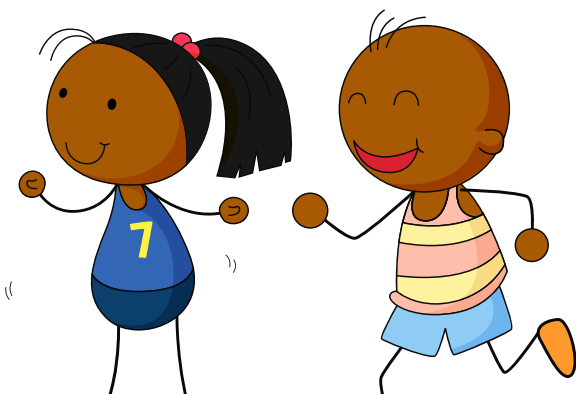
3. Focus on formative assessment

3.1   Prioritize student reflection and self-assessment to promote ownership of learning

Student progress in relation to defined learning standards is primarily documented and evaluated by students and teachers through formative assessment measures in countries with competency-based curricula. Research on assessment emphasizes the importance of students developing reflective language and metacognition skills to engage in effective self-assessment; specifically, it is important that South African students gain the ability to assess their own strengths; create realistic and achievable goals; construct a clear plan to reach their goals; and provide illustrations of their learning through documentation (Developing, 2019).

Learning from British Columbia's 5year journey into the implementation of a competency-driven curriculum in grades K-9, guidance for South Africa to consider in implementing formative assessment include (Developing, 2019):

1. Ensure formative assessment is ever-present: Students need to be constantly mindful of their growth in the core competences through awareness and self-reflection, self-assessment and documentation of growth.
2. Give it time: It takes time for students to develop and internalize the language and expectations of formative self-assessment.
3. Have high expectations of learners: As self-reflection becomes a natural part of the learning process, it promotes much more individualization, inclusion, and student ownership of learning. Students will be better able to describe who they are as learners (metacognition), document their progress, and share their accomplishments.

Maintaining the status quo on South African assessment, and having students not fully enrolled in self-assessment and reflective practices misses a critical learner development opportunity. It is this student ownership of the assessment process that cultivates engagement, motivation, agency and, ultimately, growth and mastery of competencies that foster success in life-long learning and work.

In their efforts to monitor and evaluate the impact of their skill development programs, Educate! also utilizes self-reported personality statements, measured with Likert scales. They draw best practices from a variety of published tools, ensuring they are valid in their local context by making and field-testing minor updates (Appendix A). Similarly, when South Africa surveys global approaches to student reflection and self-assessment, they must validate the tools and ensure they are locally appropriate.

4. Adapt assessment measures

4.1   Co-create project rubrics with learners to foster metacognition, motivation and engagement

Rubrics have become a commonly used method, in particular in project-based learning, to provide students with specific expectations about final products and learning outcomes. Typically, teachers generate these rubrics with little to no input from students and with a focus on the end product not the process of learning. John Hattie (2012) in his highly regarded book *Visible Learning for Teachers*, describes an alternative approach for consideration, suggesting how inviting students to co-construct success criteria deepens the learning process and a student's ability to determine their own success. As with the use of formative assessment practices to foster student growth in 21st century skills, it is important that South African students collaborate with teachers to co-construct criteria of how they will be assessed on the processes (skills acquisition) and products of a learning experience. When students become more involved in the assessment process, they become more invested and take greater ownership of their learning: "ownership is the foundation of student agency; with greater ownership comes increased motivation, engagement, and self-awareness (metacognition), building students' capacity to direct their learning" (Developing, 2019).

4.2   Adopt proficiency grading and qualitative descriptions of student performance

Many countries with progressive educational systems are moving away from a reliance on summative, standardized testing using letter grades to indicate level of content-specific knowledge, to the use of formative assessments utilizing proficiency scales to show understanding of essential concepts and competencies. At the National Center for the Improvement of Assessment, in their resources developed to support best practices related to instructing and assessing 21st century skills, it is recommended that teachers not use student scores for 21st century skills in their grade books or on formal reports (Evans, Thompson & Brandt, 2020). Quantitative measurement and reporting of core competencies is not recommended; the focus instead should be on qualitative descriptions of student performance from less to more sophisticated.

Many studies in recent years have highlighted the challenges with grading and reporting on students' 21st century skills in large part due to a lack of clear grade-level standards that define proficiency for most 21st Century skills (Assessing, 2020). Also, as stated above, honest student reflection and self-assessment is a key component of 21st century skill development. If these self-assessments were to be tied to grades, it is likely that student responses "would suffer from response-set biases, such as social desirability bias, as soon as they realize their grades depend on their own and other's assessments…" (Assessing, 2020).

The extensive research conducted to date about the benefits of formative assessment and how students learn more from written feedback than grades is important to remember (Black & Wiliam, as cited in Assessing, 2020). South Africa should make use of narrative report card comments incorporating descriptive, qualitative feedback and proficiency scales in place of letter grades to allow for contextual descriptions of tasks students were asked to complete and how they applied 21st century skills to meet the demands of those tasks.

5. Provide teacher professional development and support to successfully align curriculum, pedagogy and assessment

The shift of ownership in assessment from teachers to students requires teachers to unlearn traditional pedagogical practices that prioritized evaluating the products of learning over the process. A significant mindset shift in terms of how teachers view their role and responsibilities is often required. In British Columbia, teachers were given supportive professional development and resources, including skill progression profiles and exemplars of competency-based learning activities and assessment practices, in order to help teachers gain the skills and mindset needed to successfully implement a competency-based curriculum. South African teachers should be provided with upfront and ongoing professional development on the following pedagogical practices to support student reflection and self-assessment of 21st century skills (Developing, 2019):

1. Develop a common language: Help students to develop the language of 21st century skills through authentic experiences and learning opportunities, found in project-based or inquiry learning.
2. Make 21st century skills explicit: Intentionally notice, name and connect the 21st century skills with student learning as it occurs.
3. Systematically develop metacognition: Ask open-ended and probing questions to prompt student self-reflection and acquisition of the language and skills to increase metacognition.
4. Guide students to understand 'why' 21st century skills are important: Cultivate teacher-student and student-student conversations about 21st century skills and the natural connections between them. Show how 21st century skills are often interconnected and are foundational to all learning.
5. Promote student ownership: Promote student

ownership by providing multiple opportunities for students to document and access their reflections throughout the year.

a. Utilize Universal Design for Learning principles: allow for ongoing documentation utilizing multiple means of engagement, representation, and expression (dramatizations, illustrations, lists, stories, graphic organizers, videos, audio recordings, etc.)
b. Encourage students to frequently express their strengths and stretches in relation to the 21st century skills.
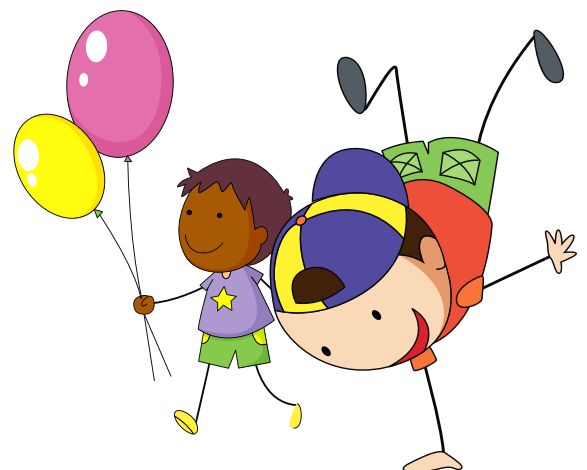
Conclusion

There is clear commitment and keen interest in adopting new pedagogical approaches and re-imagining curriculum as evidenced by a number of different initiatives and programs in 21st century skills development in primary and secondary education. The challenge for South Africa and the globe now comes in implementation, monitoring, and evaluation of these competencies. This document provided a brief overview of global trends, a summary of the South African educational context, emerging learnings from around the world on assessment of 21st century skills and potential limitations, and a series of recommendations and alternatives for the Department of Basic Education. These recommendations are grounded in empirical research, case studies from across the African continent and abroad, qualitative research, and forecasts on the future of work. As South Africa faces significant opportunity for growth, it is critical to ensure that youth have the skills determined as essential for success in a changing world - and the ability to measure and assess these skills plays a key role in achieving this.

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Appendices

Appendix A

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Case Study:

Educate! (Uganda, Rwanda, Kenya):
A leader in tackling youth unemployment and fostering 21ˢᵗ century skills in Africa

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Context

Educate! is a nonprofit social enterprise based in Uganda, Rwanda, and Kenya that "tackles youth unemployment by partnering with youth, schools, and governments to design and deliver education solutions that equip young people in Africa with the skills to attain further education, overcome gender inequities, start businesses, get jobs, and drive development in their communities. Our goal is to design skills-based, post-primary education and employment solutions which impact youth life outcomes sustainably and at scale" (Educate!).

Approaches to Learning and Assessment

In particular, Educate! helps youth build 21ˢᵗ century skills (using the Six Cs framework), formulated by the New Pedagogies for Deep Learning initiative: character, citizenship, collaboration, communication, creativity, and critical thinking (Fulan & Scott, 2014, p. 6-7). Educate! supports youth through four stages of skill progression: 1) *knowledge development,* 2) *practice and application of skills,* 3) *belief shifts, and 4) skill development* (with practice and belief sometimes switching places in this dynamic progression). An external randomized control trial of Educate!'s flagship skill development program in Uganda showed significant impact on grit and self-efficacy (character), creativity, and prosocial attitudes (citizenship), as well as education and hard-skill outcomes (Chioda & Gertler, 2019).

To measure youth's progression in their skill development, Educate! carries out internal program evaluations and partners with academic researchers for external evaluations, both utilizing youth self-reports and observations of behavioral tasks linked to specific skills. Educate! draws best practices from a variety of published and validated tools. Some examples of these tools and the skills they measure include: the Chinese Positive Youth Development Scale (character, critical thinking, communication); the Education Development Centre Work Readiness Assessment (collaboration, communication, critical thinking, character, citizenship); and the Save the Children International Social & Emotional Learning Assessment (character, citizenship). When adopting best practices from external tools, Educate! ensures that they are valid in their local context by making and field-testing minor updates.

Educate! has developed a skills matrix that positions indicators and metrics within their Six Cs framework, which they use to assess youths' skill progression from knowledge development to skill development. These metrics are typically derived from self-reported personality statements, measured with Likert scales, and behavior-related tasks from resources like the ones mentioned above. The observed behavioral tasks are assessed using rubrics and include: a negotiation game, involving role-playing a negotiation scenario; a persuasion game, where a respondent makes a persuasive case in one minute; and a creativity game, in which the respondent has one minute to come up with as many uses as they can think of for a pole. Educate! is continuously iterating to make their skill assessments more task-based. These assessment tools help Educate! measure the impact of innovations in building the Six C competencies (J. Littman, personal communication, April 8-14, 2021).

Appendices

Appendix B

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Case Study:
British Columbia, Canada:
A global leader in implementing a competency-driven curriculum

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Context

In 2016, the British Columbia Ministry of Education began the process of enacting a new concept-based, competency-driven curriculum for grades K-12 (Developing, 2019). British Columbia's new curriculum is affecting teaching, learning, and the way teachers approach assessment. Throughout K-12, student progress in relation to the learning standards is now being documented by both students and teachers mainly through ongoing, iterative formative assessment.

Beginning in 2018, the Ministry of Education launched a K-9 Student Reporting Policy Pilot. This pilot program supports new approaches to reporting including a greater emphasis on student reflection and self-assessment of the Core Competencies to increase student engagement and ownership. Teachers collaborate with students to select evidence of their learning and reflect on their growth, utilizing formative feedback that focuses on what a student can do and what they are working toward. The Ministry of Education does not prescribe how the core competencies should be self-assessed. In recognition of contextual differences, schools and districts determine formats and procedures, ensuring that the self-assessment process is meaningful and builds student ownership of the core competencies.

Approaches to Learning and Assessment

Core Competency Profiles

Profiles have been established to facilitate student reflection, self- assessment and goal setting; these profiles also provide teachers a language to use with their students and families when discussing competency growth. The profiles help to define the competency level of students so that teachers can better design personalized learning experiences for their students. The skill progression frameworks guide the learning and teaching of competencies as they define what is expected of students as they grow older.

However, the profiles do not align with grade levels but are progressive and additive. As students move through the profiles, they build upon competencies from earlier profiles while developing new skills. Students may also find themselves performing across profiles, reflecting aspects of more than one profile at a time. Furthermore, as the development of core competencies begins at home and then continues throughout life in both formal and informal settings, the skill progression profiles need to be frequently shared with families to extend the language into the home and include families in the development of their children's competencies.

The Ministry of Education has created profiles for multiple core competencies. An example is provided here of the profiles students and teachers use to guide goal setting and monitor progress of the 'communication' competency. Within these profiles are 3 facets of communication deemed to be of significance: connecting and engaging with others, focusing on intent and purpose, and acquiring and presenting information. All profile statements are expressed using first-person voice in order to make them as relatable to students as possible.

Profile	Description
Profile one	**In a safe and supported environment, I respond meaningfully to communication from peers and adults**
Profile two	**In familiar settings, I communicate with peers and adults** I talk and listen to people I know. I can communicate for a purpose. I can understand and share basic information about topics that are important to me, and answer simple, direct questions about my activities and experiences.
Profile three	**I communicate purposefully, using forms and strategies I have practiced.** I participate in conversations for variety of purposes (eg. to connect help, be friendly, learn and share). I can communicate clearly about topics I know and understand well, using forms and strategies I have practiced. I gather the basic information I need and present it.
Profile four	**I communicate clearly and purposefully, using a variety of forms appropriately** I share my ideas and try to connect them with others' ideas. I am an active listener - I make connections and ask clarifying questions when appropriate. I can plan ways to make my message clear and engaging for my audience and create communications that focus on a variety of purposes and audiences. I acquire the information I need for specific tasks and for my own interests and present it clearly.
Profile five	**I communicate confidently, using forms and strategies that shows attentions to my audience and purpose.** In discussions and conversations. I am focused and help to build and extend understanding. I am an engaged listener; I ask thought-provoking questions when appropriate and integrate new information. I can create a wide range of effective communications that feature powerful images and words, and I identify ways to change my communications to make them effective for different audiences. I use my understanding of the role and impact of story to engage my audiences in making meaning. I acquire information about complex and specialized topics from various sources, synthesize it, and present it with thoughtful analysis.
Profile six	**I communicate with intentional impact, in well-constructed forms that are effective in terms of my audience and in relation to my purpose.** I contribute purposefully to discussions and conversations. I sympathise, deepen, and transform my own and others' thinking. I can weave mutliple messages into my communications; I understand that my audience will use their own knowledge and experiences in making meaning. I show understanding and control of the forms and technologies I use; I can acquire, critically analyze, and integrate well-chosen information from a range of sources.

Changes to Reporting

Letter grades have been dropped in grades K-9 and replaced with a four-point proficiency scale that allows for more qualitative, strength-based reporting of student attainment of core concepts and competencies. At least one formal report during the year must include student self-assessment on their core competency development. While formal written reports are legally required, informal reporting has become much more prevalent. Students document and reflect on their learning and skill growth in the core competencies on an ongoing basis utilizing a variety of methods (audio, visual, print). It is now common practice to have students upload evidence of their learning to eportfolios, using platforms such as Seesaw and FreshGrade, to share with students, educators and their families.

Profiency Scale	Emerging ▶	Developing ▶	Proficient ▶	Extending
	The student demonstrates an initial understanding of the concepts and competencies relevant to the expected learning	The student demonstrates a partial understanding of the concepts and competencies relevant to the expected learning.	The student demonstrates a complete understanding of the concepts and competencies relevant to the expected learning	The student demonstrates a sophisticated understanding of the concepts and competenicies relevant to the expected learning