

EVIDENCE FOR SYSTEM TRANSFORMATION

21ST CENTURY SKILLS

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1. Background

In recent years, attention has increasingly focused on learning that extends beyond traditional academic content. Today's world demands skills to grapple with globalization, increasing mobility and migration, political unrest, environmental degradation and evolving civic and social dynamics (GPE 2020b). As economies change, so do the skills needed for the labor market, with growing overlap between the skills for formal or informal employment and those for learning, civic engagement and personal development (Mastercard Foundation 2020). Many education systems, however, continue to rely on rote pedagogies and passive learning (WEF 2020). In addition, the COVID-19 pandemic has drawn attention to students' and teachers' emotional and psychosocial well-being, underscoring the importance of supporting students' and educators' social-emotional skills, which requires a more holistic focus than traditional approaches to teaching and learning.

Box 1. Defining 21st century skills

The term **21st century skills** (21CS) encompasses a range of skills and competencies to prepare learners to live, think, learn and work in the world. These skills can include critical thinking, creativity, problem-solving, decision-making, metacognition, collaboration, communication, digital literacy, citizenship, social and personal responsibility, social-emotional competencies and life skills, among others. Some focus on learners' own thinking and development, while others focus on their engagement locally, nationally or globally. The terms *soft skills*, *noncognitive skills* (a misnomer, since cognition is still involved with those skills), *transversal competencies*, *whole child development* (GPE 2020b), and *Education 4.0 skills* (WEF 2020), among others, are used to classify skill sets falling under the 21CS umbrella. In this brief and GPE's landscape review, the term *skills* is used to encompass skills, competencies, values, attitudes and other attributes.

Social-emotional learning (SEL)—the process of developing and applying skills, attitudes and knowledge to act with empathy, establish and maintain healthy relationships, make responsible decisions, manage emotions and achieve one's goals—is a form of learning often associated with certain 21CS (CASEL 2020b).

The term **learning to live together** (LTLT), another form of learning that can be seen as a subset of 21CS, refers to learning that aims to develop a stronger understanding of others and their values and traditions. In doing so, it aims to spark recognition of our growing interdependence and encourage collaboration and peaceful coexistence. LTLT relies on learning processes that build mutual understanding between students and require students to work together to achieve common goals (UNESCO 2014).

In recognition of the imperative to promote more holistic learning, local and national education systems and the international community are increasingly considering the importance of so-called 21st century skills (21CS). The Sustainable Development Goals (SDGs), for instance, highlight skills for employment and for promotion of sustainable development, human rights, gender equality, a culture of peace and nonviolence, global citizenship and appreciation of cultural diversity (SDGs 4.4 and 4.7).

Within GPE, the partnership's new strategy (GPE 2025) focuses on equitable, inclusive and resilient education systems fit for the 21st century. This emphasis is informed by, among other things, GPE's publication of a [landscape review](#) on the role of the partnership in supporting partner countries in embedding 21CS or the equivalent within their education systems. Some partner countries already include 21CS in their sector planning, for instance, framed around individual and national development (as in The Gambia's Education Sector Strategic Plan 2016–2030) or citizenship, social cohesion and socioeconomic development (as in Afghanistan's National Education Strategic Plan 2017–2021).

While there is not necessarily a shared definition of 21CS and different actors use different terminologies to refer to these skills and competencies (see box 1), a critical point is that a focus on 21CS does not mean losing focus on other types of learning. Foundational skills are the starting point for all learning, with basic skills in the language of instruction required for students to be able to access other types of learning (Mastercard Foundation 2020; GPE 2020b), including 21CS. Moreover, a substantial body of evidence links a variety of 21CS to improved academic outcomes as well as personal outcomes (GPE 2020b; CASEL 2020b). This brief provides an overview of 21st-century skills, summarizes the evidence and guidance around their uptake, and makes recommendations for GPE's engagement with this topic.

2. Evidence

Systems focus and understanding of the skills: Teaching and learning around 21CS requires a systems approach, integrating development of guidance frameworks or policies, revision of curriculum and teaching and learning materials, professional development for teachers, and development of assessment strategies for these skills (GPE 2020b; Mastercard Foundation 2020). Knowledge acquisition has been the dominant goal in many education systems, and a greater focus on skills demands different pedagogical, curricular and assessment strategies (Care et al. 2018) as well as schoolwide culture shifts. 21CS may reflect different learning domains than the academic skills prioritized in education systems, and these alternate domains should be reflected across all elements of the teaching and learning process and the education system more broadly (Care et al. 2018). While significant research exists for

thinking about 21CS in different components of education (for instance, curriculum, pedagogy, teacher training), there are few country examples—especially in low-income countries—of integrating 21CS across the education system (GPE 2020b).

Critically, for education systems to integrate 21CS and the accompanying learning goals, the skills themselves need to be well understood, not just defined (Care et al. 2018). Current gaps in understanding how the skills develop cognitively and how they can be taught and assessed can be major challenges for meaningful implementation of the skills. Better defining of 21CS constructs and understanding of how they interact is needed (Care and Luo 2016). When 21CS can encompass many different skills (and when those skills can manifest differently in different settings), identifying the skills an education system aims to develop and developing a clear, shared understanding of what is meant by each skill and how they can be developed is essential. Ongoing generation of evidence on development of 21CS in different contexts could help inform this process.

Box 2. 21st century skills in partner countries

As part of its landscape review, GPE conducted a stocktake of the most recent education sector program implementation grants available as of January 2019 and the corresponding education sector plans for 15 partner countries. The review found that while 21CS are being prioritized in partner countries' planning, they are rarely among the areas supported by GPE funding. This could be due to a number of factors, including that countries may be applying their own national resources or those of other partners to support work in this area, or a potential perception that these skills are less important in low-income country contexts, possibly seen as add-ons and not central educational goals. This mismatch between planning and support may also be due in part to a limited understanding of how 21CS can be promoted and delivered at the system level. In the three implementation grants that included a focus on 21CS (Cambodia, The Gambia, and Mali), the skills were largely supported through teacher training and pedagogy, and only two of the three grants specifically focused on ICT literacy (GPE 2020b).

Relatedly, another significant challenge is the development of learning progressions for 21CS (that is, how to progress from basic to more advanced skills), as there is a current lack of evidence. Learning progression models are needed to ensure alignment across the education system, and more research is needed to better understand learning progressions for 21CS (Care et al. 2018).

Policy frameworks: Identification and articulation of an aspiration to promote 21CS at the policy level is a necessary first step for the skills to be implemented across the education system (Care et al. 2018). Drawing from a sample of 15 partner countries,

the GPE stocktake found that all countries included reference to 21CS in their education sector plan policy priorities and/or mission/vision statements (GPE 2020b). Recognizing that the education sector plan is the major policy document for articulating a country's vision, mission and priorities for the education sector, integration of 21CS into the plan and other policy planning is an essential step for taking a systems approach to 21CS. That said, while attention to 21CS in policy frameworks—in vision statements or broad strategic goals for sector planning—can be a catalyst for systemwide action in support of the skills, their presence in policy frameworks alone is not sufficient.

Curriculum: 21CS can be taught across the curriculum, through specific subjects, or both. This decision has implications for curriculum design and reform. Though fewer partner countries appear to have 21CS integrated into their curriculum than mention them in policy documents or mission/vision statements (Care et al. 2018), integration into curriculum is essential for system support to 21CS.

Box 3. A system focus through Kenya's competency-based curriculum

Kenya developed its competency-based curriculum (CBC) in response to concerns about the education system's heavy content and exam focus and the implications for education quality. Implementing the CBC requires aligning learning materials and pedagogical methods, preparing teachers and using an assessment framework focused on the intended competencies. Multiple government agencies worked to support different components of the CBC process, and GPE funding helped support the rollout of the CBC (World Bank 2019).

While greater integration of 21CS into curriculum is needed in many settings, some countries already include 21CS in some way in their curricula. Many African countries, for instance, already have primary and lower secondary life skills courses that touch on 21CS. Some African education systems are also moving toward competency-based curricula, at least at the secondary level. A competency-based approach focuses more on the learning process and its outcomes than on subject knowledge, though subject knowledge is still developed in this process (Mastercard Foundation 2020). Either through courses like civics, which explicitly focus on these skills, or through "carrier subjects" like religious education, history, art and language courses, many subjects can be used for teaching "learning to live together" (LTLT) competencies (UNESCO 2014) and other 21CS. Extracurricular activities, too, can be school-based avenues for supporting LTLT competencies (UNESCO 2014) and other 21CS. Standalone subjects focused on 21CS, carrier subjects and competency-based curricula are promising curricular avenues for integrating 21CS.

In thinking about planning curriculum reform for 21CS, it is also useful to maintain a focus on preparing students for what they will need for future success. This means that there must be a balance between skills that are currently in demand and those that will be needed in the future (Mastercard Foundation 2020). This requires anticipating the economic trajectory and sociopolitical circumstances of a given setting.

Pedagogy: In many partner countries, pedagogies often focus on rote learning and content acquisition, according to a review of grant documents for a GPE internal thematic review on teachers and teaching. 21CS require interactive, student-centered pedagogies (Care et al. 2018; Mastercard Foundation 2020). These participatory, learner-centered pedagogies reflect key 21st-century competencies, such as communication, collaboration, leadership and empathy, and help students develop these competencies, as well (UNESCO 2014). Similarly, group work, cooperative learning and discussion- and debate-focused pedagogies have been suggested as methods to promote LTLT competencies (UNESCO 2014).

Notably, such pedagogies are good practice for the development of not just 21CS but also other forms of learning, drawing from a wide body of evidence on how children learn and how to engage students in the classroom. Play-based learning, for instance, is an evidence-based strategy for developing collaboration, communication, content knowledge, critical thinking, creativity and confidence in students (Hirsh-Pasek and Hadani 2020; WEF 2020). Play-based learning allows for engagement of students with diverse backgrounds and, in some settings, can be low-cost (Hirsh-Pasek and Hadani 2020), though such approaches may require a level of system capacity that many partner countries don't have.

Box 4. 21st century skills in GPE COVID-19 funding

The importance of resilience and other social-emotional skills was increasingly recognized during the pandemic. GPE's COVID-19 funding in Nigeria included support for building teacher capacity to support children's resilience-building and play, highlighting the role of play-based learning in 21CS skill development (GPE 2020a).

A strong body of evidence has been built up specific to instruction for social-emotional learning (SEL), a subset of 21st-century learning that has been of particular interest in the wake of the COVID-19 pandemic, with relevance to 21CS more generally. Evidence suggests that SEL instruction should be sequenced, with coordinating training approaches to support skill development; active; focused on implementation that specifically supports SEL competencies; and explicit in defining and focusing on certain knowledge, skills and attitudes (CASEL 2020b).

Teacher professional development: The competency-based learning and teaching implicit in 21CS requires high teacher skill levels (Mastercard Foundation 2020). Building teachers' knowledge and competencies related to 21CS will help them bring these skills and competencies to the classroom through their teaching practice (UNESCO 2014). As such, developing students' 21CS requires training and supporting teachers on the pedagogies that foster this development (Mastercard Foundation 2020). This includes encouraging uptake of these pedagogies by helping teachers understand why these teaching methods are valuable (UNESCO 2014), or, more fundamentally, by helping teachers understand the importance of key 21CS and how they can be developed. Given this, it is critical that pre- and in-service professional development for teachers provide support, resources and learning related to these skills. Teachers need examples, guidance and assessment frameworks to support relevant skills in the classroom (UNESCO and Malaysia Funds-in-Trust 2016).

Box 5. GPE support for 21st century skills: Mali

A portion of the GPE-funded Emergency Education for All project in Mali (2013–17) aimed to support displaced children and at-risk youth impacted by political instability. Subcomponents—teacher training and pedagogical support for students—emphasized training teachers on 21CS, including topics and competencies such as human rights, civic education, developing a culture of peace in the classroom and developing student communication skills (GPE 2020b).

A study conducted by UNESCO and the Education Research Institutes Networks in the Asia-Pacific (ERI-Net) in 10 middle- and higher-income countries in the Asia-Pacific region found that most teachers recognize the need to incorporate “transversal competencies” into their teaching and feel fairly confident in doing so. When teachers didn't feel confident, it was usually attributed to competing demands on their time, the need to use multiple learning frameworks and the weight of administrative tasks. In pre-service training, the practicum was the most useful for learning about these skills. Additionally, some teachers felt that in-service professional development could sharpen its focus on these skills (UNESCO and Malaysia Funds-in-Trust 2016; UNESCO and ERI-Net Asia-Pacific 2016). Regional and national analyses of teacher knowledge of priority skills, teacher competency in the associated pedagogical strategies, and the current landscape of teacher support related to these skills in other settings could help inform contextually relevant policy and program design as needed.

Assessment: Assessment is a key dimension of system support for 21CS. Insufficient focus on 21CS in assessment may diminish attention to the skills in teaching and learning processes. LTLT skills are often not widely assessed at either the classroom or

national level (UNESCO 2014). Similar challenges persist for many 21CS. At present, assessment systems in many contexts are not well equipped to capture these skills, though some classroom- and national-level assessment tools allow for indirect measurement of them (GPE 2020b). Traditional summative assessment approaches such as high-stakes exams, still the dominant assessment approach in many partner country contexts, often conflict with competency-based learning (Mastercard Foundation 2020).

Current assessment systems are ill-equipped to capture these skills, in part because the formats used in most high-stakes exams and other summative assessments—such as multiple choice or closed-ended response questions, which are easy to code and may be adequate for measuring knowledge—are not sufficient for assessing dynamic skill sets (and the cognitive processes that underpin them) like those required for 21CS. In many cases, acquisition of 21CS is best demonstrated through behaviors that can't be captured in such assessment formats. 21CS rely on progression of skill development (that is, from more basic skills to more advanced skills) in a different way from some other academic subjects, and they are more about cognitive processes than about storage and retrieval of content, meaning that assessment strategies geared toward content-based learning are not relevant for assessment of 21CS (Care and Luo 2016; Care et al. 2018).

These challenges point to the need to revise or develop new assessment approaches for 21CS. It is critical to align assessment to the skills the education system is trying to develop; a focus on facts rather than skills development has negative consequences for the whole education system (Mastercard Foundation 2020). As such, a move toward 21CS—including appropriate assessment strategies—could help catalyze a shift toward assessment systems that are more useful for strengthening all forms of teaching and learning, including for 21CS.

Indeed, strategies to improve assessment for 21CS mirror assessment strategies linked to quality education more generally. Formative assessment is recognized as a valuable avenue for assessing LTLT competencies, but capacity constraints for such assessment can be a challenge, requiring clear understanding of these skills and of formative assessment strategies, as well as ongoing support to teachers in implementing these assessment methods (UNESCO 2014); similar challenges exist for formative assessment of all 21CS. Adaptation of national assessment frameworks—from classroom assessments to national assessments—to incorporate the social, emotional and 21CS domains will be necessary (UNESCO 2014). One possible strategy for rethinking assessment to incorporate 21CS could be aiming for assessment tasks that reflect key dimensions of real-world tasks and provide evidence of student ability

related to those dimensions. Presentations, portfolios or projects focused on the target skills can be meaningful avenues for assessment of 21CS (Care et al. 2018).

In addition to a change in test modality, the challenge of assessment highlights the need to understand how 21CS manifest and how they are sequenced. There must be clear descriptions of how different competency levels of 21CS play out; without these, assessing learning for the skills is not possible (Care et al. 2018). Assessment of 21CS also requires attention to cultural contexts and norms (Mastercard Foundation 2020), as these factors influence how 21CS take shape. Inter- and intrapersonal skills, in particular, may manifest differently in different cultural contexts, and attention to these sociocultural factors is key in designing assessments (Care et al. 2018).

School culture: The shift toward 21CS at school is not limited to the classroom. School culture shifts are critical, and school leaders have important roles to play in transitioning a school's culture from a traditional academic focus to a more holistic focus and in supporting teachers in fostering and promoting 21CS. As such, training and supporting school leaders on integrating 21CS across the school will be important for the uptake of 21CS. Establishing support mechanisms for school leaders' promotion of the skills may also be necessary (UNESCO and Malaysia Funds-in-Trust 2016). In addition, extracurriculars can be useful avenues for developing 21CS (Mastercard Foundation 2020).

Evidence and guidance focused on SEL, a subset of 21CS, and school culture were particularly relevant in the COVID era and may also apply to other 21CS. According to the Collaborative for Academic, Social, and Emotional Learning (CASEL 2020a), schoolwide SEL—a systemic approach to integrate SEL into every aspect of the educational experience—requires developing foundational support and a sense of ownership of SEL among school staff; improving social-emotional competence among school staff and establishing collaborative relationships; promoting student SEL explicitly and as integrated into curriculum, partnerships and school policies; and continuously improving through evidence-informed decision-making (CASEL 2020a).

Evidence also highlights the importance of safe environments and nurturing relationships for effective SEL, and a school climate where everyone—adults and students—feels supported, respected and engaged. Moreover, evidence suggests that SEL programming is effective when families are engaged and when schools reflect children's home experiences. Community partnerships can also play a valuable role in supporting SEL (CASEL 2020b). Similar school culture considerations may apply to other 21CS.

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