# Unintended consequences and lessons learned

The strategies introduced in the previous section can be options to ensure equity through curriculum innovation. While the strategies may be helpful, they may also have unintended consequences. Some countries/jurisdictions report outcomes that were not anticipated when designing these strategies, which adds further complexity to ensuring equity in the curriculum.

The following five key lessons are based on country experiences. These lessons can be used as a checklist to reflect on the current state of play and avoid similar unintended consequences that peer countries and jurisdictions have experienced.

**Key lessons learned from unintended consequences on ensuring equity through curriculum innovations**

1. Use Universal Design for Learning as checklist.
2. Change the paradigm of "learning and assessment" to favour the whole child and person development.
3. Expect both untapped opportunities and new risks in public-private partnership.
4. Avoid stigmatising personalised and cross-curricular content and competency-based curricula.
5. Do not underestimate the resources required to close observable and non-observable equity gaps.

## 1. USE UNIVERSAL DESIGN FOR LEARNING AS CHECKLIST

The Universal Design for Learning (UDL) framework has existed for years, but its concepts of inclusion are still far from reality in curriculum design. The innovations explored in this chapter – digital curriculum, personalised curriculum, cross curricular content and competency-based curriculum, and flexible curriculum – present opportunities to put the UDL framework into action.

It is important to distinguish between "digitalisation of a curriculum" and "digital transformation in curriculum". For example, a digital curriculum should not mean simply turning a paper curriculum into a PDF and posting it on a website, or solely hosting all recorded content and drilling exercises on a digital platform. It should be understood as a means to fundamentally change the way students and teachers perceive learning and teaching by clearly aligning student learning and well-being as goals of the curriculum with appropriate methods, materials, and assessment.

Including untapped opportunities, a digital curriculum has the potential to integrate content, pedagogies, and assessment into one coherent plan, thereby addressing the Why, the What and the How of learning in a way that is adaptable to diverse learners (see the Research section of this report and the CAST website (CAST, 2020[1])). In doing so, articulating, reiterating, and reinforcing human intrinsic values and student well-being, as part of the broader goals of education is important. This can often be undermined, in particular, when aligning curriculum with assessment.

For students to develop a true sense of ownership of their own learning, they need to feel a sense of purpose, curiosity, and intrinsic motivation. This can vary from student to student. Therefore, a safe space is important for each student to share reflections on their learning and well-being at school (i.e. experienced curriculum), as well as their aspirations for future learning. Rooted in the intrinsic value of learning, all students should be given an opportunity to experience and be empowered to co-construct their curriculum reality, together with their peers, teachers, school leaders, and others in school, as well as with families and others in the communities outside school. Not only students, but also teachers should benefit from using a digital curriculum, not being deprived of opportunities or space to exercise their own agency.

When this happens, learners are recognised as co designers of a curriculum that will be most relevant for them, building on their engagement and motivation (see the Lessons learned section in the Ecosystem Report (OECD, forthcoming[2])).

The questions below (Box 11) can be used as a checklist to explore to what extent an existing curriculum has considered the key UDL principles, and anticipate what changes can make the curriculum more inclusive and dynamic in the future.

### Box 11 Exploratory questions for self-reflection on the universality of curriculum design

**1. Affective Networks: Why do we learn?**

**To stimulate interest, engagement, and motivation for learning, to what extent does your curriculum:**

- connect content knowledge with real-world issues/significance (knowing how to think and act like a practitioner) for students to recognise the relevance and purpose of their learning
- embrace and celebrate diversity (social, cultural, racial, gender, etc.) in a way that allows students to identify their identity in the curriculum
- build in the right level of challenge for learners at different proficiency levels
- connect content, pedagogies and assessment with a coherent focus on student learning through other material (e.g. simulations, videos, photos)
- offer ongoing support for one-to-one learning in person (e.g. teachers available during office hours, online chat or by phone) and/or machine tutoring (e.g. AI enabled tutoring programmes)
- build in plenty of opportunities for ongoing self-assessment and reflection.

**2. Recognition networks: What do we learn?**

**To present curriculum content in different ways, to what extent does your curriculum:**

- clearly describe the objectives of target content and expectations of students in accessible language
- highlight "big ideas" or "key concepts", such as patterns and relationships in each subject and across different subjects
- use multimedia to cater to different learning needs
- consider options for learners whose language of instruction differs from their mother tongue
- avoid presenting content in ways that create a perception of "curriculum overload" and "homework overload".

**3. Strategic Networks: How do we learn?**

**To differentiate the ways for students to present what they know, to what extent does your curriculum:**

- assume that students can learn the designed content through various means (such as face to face or online, or in a hybrid model) in accordance with their needs
- allow learners to plan and organise their own learning, as well as learn from each other and in groups (e.g. scaffolding, peer learning and community learning)
- assume that students can demonstrate attainment of curriculum objectives through multiple means (e.g. essays, interviews, projects, plays, speeches) and ensure that assessments involve not only "assessment of learning" but also "assessment for learning" and "assessment as learning"

- consider developmentally appropriate paces of learning, as well as different learning progressions to allow different entry points for students to build on what they know and what they want to learn
- remove physical barriers that may be introduced by the motor demands of a task (e.g. accommodate requirements for responses at different rates and range through various means, including motion technology, voice recognition and alternatives to mouse control).

**Source**: OECD, adapted from (CAST, 2020[1])

## 2. CHANGE THE PARADIGM OF "LEARNING AND ASSESSMENT" TO FAVOUR THE WHOLE CHILD AND PERSON DEVELOPMENT

Many spheres of society identify closing equity gaps as an explicit goal of the global agenda, such as in the UN Sustainable Development Goals (SDGs). For example, SDG 4 indicators concern education and, with regard to curriculum, 4.7.1 sets the following goal:

"By 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development".[1]

More precisely, the indicators are constructed around the extent to which education for global citizenship and sustainable development are mainstreamed into 1) national education policies, 2) curricula, 3) teacher education, and 4) student assessment.[2]

Students develop competencies for global citizenship and literacy for sustainable development through various learning experiences, including formal, non-formal, and informal learning. Therefore, the types of curriculum innovation discussed in this report, which promote various aspects of student competencies, should be considered opportunities and means to achieve the global agenda. However, these curriculum innovations do not scale.

One of the main reasons is difficulty in assessing types of competencies gained through such innovations. For example, digital learning[3] provides alternative pathways to disadvantaged students (e.g. full online courses for students who have dropped out of school or are bound to prolonged stays at the hospital for health reasons). While this opens new opportunities to not leave anyone behind, the recognition of qualifications acquired through digital curricula may be limited. Resistance to recognising competency-based qualifications may come from established institutions, such as formal public schools that deliver traditional qualifications based on what is taught by teachers and the number of hours taken as credits, or may reflect the value universities and general public place on mainstream qualifications.

Furthermore, mindsets and assessment should, therefore, shift to value learning processes as well as competencies and achievements gained from those processes. Assessment for learning, for instance, regards assessment as an opportunity to provide feedback that will advance students' learning. From the equity perspective, high-stakes assessment, such as university entrance exams should consider system change, for example, shifting from emphasis on competitive entry points towards valuing rigorous efforts at the exit point in order to maximise learning gains and contribute to the diversity and inclusion of universities.

The COVID-19 pandemic in 2020 pushed deeper thinking about equity issues in curriculum and assessment. Students with disabilities long experienced challenges, like access to testing accommodations, and the pandemic further exacerbated these obstacles. Recognising that, while all students had access to testing disrupted by the pandemic, students with disabilities faced greater barriers, a state court in California, United States, issued a preliminary injunction barring University of California campuses from considering SAT or ACT scores in admissions or financial aid decisions, noting that the pandemic has restricted the ability of students to take the exams.

On the technical side, the educational technology industry started to invest in numerous initiatives to develop digital tools, offering an array of benefits for students in terms of equity and democratisation. Blockchain technology, for example, enables the creation of learning records that are permanent, transparent and give direct access to users, allowing them to document their lifelong learning path (Jirgensons and Kapenieks, 2018[3]). Thus, blockchain can be used in the education sector and offer new ways to recognise and validate

a range of learning outcomes or competencies students already had or learned (see the Research section of this report). This suggests that students can be recognised for any type of learning – anytime, anywhere – and for their gains across different spheres of learning, including formal, non formal, and informal, with concrete value-added for the labour market. As another example, migrant students could be given credits for native language proficiency as part of their prior knowledge, and students who dropped out of school could still be given credits for their prior learning and/or experiential learning in the community or at home if this led to achieving the intended goals of the curriculum. Thus, this tool has the potential to make lifelong and life-wide learning more visible in a legitimate way.

If blockchain technology can be further explored, the legitimacy of competencies that students gain through project-based learning, for example, could be assessed by people directly involved in their projects and who observe the learning processes and outcomes in addition to their teachers. This could embed transparency in the assessment process for high-stakes university entrance requirements or e portfolios, and avoid fake reporting or fraudulent statements about such learning activities and attainments. This will require a more rigorous approach to assessment, refining the purpose, scope, and measures for assessing competencies, along with a change in mindsets, expectations, and values about assessments and qualifications. Such potential is challenged by unconscious biases among teachers and school leaders about students' ability, as well as by parents' limited expectations and awareness of the potential for every student to succeed. In turn, these biases, and limited expectations and awareness are often fed by high-stakes exams themselves, which exert pressure limiting the benefits of curriculum innovation (see "Lessons Learned" section in the forthcoming Ecosystem report – What gets measured gets treasured (OECD, forthcoming[2])).

## 3. EXPECT BOTH UNTAPPED OPPORTUNITIES AND NEW RISKS IN PUBLIC-PRIVATE PARTNERSHIP

The transition to a fully interactive digital curriculum is still at the development stage in many countries, and new technologies are rapidly evolving. Under these circumstances, it is important to keep an open mind and make conscious efforts to continuously monitor both opportunities and risks.

A list of such opportunities and risks should be constantly updated. This should be done not only by policy makers and researchers but also, though involvement of all stakeholders in curriculum development, recognising that curriculum innovations are increasingly explored at the local level (see the forthcoming Ecosystem report (OECD, forthcoming[2])).

Examples shared by participating countries/jurisdictions at the time of writing include, for example, opportunities with new types of public-private partnerships. In some countries, the vocational education and training (VET) sector has long-standing partnership with the private sector (e.g. co-designing a VET curriculum with rigorous apprenticeship). In the schooling sector, however, the nature of public-private partnerships is based more on a business relationship (i.e. companies consider schools as market opportunities for educational services and goods).

In recent years, however, a growing body of companies started to articulate a mission and interests that potentially align with educational needs, through adjusted corporate behaviours manifested as corporate social responsibility (CSR). These companies set up CSR sections within the company itself or through an affiliated organisation such as a foundation to use the company's profits to contribute to education (which responds to United Nations Sustainable Development Goals). Some companies involve a wider range of stakeholders in designing a project or programme, shifting the core mission from CSR to "creating shared value" (CSV) (Porter and Kramer, 2011[4]), seeking "collective impact" (Kania and Kramer, 2011[5]) .

In some countries, the private sector is therefore becoming recognised as an important stakeholder in curriculum reform processes. It is well aware of the changing market in education, especially opportunities to provide solutions for curriculum innovation. To that end, new types of private sector engagement are important for schools, teachers, and students, as it can bring tailored resources to attain maximum and mutual benefit from the range of curriculum innovations (especially digital, personalised, and flexible).

This said, public-private partnerships should be handled with caution and managed carefully to prevent the risks of commercialisation and privatisation enlarging educational inequalities. Some countries/jurisdictions report unanticipated challenges in engaging with private sector actors when their interests are not aligned with the intents of the school sector. Schools were approached under the umbrella of corporate social responsibility, but confronted with companies either simply trying to sell their products or reaching out for marketing purposes,

rather than working towards a common purpose through constructive dialogue and co-creation. Schools also faced unanticipated obligations, as when companies proposed textbooks or trials of digital solutions free at first, but expected a fee in the future.

Another potential risk for equity issues is personalised curricula: without careful design, these can increase inequalities instead of closing them, and can quickly shift towards education consumerism. That is particularly true when personalised learning is based solely on potentially subjective or self-interested parental and student choices (see the Lessons Learned section of the forthcoming report on flexibility (OECD, forthcoming[6])), exercised more often by advantaged students than disadvantaged ones. Personalised curricula also often rely on technology for delivery (see the Research section of this report), which widens the equity gap in the absence of proper support for access to a digital device, connectivity, and quality content.

Tailoring and customisation of curricula turns students and parents into consumers rather than co-creators sharing responsibility for effective implementation. This can lead to an imbalance of power in decisions on what is to be learned and how, with the risk of "customers know best" taking precedence over advice from academic experts (Bragg, 2014[7]) or the needs of students, the primary agents of learning.

## 4. AVOID STIGMATISING PERSONALISED CROSS-CURRICULAR CONTENT AND COMPETENCY-BASED CURRICULA

Curriculum innovation may fail by not managing the expectations of everyone who has a say in the curriculum design and implementation, including students, teachers, school leaders, parents, textbook publishers, communities, and other social partners. They should all recognise that their agency contributes to the success or hindering factors. Curriculum innovations face multiple layers of realities and perceptions as to what they can provide.

Therefore, first, it is important to manage expectations when introducing new ideas or innovations to curricula. For example, a cross-curricular and competency-based curriculum underlines the importance of disciplinary learning, basic foundations such as literacy and numeracy. But it is important to overcome the false dichotomies of "knowledge vs. competencies", "basics vs, creativity", etc. While a competency is a holistic concept, covering knowledge, skills, attitudes and values, basic literacies are the foundations for developing competencies like creativity and other so-called 21st Century competencies (OECD, 2019[8]).[4] To manage expectations, British Columbia (Canada), uses the term "concept-based, competency-driven curriculum", so as to highlight that the knowledge (concepts) are also indispensable to the curriculum.

Second, more closely linked to equity issues, is avoiding stigmatising personalised or cross-curricular content and competency-based curriculum as an equity measure for only a certain group of students. It should support all students to thrive, rooted in key concepts in disciplinary learning. For example, parents may not welcome a personalised curriculum on the assumption that the standards are being lowered for their children; similarly, teachers' bias may inadvertently cast a shadow of low expectations for what students can achieve.

Third, updating all relevant aspects of the ecosystem is critical, e.g. a personalised curriculum or a cross-curricular content and competency-based curriculum should transform the structure, content, and delivery of pedagogies, assessments, digital textbooks, guidance materials and teacher education, parental expectations, behaviours of private educational service providers, etc. It requires a whole-of-society approach, to mainstream curriculum innovations so that all children and students benefit from such innovations.

## 5. DO NOT UNDERESTIMATE THE RESOURCES REQUIRED TO CLOSE OBSERVABLE AND NON-OBSERVABLE EQUITY GAPS

Policy makers examine how curriculum innovations close those gaps. Keeping students engaged and motivated to learn is as much a priority as ensuring a level playing field in accessibility to content and facilities, in order to make an innovative curriculum available for all learners. Curriculum innovations, especially digital, personalised, and flexible curricula, require thorough planning and budgeting of resources. This includes not only technological equipment, but also non-technological means to ensure that no student is left behind. As highlighted by the United Nations' Convention on the Rights of the Child, particularly with respect to Article 12, listening to student voices is critical to capturing the complex realities experienced by children and students, so as to consolidate facts about non-observable equity gaps.

The importance of non-observable equity gaps was revealed by the COVID-19 crisis that began in 2020. Simply focusing on closing observable discrepancies in access to a digital curriculum (e.g. devices, Internet connectivity, learning materials) can lead to unintended consequences. If digitalisation simply means putting learning content or recorded teacher lessons on school websites, it may reduce students' engagement and their motivation to learn.

Indeed, inequalities are further observed across regions, with variations in the degree to which devices and connectivity are available to households. Some students started to "drop out" or "fade out" from online courses. The COVID-19 experience gave deeper insights into how students learn. When expenses for effective implementation of curriculum innovations are not included in the national or local budget, students in general, but vulnerable students in particular, easily lag behind in their learning, lose motivation and engagement, and risk their well-being. This can further exacerbate vulnerability for students in disadvantaged communities at a time of crisis.

Furthermore, it is critical to keep in mind the pace of eco-systemic change from the beginning. This determines how quickly narrow equity gaps can be closed. It is essential to expedite the process of accumulating, disseminating, and circulating the knowledge and experiences of early adaptors of curriculum innovations so that the knowledge gaps can be filled as quickly as possible.

Countries/jurisdictions have a record of underestimating or not getting buy-in for the costs to properly implement curriculum innovations. Effective implementation of curriculum innovations requires investment in not only "hard" infrastructure but also "soft" infrastructure, for example skills to maintain and use technologies, or personalised support for enhanced student learning, engagement and well-being. The concept of "resources" needs to be understood in a wider scope, including not only financial resources (economic capital) but also talents from all spheres of society (human capital), networks and relationships (social capital), and our living environment (natural capital) that), which can all be used to close the equity gaps.

## Notes

1. Sustainable Development Solutions Network, https://indicators.report/targets/4-7/
2. Global Alliance to Monitor Learning, UNESCO Institute for Statistics, http://gaml.uis.unesco.org/dashboard/
3. Without digital devices, distance learning or remote learning experienced similar societal valorisations as digital learning.
4. Although "creativity" has always been valued even in historic times, it is often used to represent so-called 21st century skills, e.g. the OECD Learning Compass 2030 includes "creating new value" as part of the transformative competencies needed for students to thrive and shaper a better future; the Partnership for 21st Century Learning defines 'Four Cs of 21st century learning – collaboration, communication, critical thinking and creativity.

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