# How do countries compare?

Time lag is a common phenomenon that affects curriculum design across countries/jurisdictions. Addressing time lag involves timely identification of future demands and needs, ensuring buy-in from stakeholders, using digital tools strategically and wisely, and taking into account potential fatigue related to prior reforms, among other issues. Reforms require a vision, future-oriented competencies that are articulated in curriculum and fostered effectively by teachers, with parent and student buy-in. Countries and jurisdictions report wide variation in the frequency and duration of their curricular reforms. Understanding these dynamics in conjunction with factors that mitigate or contribute to additional lags can facilitate strategic future planning.

This section[1] first gives an overview of how countries use student profiles and cascading education goals to build a common vision for reform. It then delves deeper into how countries integrate 21st century competencies into national curricula. Finally, it compares countries' future reform plans.

## WHAT KIND OF A FUTURE VISION FOR STUDENTS DO COUNTRIES/JURISDICTIONS ARTICULATE IN THEIR CURRICULUM?

By articulating a shared vision for the kinds of students needed for the future, countries/jurisdictions can help address time lag in curriculum by creating a common language for desired outcomes and setting the stage for movement towards a shared goal. The sustainability of reform is linked to how effective policy makers are at articulating, sharing and developing buy-in for education goals (Pietarinen, Pyhältö and Soini, 2017[1]).

A curriculum is regarded not only as a tool to react to and cope with changes in society, but also as a tool to define and build the future (Halinen, 2016[2]; Airaksinen, Halinen and Linturi, 2017[3]). The core question then is: "What kind of future do we want to create?" Societal goals can be translated and structured into three types of goals: overall education goals as denoted in educational acts; curriculum goals; and subject-specific goals (Figure 20).

### Societal goals and how education plays a key role

Economic and demographic challenges propel countries/jurisdictions to expand and modify education goals to address societal needs. An ageing population may suggest the need to become more pluralistic, while a lack of natural resources may demand additional creativity to promote economic output, increasing the competitive advantage as a labour market. This is, for example, the case in Estonia, a relatively small country with limited natural resources, which is in the process of establishing its competitive advantage as an equitable economy and a society based on digital and ICT-based education. These challenges can be addressed by effectively recognising these needs and altering education goals to meet them.

Other countries/jurisdictions, such as Japan and Korea, are working to combat demographic trends of ageing societies and declining fertility rates by making their societies more equitable and inclusive so as to use all talent in the labour market. Societal goals and aspirations can directly drive educational goals, with real-world implications for students and society (See Box 8). Singapore is investing significantly in human resource development to help its students become confident persons, self-directed learners, concerned citizens and active contributors who are able to work effectively in teams, exercise initiative and take calculated risks (Table WEB 12[2]).

Education goals often highlight specific social and economic issues beyond those related to education (Figure 21), and documents articulating these goals may indicate national priorities or alternatives for addressing these. For example, most countries/jurisdictions make a clear link between education goals and economic outcomes in diverse documents and statements about education goals. Some also prioritise specific societal imperatives in their education goals, such as environmental awareness and sustainability (Australia, Denmark, Estonia, Finland, Hungary, Norway, Poland, Portugal, Scotland [United Kingdom], Sweden and Kazakhstan).

Figure 20 **Cascading goals**
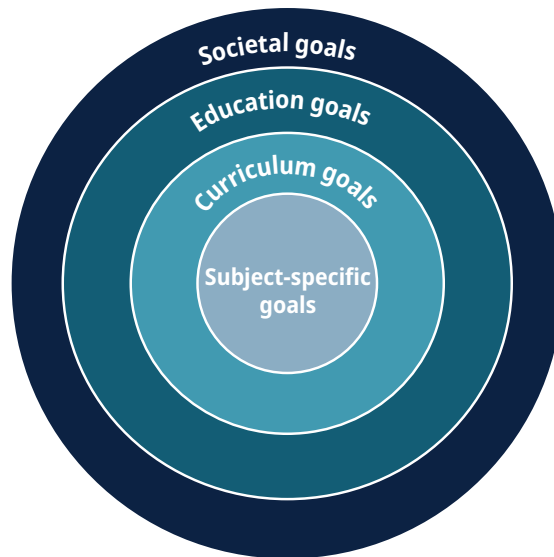


Future workforce needs such as lifelong learning, skills development and entrepreneurship, and building the workforce for tomorrow are articulated by a number of countries/jurisdictions (Denmark, Estonia, Finland, Hungary, Ireland, Norway, Ontario [Canada], Portugal, Scotland [United Kingdom], Sweden, China [People's Republic of], Hong Kong [China], India, Kazakhstan, South Africa).

Others emphasise the need to strengthen education for students with special needs (Ireland, New Zealand, Portugal, Turkey, Argentina and Kazakhstan). Northern Ireland (United Kingdom) references media awareness, and Finland and Ireland include responsible and informed consumer behaviour.

Well-being is another important priority mentioned in diverse documents by almost two-thirds of countries/jurisdictions. Most appear to strive for a balance between students' personal well-being and that of society. The aim for students to live self-sufficient, satisfying and happy lives is contrasted with references to economic prosperity, the strength of civic society and the development of social capital.

Figure 21 **Socio-economic, environmental and other desired outcomes cited in education goals**

Percentage out of the total number of policies, declarations and statements articulating education goals reported by countries/jurisdictions
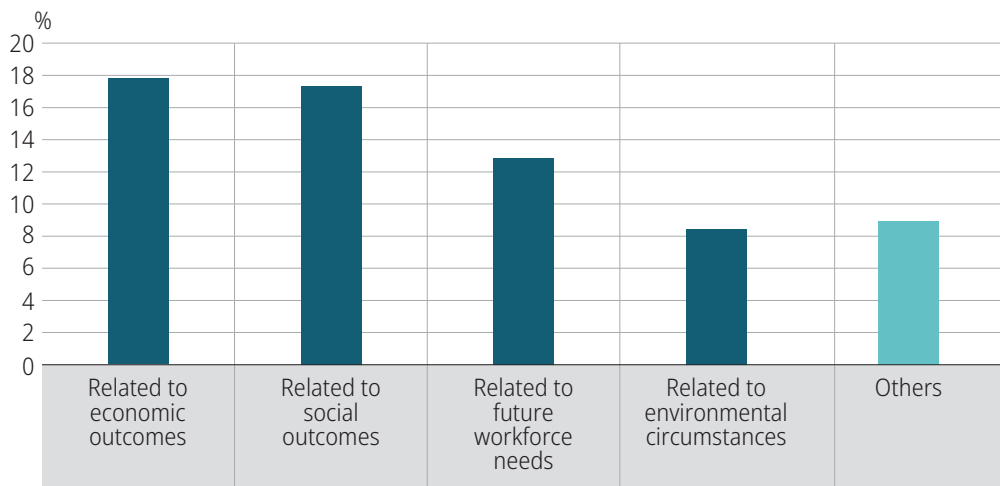


**Note**: Values displayed in this figure include only responses that could be clearly coded as yes/no. Responses for Northern Ireland (United Kingdom), the United States, Brazil and India were submitted by independent researchers, not government administrations.

**Source**: Data from the PQC, item 0.1.

StatLink ᴬᴵˢᴸ https://doi.org/10.1787/888934195188

> **Box 8  Lowering the voting age and creating a related new subject "Public" in Japan**
>
> In Japan, election laws were changed in 2015 to lower the voting age from 20 to 18. One outcome of this significant change was the 2018 revision of the National Curriculum Standard for high schools. In this revision, Japan created a new civics subject called "Ko-kyou" (Public), which is compulsory for all high school students. This revision is a consequence of society's need to nurture students as future creators and lifelong learners. The goal of "Ko-kyou" is to develop the competencies needed for citizens to form and contribute to a peaceful and democratic nation and society. For example, it aims to develop the competencies to make decisions fairly, based on facts and thoughtful reflection and to take different perspectives into account. It includes discussions and work towards consensus-building and social participation and the use of ideas that contribute to decision making, good judgment and basic public principles in order to solve real problems in society. This is a good example of curriculum redesign responding to social needs without time lag.

Countries/jurisdictions cite diverse visionary policies on the future of education. Goals are included in policy declarations, action plans, reports, curriculum documents, speeches, discourses and other public statements, judicial decisions and laws. Some even cite the goals in their national budget or constitution. The diversity of origin and policy documentation reflects the relative importance of some of these goals for the national political agenda and identity.

More than half of countries/jurisdictions articulate their education goals in roughly six different types of policies, declarations or statements (Table WEB 13[3]). This ranges from 1 in Japan, New Zealand, Sweden and Hong Kong (China) to 18 in China and 19 in Kazakhstan. Whether it is preferable to clearly outline the goals in one single place or to reiterate them in multiple documents and on multiple occasions depends on the national context.

## Education goals and how curriculum plays a key role

Education goals reflect current societal priorities of countries/jurisdictions, as well as their overall mission, philosophy of education and resulting education needs (OECD Policy Questionnaire on Curriculum Redesign). These goals are commonly designed in line with student profiles. Education needs are often identified by a board of representatives of national stakeholders. The goals sometimes include the key attitudes, skills, competencies and knowledge students are expected to have acquired on completion of the different education levels and are further defined in curricula and subject-specific education goals.

What these goals are, how they are set and how they are structured differ across countries/jurisdictions, reflecting national/ jurisdictional contexts and circumstances and societal needs over time. Moreover, recognising the need to change goals based on shifting societal demands may result in a lag between when the changes occur and when the education goals reflect these shifts.

Countries/jurisdictions commonly do this by engaging in public consultations or discussions on a student profile or future vision that specifies the kinds of outcomes expected at the end of compulsory schooling (Table WEB 12[4]). Examples of countries/ jurisdictions that use a student profile to guide competency selection include Portugal, Korea, Scotland (United Kingdom), Hong Kong (China) and Canada (Box 9).

> **Box 9  Examples of student profiles and learning goals**
>
> **Portugal**: The **Students' Profile by the End of Compulsory Schooling** is structured in principles, vision, values and competence areas that all students should develop by the end of 12 years of education. The values outlined in the profile's conceptual framework mirror the humanistic-based philosophy which fosters inclusion and values diversity viewing each student as a unique human being. The students' profile leads thus to a school education in which the students of this global generation build and settle a humanistic-based scientific and artistic culture by mobilising values and skills that allow them to act upon the life and history of individuals and societies to make free and informed decisions about natural, social and ethical issues, and to carry out a civic, active, conscious and responsible participation (Portuguese Ministry of Education, 2019) (Figure 22).

Figure 22 **Portugal's students' profile by the end of compulsory schooling**
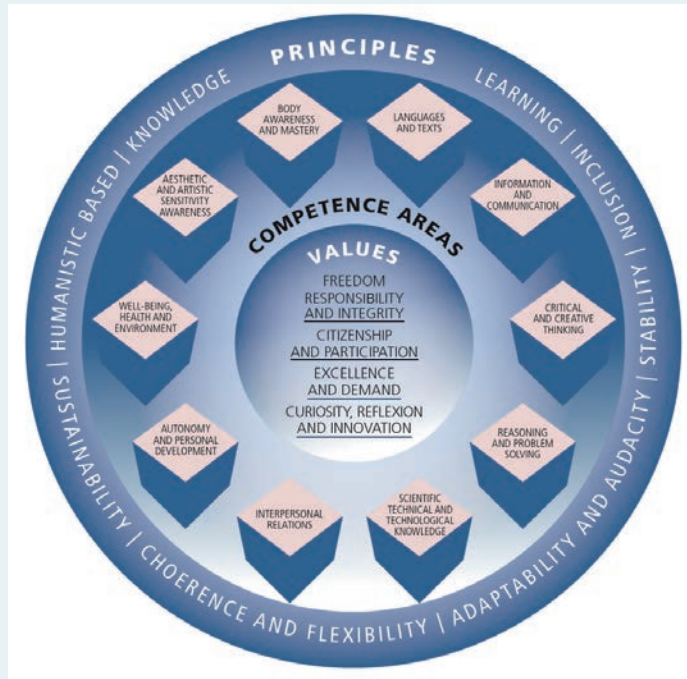


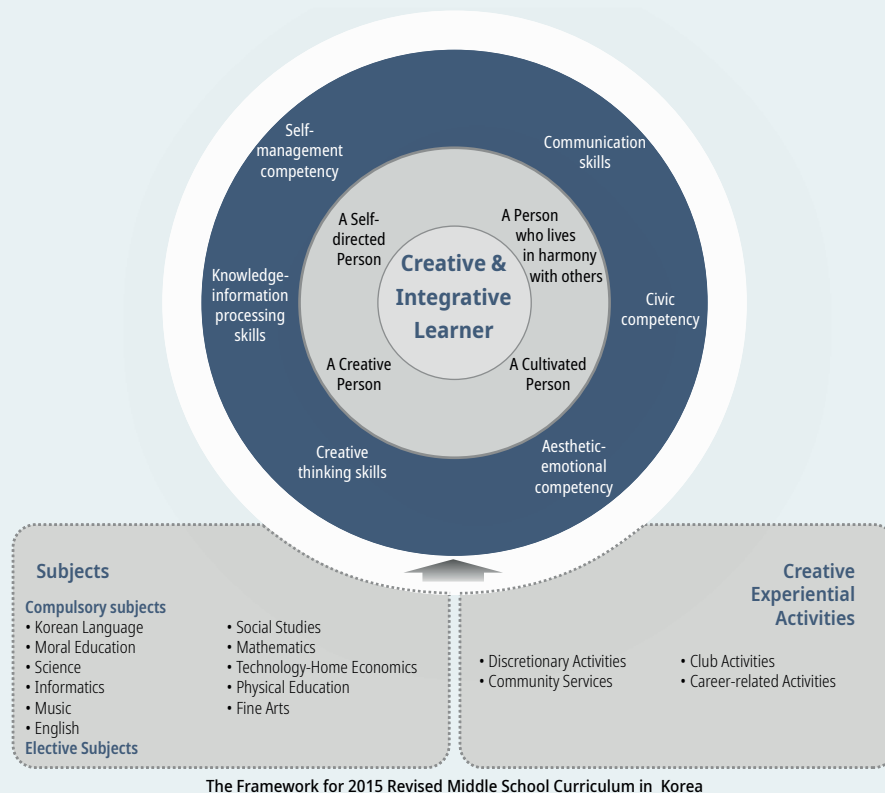**Note**: For more details see Annex on National or regional curriculum frameworks and visualisations.
**Source**: Students' Profile by the End of Compulsory Schooling, Directorate-General for Education/Ministry of Education and Science (2017)

**Korea:** Based on the Korean concept of **"Hongik Ingan"**, or the drive to broadly benefit humanity, Korea sets out its student profile, **"An Educated Person"** (Figure 23). It aims to enable every citizen to lead a life worthy of human dignity, contribute to the development of a democratic state and support the realisation of an ideal of shared human prosperity, by ensuring cultivation of character, development of abilities for independent life and necessary qualities as a democratic citizen under the humanitarian ideal. Based on the ideal and aims of education, the vision of an educated person in this curriculum is specified as follows: 1) a self-directed person who builds a self-identity and explores a career and life on the basis of holistic growth; 2) a creative person who discovers something novel by means of diverse ideas and challenges based upon basic abilities; 3) a cultivated person who appreciates and promotes the culture of humankind on the basis of cultural literacy and understanding of diverse values; and 4) a person who lives in harmony with others, fulfilling the ethics of caring and sharing, as a democratic citizen with a sense of community and connection to the world.

**Scotland (United Kingdom):** Scotland (United Kingdom) defines its student profile based on four main dimensions to be enabled among young people: 1) successful learners; 2) confident individuals; 3) responsible citizens; and 4) effective contributors (Figure 24). Under each of these dimensions, Scotland includes values and competencies that support students to navigate towards such a vision. This student profile helps to align values and competencies with education objectives under a clear and coherent framework that sets out a broad reference of the Scottish curriculum for students, teachers and stakeholders.

**Hong Kong (China):** Hong Kong (China) has a set of 7 Learning Goals which describe the aim of its student profile. On a secondary education level, it aims to enable students to: 1) become an informed and responsible citizen with a sense of national and global identity, appreciation of positive values and attitudes as well as Chinese culture, and respect for pluralism in society; 2) acquire and construct a broad and solid knowledge base, and to understand contemporary issues that may impact on students' daily lives at personal, community, national and global levels; 3) become proficient in biliterate and trilingual communication for better study and life; 4) develop and apply generic skills in an integrative manner, and to become an independent and self-directed learner for future study and work; 5) use information and information technology ethically, flexibly and effectively; 6) understand one's own interests, aptitudes and abilities, and to develop and reflect upon personal goals with aspirations for further studies and future career; and 7) lead a healthy lifestyle with active participation in physical and aesthetic activities, and to appreciate sports and the arts (Figure 25).
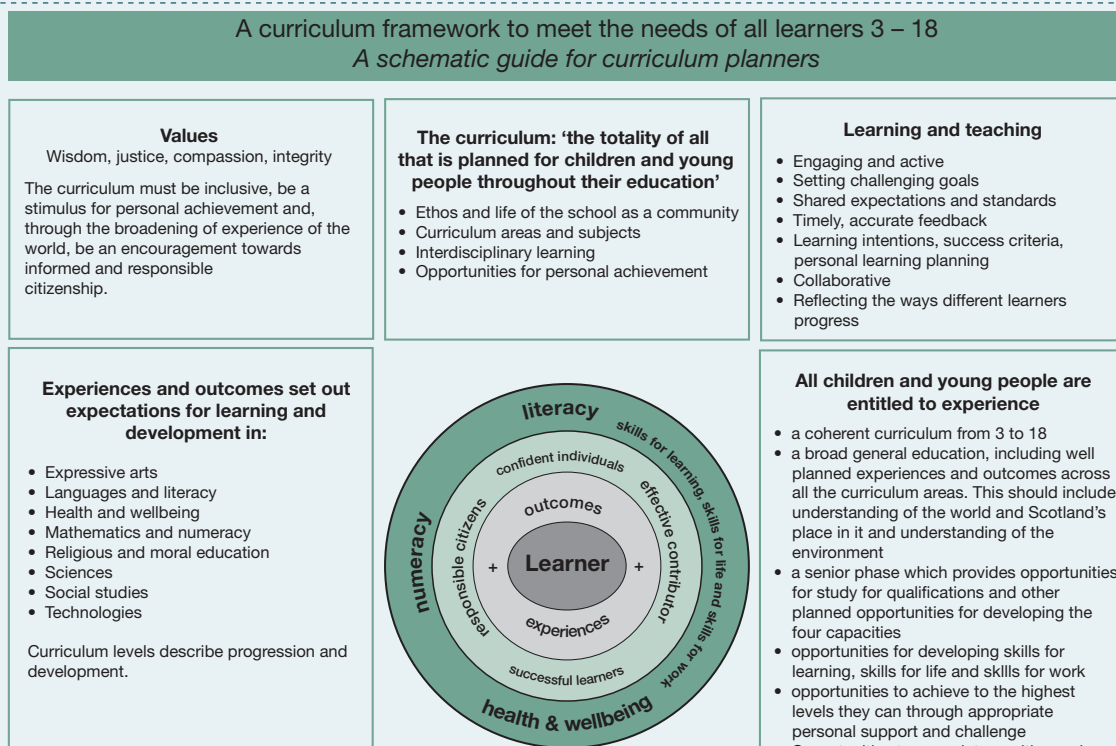
## Figure 23 **Student profile Korea**



The Framework for 2015 Revised Middle School Curriculum in Korea

**Note**: For more details see Annex on National or regional curriculum frameworks and visualisations.

**Source**: Adapted from Korea Institute for Curriculum and Evaluation [KICE] (2016). The framework for 2015 Revised Middle School Curriculum in Korea. Unpublished manuscript, KICE, Seoul: Korea.

## Figure 24 **Student profile Scotland (United Kingdom)**



A curriculum framework to meet the needs of all learners 3 – 18
*A schematic guide for curriculum planners*

**Values**
Wisdom, justice, compassion, integrity

The curriculum must be inclusive, be a stimulus for personal achievement and, through the broadening of experience of the world, be an encouragement towards informed and responsible citizenship.

**The curriculum: 'the totality of all that is planned for children and young people throughout their education'**
- Ethos and life of the school as a community
- Curriculum areas and subjects
- Interdisciplinary learning
- Opportunities for personal achievement

**Learning and teaching**
- Engaging and active
- Setting challenging goals
- Shared expectations and standards
- Timely, accurate feedback
- Learning intentions, success criteria, personal learning planning
- Collaborative
- Reflecting the ways different learners progress

**Experiences and outcomes set out expectations for learning and development in:**
- Expressive arts
- Languages and literacy
- Health and wellbeing
- Mathematics and numeracy
- Religious and moral education
- Sciences
- Social studies
- Technologies

Curriculum levels describe progression and development.

**All children and young people are entitled to experience**
- a coherent curriculum from 3 to 18
- a broad general education, including well planned experiences and outcomes across all the curriculum areas. This should include understanding of the world and Scotland's place in it and understanding of the environment
- a senior phase which provides opportunities for study for qualifications and other planned opportunities for developing the four capacities
- opportunities for developing skills for learning, skills for life and skills for work
- opportunities to achieve to the highest levels they can through appropriate personal support and challenge
- Opportunities to move into positive and

**Note**: For more details see Annex on National or regional curriculum frameworks and visualisations.

**Source**: Education Analysis Division – The Scottish Government 2017.

Figure 25 **Hong Kong (China) learning goals**



**Source**: Learning Goals, School Curriculum Framework and Planning;
https://www.edb.gov.hk/attachment/en/curriculum-development/renewal/Guides/SECG%20booklet%202_en_20180831.pdf (p. 6 Figure 2.2).

Council of Ministers of Education, **Canada (CMEC)**: In 2016, the provincial and territorial ministers of Education put forward six global competencies a pan-Canadian effort to prepare students for a complex and unpredictable future with rapidly changing political, social, economic, technological, and ecological landscapes. Building on strong foundations of numeracy and literacy, these competencies are: Critical Thinking and Problem Solving; Innovation, Creativity, and Entrepreneurship; Learning to Learn/ Self-Awareness and Self-Direction; Collaboration; Communication; and Global Citizenship and Sustainability. These competencies are an overarching set of attitudes, skills, knowledge and values that are interdependent, interdisciplinary, and can be leveraged in a variety of situations both locally and globally. They provide learners with the abilities to meet the shifting and ongoing demands of life, work and learning; to be active and responsive in their communities; to understand diverse perspectives; and to act on issues of global significance. This framework is closely aligned with the competencies that have prioritised through the introduction of new curricula, programs, and initiatives. It is anticipated to evolve based on provincial and territorial engagement with these competencies.

Figure 26 **The Council of Ministers of Education, Canada's (CMEC) pan-Canadian global competencies**



**Note**: For more details see Annex on National or regional curriculum frameworks and visualisations.
**Source**: Council of Ministers of Education, https://static1.squarespace.com/static/5af1e87f5cfd79c163407ead/t/5c6597f353450a15233b6e7c/1550161912721/Pan-Canadian+Global+Competencies+Backgrounder_EN.pdf, Canada CMEC (2020)

There is considerable variation across countries/jurisdictions in the types of student profiles set out in their curricula. However, the following common themes relating to elements of the OECD Learning Compass 2030 (i.e. the vision of the types of students who can thrive and shape a better future) can be observed across multiple countries (OECD, 2019[4]):

- Concerns for environmental sustainability are reflected in some student profiles, in line with the broader notion of **well-being of the planet**, embraced by the OECD Learning Compass 2030 (OECD, 2019[4]). Denmark, for example, refers to a need for "understanding of the interrelationship between humans and the environment", while Finland highlights student understanding of "the seriousness of climate change", and the need to develop a sustainable way of living, and Norway mentions "respect for nature and environmental awareness."

- **Agency** is emphasised by several countries/jurisdictions as one of the key concepts underpinning their student profiles. Agency implies that students develop a **sense of purpose** and have the **will and ability to positively influence their own lives and the world around them** (OECD, 2019[5]).

- The concept is **interpreted in the specific context** of that country/jurisdiction and articulated with emphasis on specific aspects: "capable of making independent decisions" (British Columbia, [Canada]); able to "form their own opinions and take action" (Denmark); become "self-directed persons who build their identity" (Korea); and able to "create their own life" (Japan).

- Student agency also implies a sense of responsibility as **students participate in society** and shape it for a better future, as highlighted by Australia.

- The idea that students should become **active agents of their own learning** emerges in several student profiles. Ontario (Canada) envisions students "fully engaged in their learning", while Ireland highlights students' ability to reflect on their own learning. The acquisition of learning strategies and motivation for lifelong learning are highlighted in some countries and jurisdictions, including the Czech Republic, Denmark and China. Singapore, for instance, refers to "a self-directed learner who takes responsibility for his/her own learning, who questions, reflects and perseveres in the pursuit of learning".

- Co-agency recognises that students, teachers, parents and communities work together to help students progress towards their shared goals (OECD, 2019[5]).

- Some countries/jurisdictions include the concept of co-agency in their student profiles as a way to articulate the expectation that students act in resonance with a wider context, having the ability "to find their role in family, in closer and wider communities, and in the world of labour" (Hungary), having "the necessary qualities as a democratic citizen contribute to the development of a democratic state with a sense of community and connection to the world under the humanitarian ideal" (Korea), and having the ability to "become engaged members of their communities" (Ontario [Canada]).

- **Transformative competencies** that students need in order to contribute to, thrive in, and shape our world are also often highlighted in student profiles.

- Among them, **taking responsibility** is often stressed, as in the student profiles of Denmark, Estonia and Brazil. Some countries/jurisdictions emphasise the notion of **creating new value**, which refers to the capacity to innovate in order to shape better lives. It is, for instance, referred to through wording such as "confident and creative individuals" (in the student profile of Australia), "creative thinking" (the Czech Republic), "creating new products or interpretations" (Argentina), "being creative" (Brazil) and "spirit of innovation" (China). Key communication skills crucial to **resolving tensions and dilemmas** are also highlighted by some countries/jurisdictions. For example, the Czech Republic stresses that students should be able to engage "in effective and open communication on all possible issues". Lithuania emphasises the "ethical use of verbal and non-verbal instruments and technologies" in communicating with one another, and Kazakhstan underlines that students should have a "strong culture of human dialogue".

## Curriculum goals

Curriculum goals are specified through the laws governing curricula, which include school and education acts for different education levels, regulations on curricula and curriculum standards and frameworks.

More than half of countries/jurisdictions regulate their curricula within two or fewer laws, directives or decisions (Table WEB 14[5]). This ranges from one in the Netherlands, New Zealand, Northern Ireland (United Kingdom), Ontario (Canada), Sweden, Wales (United Kingdom), Argentina, Costa Rica, India, and South Africa to seven in Portugal and Hong Kong (China) and eight in Kazakhstan.

Of these laws, more than 65% countries regulate curriculum content; more than 45%, certification or graduation requirements and assessment; more than 40% regulate curricular values; less than 35% regulate local curriculum flexibility, assessment, pedagogies or instruction time. (Figure 27).

Figure 27 **Laws regulating the curriculum**

Percentage of laws regulating the curriculum out of the total number of laws reported by countries/jurisdictions
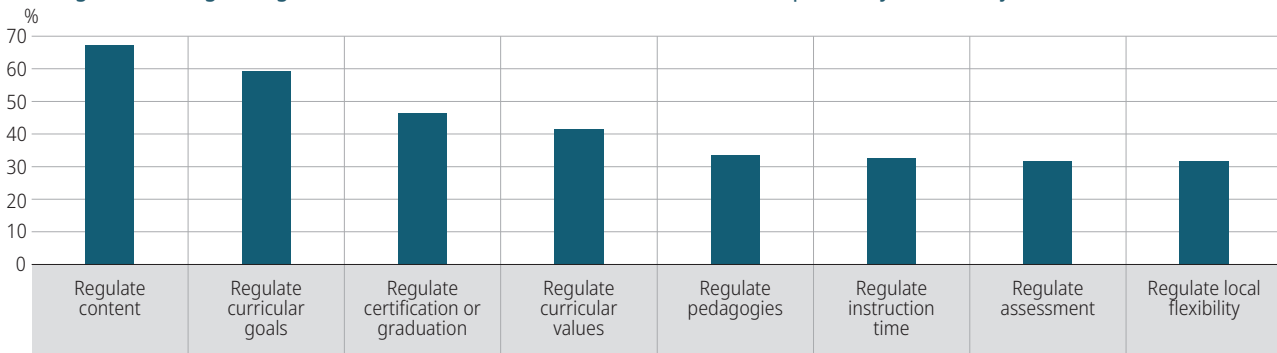


**Notes**: Percentages displayed in this figure include only responses that could be clearly coded as yes/ no. This is not an exhaustive list of countries that submitted these goals.

Responses for Northern Ireland (United Kingdom), the United States, Brazil and India were submitted by independent researchers, not government administrations.

Curricular values encompass values derived from societal aims, such as those defined in countries'/jurisdictions' constitutions, as well as specific values education is tasked to foster within countries/jurisdictions such as inclusion, fairness, respect, etc.

**Source**: Data from the PQC, item 0.2.

StatLink ᠍ https://doi.org/10.1787/888934195207

## Subject-specific goals

Subject-specific goals are defined in subject curricula. They can include a variety of specific knowledge and skills outcomes, as well as attitudes and values to be attained by students. Future-oriented competencies highlighted by the OECD Learning Compass 2030 are often included in curricula through the learning goals of already existing subjects, such as mathematics, language and science.

As highlighted in the section below, the curricula of several countries/jurisdictions attach particular competencies to the content of specific subjects. In these cases, teachers are expected to deliver content while at the same time fostering specific competencies (e.g. fostering students' creativity through the teaching of mathematical concepts). This might require an adaptation of teaching practices, for example by supplementing more traditional front-of-the-class lessons with cognitive activation methods that support student agency and deep learning.

## HOW ARE DEMANDS FOR 21ST CENTURY COMPETENCIES AND KEY CONCEPTS INTEGRATED INTO SCHOOL CURRICULUM?

Many of the 21st century competencies outlined in the OECD Learning Compass 2030 are highlighted in countries/jurisdictions' visions for students and student profiles (see above on future vision and education goals).

For effective stakeholder engagement and communication, many countries/jurisdictions prepare visual representations of these competencies (see Annex on National or regional curriculum frameworks and visualisations[6]).

Agency and co-agency as highlighted in the OECD Learning Compass 2030 are key concepts underlying 21st century competencies. On average across countries/jurisdictions, **student agency** appears in curriculum more often than **co-agency** (33% versus 27%).

Among transformative competencies, **creating new value** is present more frequently (35%), than **taking responsibility** (29%) or **reconciling tensions** (19%).

Skills, attitudes and values for 2030 are also well represented in mapped curricula. On average across countries/jurisdictions, cognitive skills are the most highly emphasised: **critical thinking** (66%) followed by **problem solving** (59%). Learning to learn, crucial to navigate an uncertain future and widely seen as a key competency for lifelong learning, is also well represented in average across countries/jurisdictions (36%). Socio-emotional skills and attitudes such as **co-operation/collaboration and respect** (over 30%) are also given prominence in mapped curricula. Notions that support the acquisition and further development of 21st century competencies (**anticipation, action and reflection**) are also present in more than one-third of the mapped curricula.

On average, student agency is found most often in **national language** (10%) and least often in **mathematics** (2%). Co-agency is also most often present in **national language** (6%). However, it is not so frequently mapped in **humanities** (4%), where one would typically expect to find discussions on co-operation with teachers and the wider community or collective action.

As can be expected, the general tendency for two of the transformative competencies, taking responsibility and reconciling tensions, is the same: they are found most often in **humanities** (6%) and **national language** (5%) and least often in

**mathematics** (1%). Creating new value, on the other hand, is found most often in **national language** (10%) and least often in **physical education (PE) health** (1%).

Critical thinking is most present in **national language** (15%) and least present in **PE health** (4%). Problem solving is most prominent in **mathematics** (13%) and least prominent in **PE health** and **arts** (5%). The tendencies for co-operation/collaboration and respect are strikingly similar: in **national language,** co-operation/collaboration at 8% and respect at 9%, in **mathematics** 2% for co-operation/collaboration and 1% for respect. Surprisingly, co-operation/collaboration is comparably mapped to a low degree in **humanities** (5%). Action, reflection and anticipation are most present in **national language** (11%). Action is least present in **mathematics** and **arts** (4%) and also unexpectedly low in **PE health** (5%). Reflection and anticipation are least prominent in the mapped **PE health** curriculum (3%). (Figure 28)

Figure 28 **21st century competencies and key concepts in curricula**

Percentage of content items in the overall mapped curricula targeting each competency (as main or sub-target) and distribution, by learning area; on average across countries/jurisdictions with available data
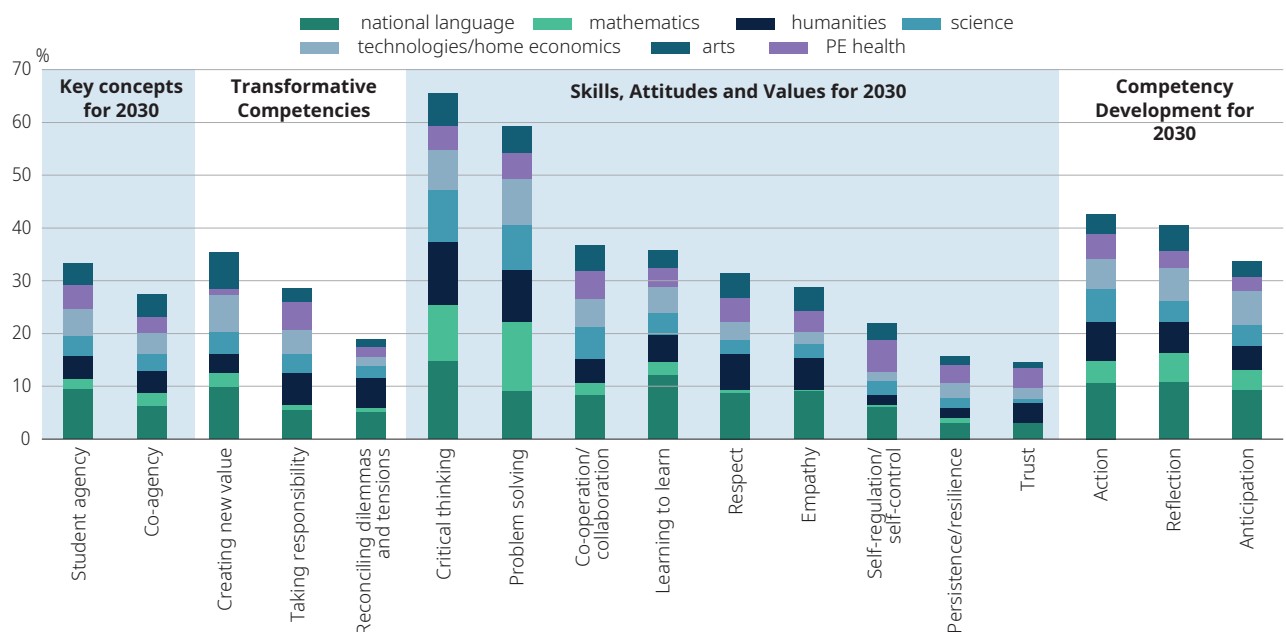


**Note**: The averages include OECD countries/jurisdictions and partner economies participating in the Curriculum Content Mapping exercise. OECD countries and jurisdictions: Australia, British Columbia (Canada), Saskatchewan (Canada), Estonia, Greece, Israel, Japan, Korea, Lithuania, Northern Ireland (United Kingdom), Portugal and Sweden. Partner countries: China, Kazakhstan and the Russian Federation.

**Source**: Data from the Curriculum Content Mapping exercise.

*StatLink* https://doi.org/10.1787/888934195226

## Key concepts for 2030

The OECD Learning Compass, as discussed in section "What does research say?" provides a framework and guidance for skills to foster in students to ensure success into 2030 in a rapidly changing world. Countries/jurisdictions have a wide variety of ways to embed these skills in curriculum, and teachers may feel adequately prepared to teach them or may need additional support.

Identifying whether student agency and co-agency are adequately fostered in curriculum early in the redesign process or before it starts can potentially mitigate lags in curriculum redesign.
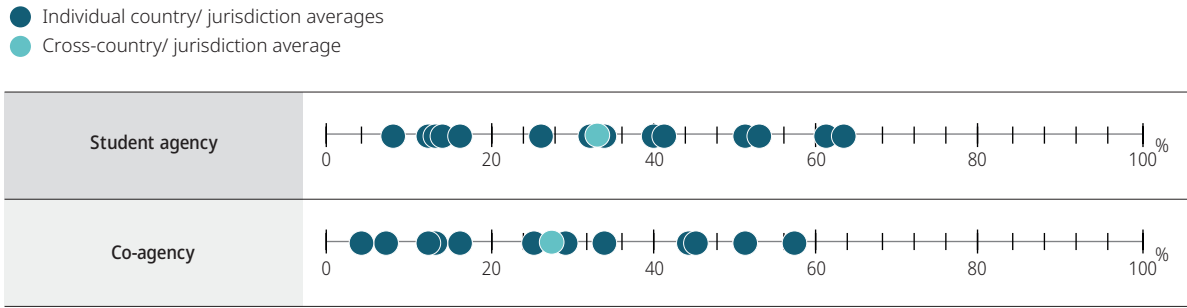
Across countries/jurisdictions, agency and co-agency, key concepts for 2030, are included to different degrees in the seven learning areas. On average, student agency is included in 33% and co-agency in 27% (Figure 29). Individual country/jurisdictional averages of student agency range from 8% (Greece) to 63% (China). This also is the case for co-agency, where averages range from 4% (Russian Federation) to 57% (Kazakhstan).

### *Student agency*

Agency is an important competency to foster among students in a future-oriented curriculum (see "What does research say?"). However, not all curricula embed this concept, nor do all teachers feel adequately prepared to foster the development of agency, with potential consequences for a lag in implementation.

Figure 29 **Key concepts for 2030 in curricula**

- ● Individual country/ jurisdiction averages
- ● Cross-country/ jurisdiction average

| | |
|---|---|
| Student agency |  |
| Co-agency |  |

**Note**: The percentage refers to the total percentage of the mapped curriculum that embeds the competency as a main or a sub-target.

**Source**: Data from the Education 2030 Curriculum Content Mapping exercise.

StatLink ⧉ https://doi.org/10.1787/888934195245

Student agency is embedded in national curricula, ranging from 8% in Greece to 63% in China, while most countries/jurisdictions embed it in over 30% of the curriculum (Figure 30). For most countries/jurisdictions, student agency is most emphasised in the national language learning area. For example, Japan has mapped over 80% of their agency content within national language. Only three countries/jurisdictions, British Columbia (Canada), Greece and Northern Ireland (United Kingdom), do not include student agency in national language. British Columbia (Canada) embeds over 40% of its student agency content in mathematics, Greece has roughly 30% in both arts and PE health, and Northern Ireland (United Kingdom) includes nearly 50% of the content in humanities. With the exceptions of British Columbia (Canada), Korea and Saskatchewan (Canada), countries/jurisdictions do not include it in mathematics. All countries/jurisdictions include agency at least to some degree in technology/home economics. The four other learning areas of humanities, science, arts and PE health, all frequently represent 10% to 20% of the mapped items.

Figure 30 **Student agency in curricula**

Distribution of content items in the mapped curricula targeting student agency (as main or sub-target), by learning area
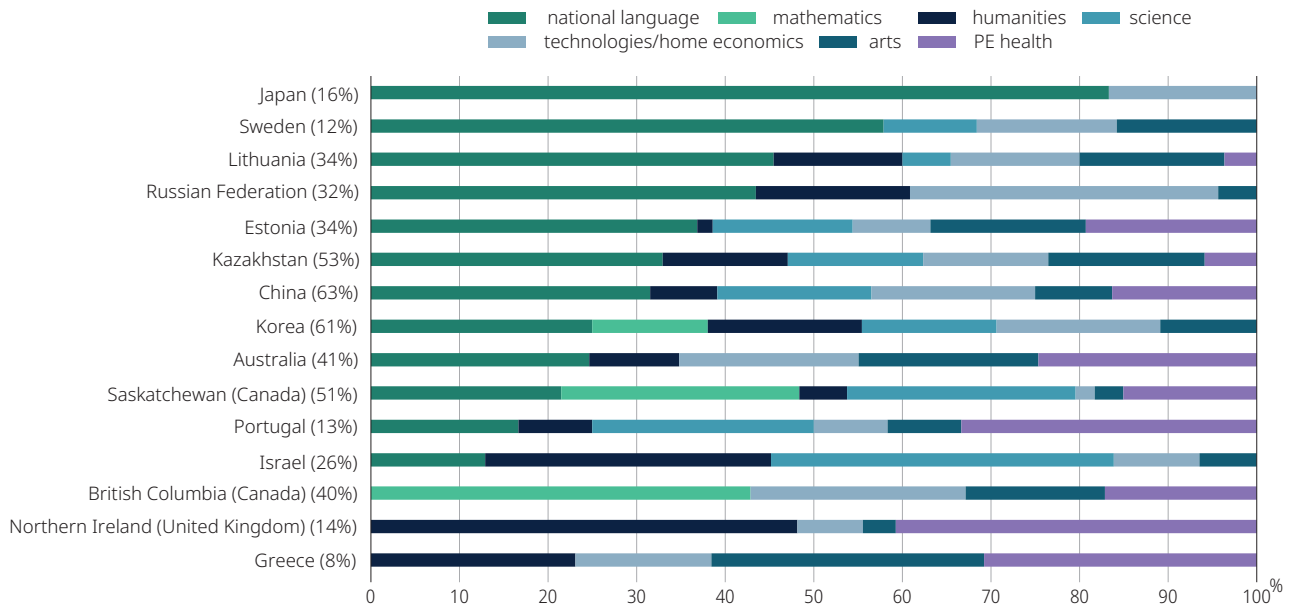


**Note**: The percentage next to the name of the country/jurisdiction refers to the total percentage of the mapped curriculum that embeds the concept. The data has been ordered descending from the largest percentage of mapped curriculum corresponding to this concept.

**Source**: Data from the Education 2030 Curriculum Content Mapping exercise.

StatLink ⧉ https://doi.org/10.1787/888934195264

**How prepared do teachers feel to foster student agency in classroom?**

TALIS data reveal that, on average, 81% of teachers believe that they can help students to value learning, an important component of student agency, either "quite a bit" or "a lot", although this varies considerably across countries/jurisdictions (Figure 31). In some, nearly all teachers indicate that they have self-efficacy in relation to helping students to value learning, including 99% of teachers in Portugal and Viet Nam and 98% of teachers in Colombia. In contrast, less than half of teachers in Croatia (47%) and just one in three teachers (34%) in Japan feel confident in their ability to do so.

Figure 31 **Teachers' self-efficacy for helping students to value learning**

Percentage of teachers who feel they can help students value learning "quite a bit" or "a lot"
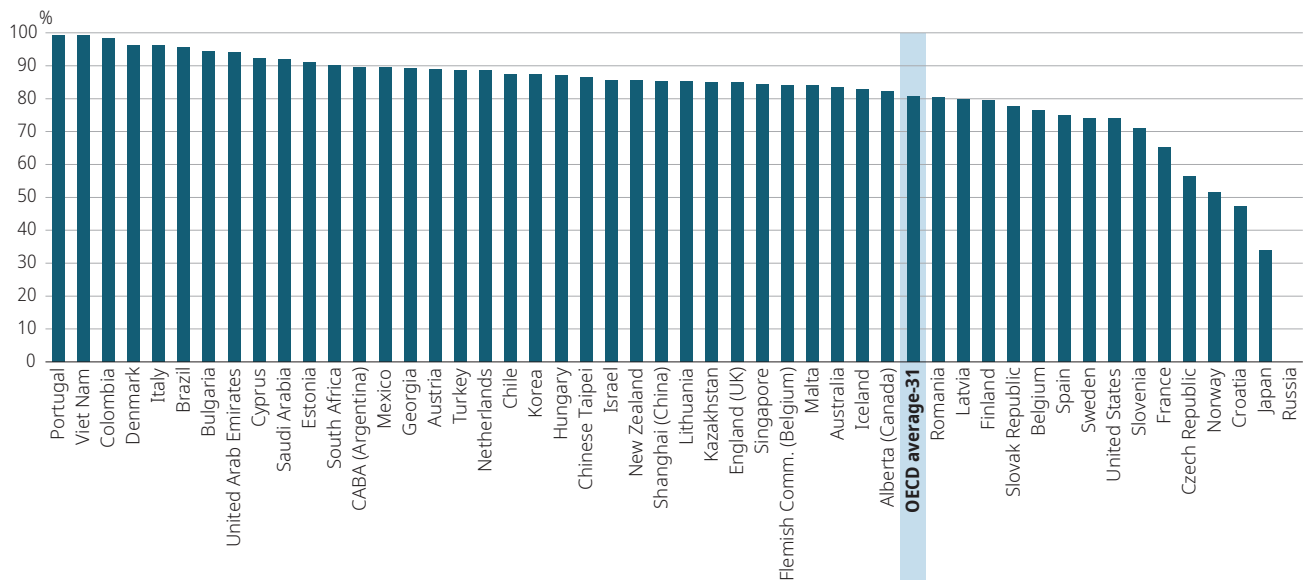


**Notes**: Results based on responses of lower secondary teachers.
Countries and economies are ranked in descending order of the percentage of teachers who feel they can help students to value learning "quite a bit" or "a lot"
Information on data for Cyprus: https://oe.cd/cyprus-disclaimer.
**Source**: TALIS 2018, Table I.2.20, https://doi.org/10.1787/888933933045
StatLink ⧉ https://doi.org/10.1787/888934195283

The general trend among OECD countries/jurisdictions and partner countries points to a less frequent use of cognitive activation practices (i.e. those aimed at stimulating higher-order skills like problem solving, critical thinking and decision making) among lower secondary teachers compared to other classroom practices. Most see more than half of their teachers "frequently" or "always" refer to a problem from everyday life or work to demonstrate why new knowledge is useful. Teachers then let students practise similar tasks until they know that every student has understood the subject matter (Figure 32). For example, teachers in Chile (88%), Hungary (85%), Korea (82%), Mexico (89%), Portugal (93%) and Turkey (87%) all employ the practice of referring to a problem from everyday life or work far more frequently than the global average (74%).
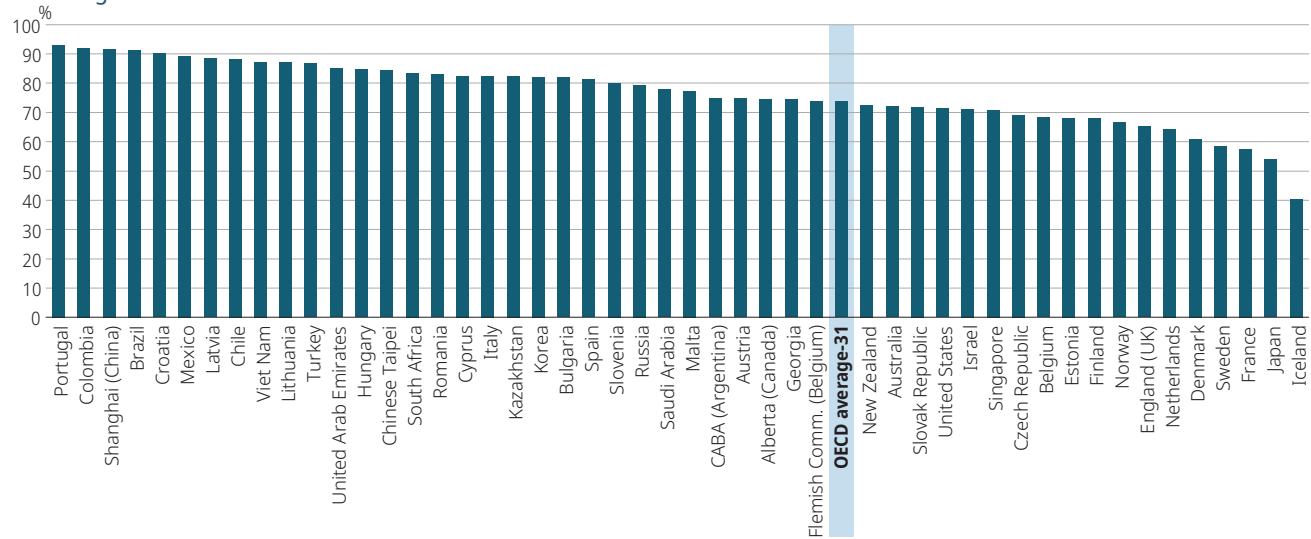
In addition, only 68% of teachers report feeling confident that they can motivate students who show low interest in school work. The lowest rates of teachers reporting that they can do "quite a bit" or "a lot" to motivate students are in Japan (31%) and Norway (32%). In Portugal, Colombia, the United Arab Emirates and Viet Nam, more than 90% of teachers report that they can motivate students (Figure 33).

In Colombia, Denmark, Italy and Portugal, 99% of teachers report high self-efficacy when it comes to getting students to believe they can do well in school work. In Japan, only 24% of teachers report the same. In Portugal and Viet Nam, 99% of teachers report high self-efficacy to help students value learning, while only 34% of teachers in Japan report so (Figure 34).

Across OECD countries/jurisdictions, teachers also demonstrate variation in the extent to which they enable students to decide on their own procedures for solving complex tasks (Figure 35). This cognitive activation task averages at 45% of teachers who "frequently" or "always" ask students to decide on procedures. This ranges from 21% in Croatia to 75% in Kazakhstan.

Figure 32 **Teachers' use of problems from everyday life or work to demonstrate why new knowledge is useful**

Percentage of teachers who "frequently" or "always" refer to a problem from everyday life or work to demonstrate why new knowledge is useful



**Notes**: Results based on responses of lower secondary teachers.

These data are reported by teachers and refer to a randomly chosen class they currently teach from their weekly timetable.
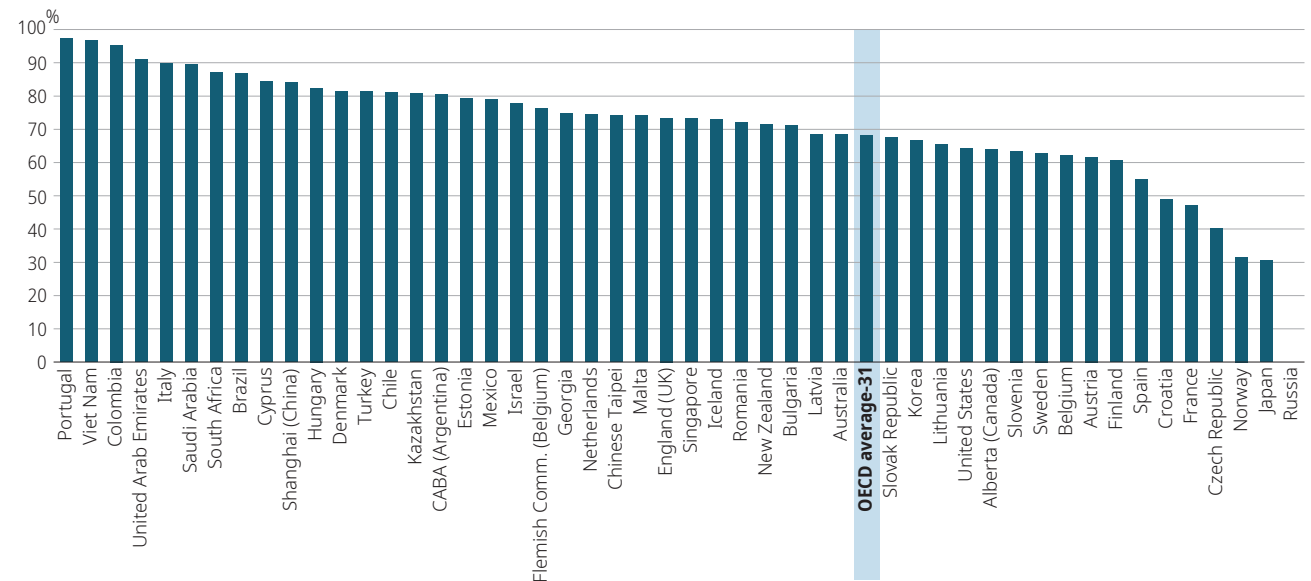
Information on data for Cyprus: https://oe.cd/cyprus-disclaimer

**Source**: OECD, TALIS 2018 Database, Table I.2.1., https://doi.org/10.1787/888933933045

StatLink https://doi.org/10.1787/888934195302

Figure 33 **Teachers' self-efficacy to motivate students who show low interest in school work**

Percentage of teachers who feel they can motivate students who show low interest in school work "quite a bit" or "a lot"



**Notes**: Results based on responses of lower secondary teachers.

Countries and economies are ranked in descending order of the percentage of teachers who feel they can motivate students who show low interest in school work "quite a bit" or "a lot".

Information on data for Cyprus: https://oe.cd/cyprus-disclaimer

**Source**: TALIS 2018, Table I.2.20, https://doi.org/10.1787/888933933045

StatLink https://doi.org/10.1787/888934195321

Figure 34 **Teachers' self-efficacy to get students to believe that they can do well in school work**

Percentages of teachers who feel they can get students to believe they can do well in school work "quite a bit" or "a lot"
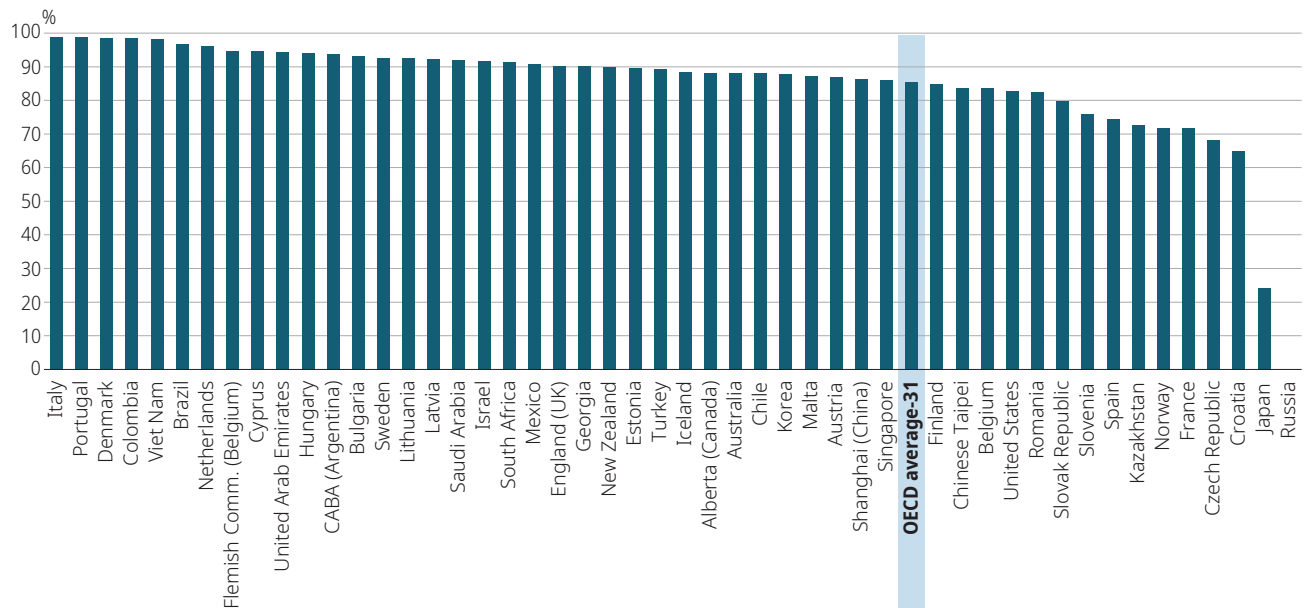


**Notes**: Results based on responses of lower secondary teachers.
Countries and economies are ranked in descending order of the percentage of teachers who feel they can get students to believe they can do well in school "quite a bit" or "a lot".
Information on data for Cyprus: https://oe.cd/cyprus-disclaimer
**Source**: TALIS 2018, Table I.2.20, https://doi.org/10.1787/888933933045
*StatLink* 🖳📊 https://doi.org/10.1787/888934195340

Figure 35 **Teachers asking students to decide on their own procedures for solving complex tasks**

Percentage of teachers who "frequently" or "always" ask students to decide on their own procedures for solving complex tasks



**Notes**: Results based on responses of lower secondary teachers.
These data are reported by teachers and refer to a randomly chosen class they currently teach from their weekly timetable.
Information on data for Cyprus: https://oe.cd/cyprus-disclaimer
**Source**: TALIS 2018, Table I.2.20, https://doi.org/10.1787/888933933045.
*StatLink* 🖳📊 https://doi.org/10.1787/888934195359
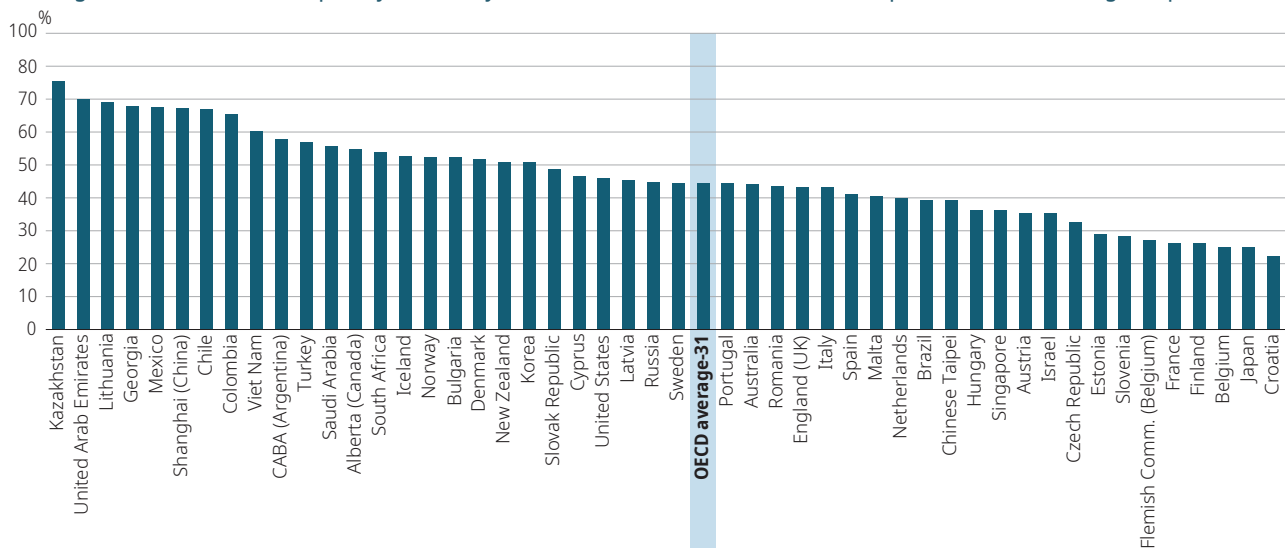
## *Co-agency*

As with student agency, co-agency is a key competency to foster in students, with variations in coverage in the curriculum and perceptions on the part of teachers regarding their ability to teach it.

The extent to which student co-agency is embedded in curriculum ranges from 4% in the Russian Federation to 57% in Kazakhstan (Figure 36). It is emphasised in the content areas of national language, humanities, and technologies/home economics. Portugal maps over 70% of its co-agency content into national languages, and Australia includes 40% of its content in technology/home economics. Most countries/jurisdictions embed less than 15% of co-agency content in arts, but the Russian Federation includes over 80% of its co-agency items in arts.

Figure 36 **Student co-agency in curricula**

Distribution of content items in the mapped curricula targeting student co-agency (as main or sub-target), by learning area
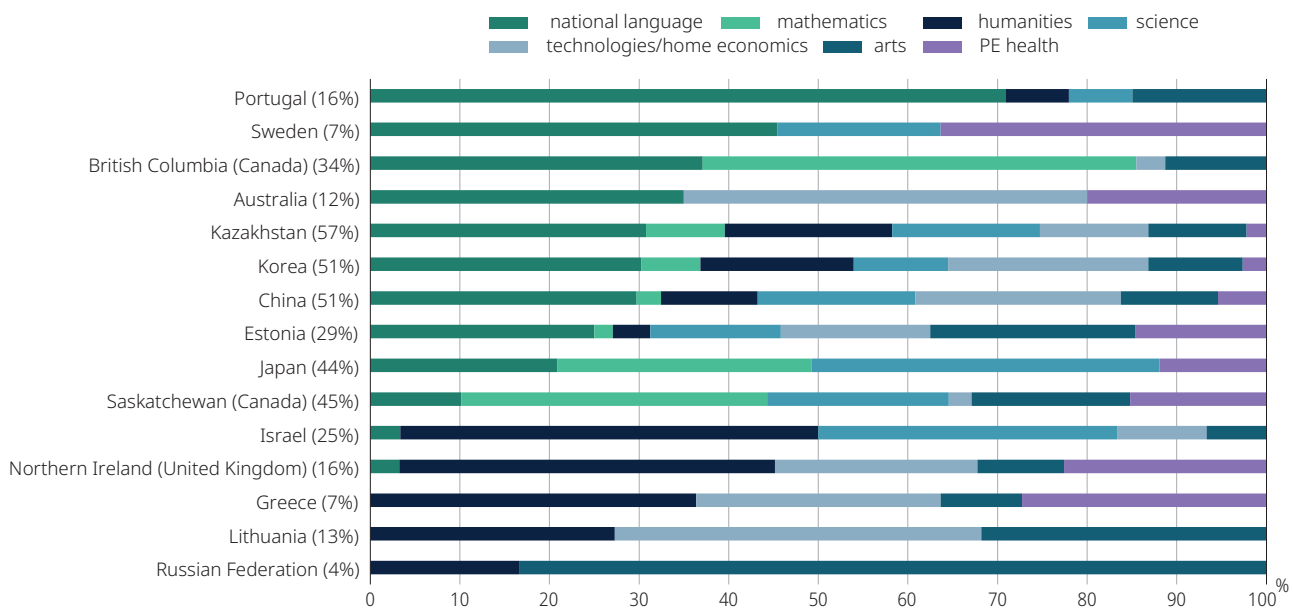


**Note**: The percentage next to the name of the country/jurisdiction refers to the total percentage of the mapped curriculum that embeds the concept.
**Source**: Data from the Education 2030 Curriculum Content Mapping exercise
StatLink https://doi.org/10.1787/888934195378

Teachers can also foster the development of co-agency through the use of particular teaching practices. For example, teachers can encourage students to come up with joint solutions to problems. This small group work thus fosters the use of collaborative and co-agentic strategies.

Most countries/jurisdictions see more than half of their teachers "frequently" or "always" encouraging students to solve joint problems through small group work (Figure 37). In Mexico, for example, 71% of teachers reported having students work in small groups to come up with solutions).
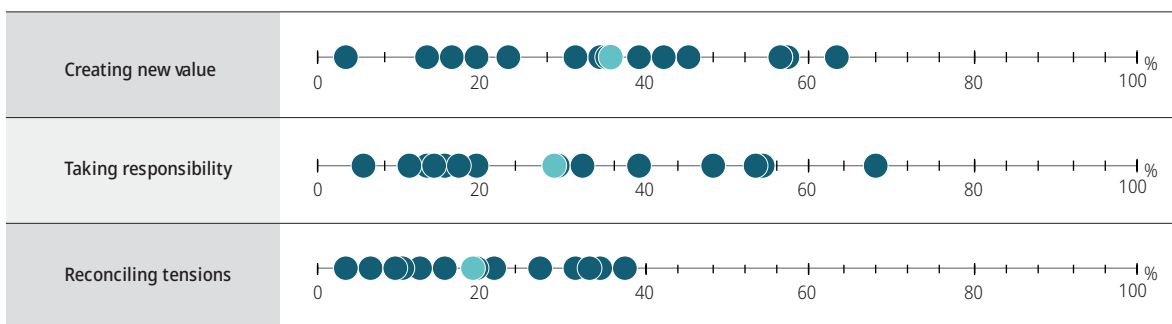
## Transformative competencies for 2030

The inclusion of transformative competencies in the existing curriculum can be a strategy to address curriculum overload (see "Challenges and strategies" section in (OECD, 2020[6])). With changing labour markets and societal conditions, the need to include these in the curriculum can become more and more pressing for some countries/jurisdictions on their way to a holistic, flexible curriculum.

Across countries/jurisdictions, transformative competencies such as creating new value, taking responsibility, and reconciling tensions are included in the seven learning areas to different degrees (Figure 38). On average, they are included in 35% (creating new value), 29% (taking responsibility) and 19% (reconciling tensions) of the mapped curriculum.

Figure 37 **Teachers having students work in small groups to come up with a joint solution to a problem**

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Percentages of teachers who "frequently" or "always" have students work in small groups to come up with a joint solution for a problem
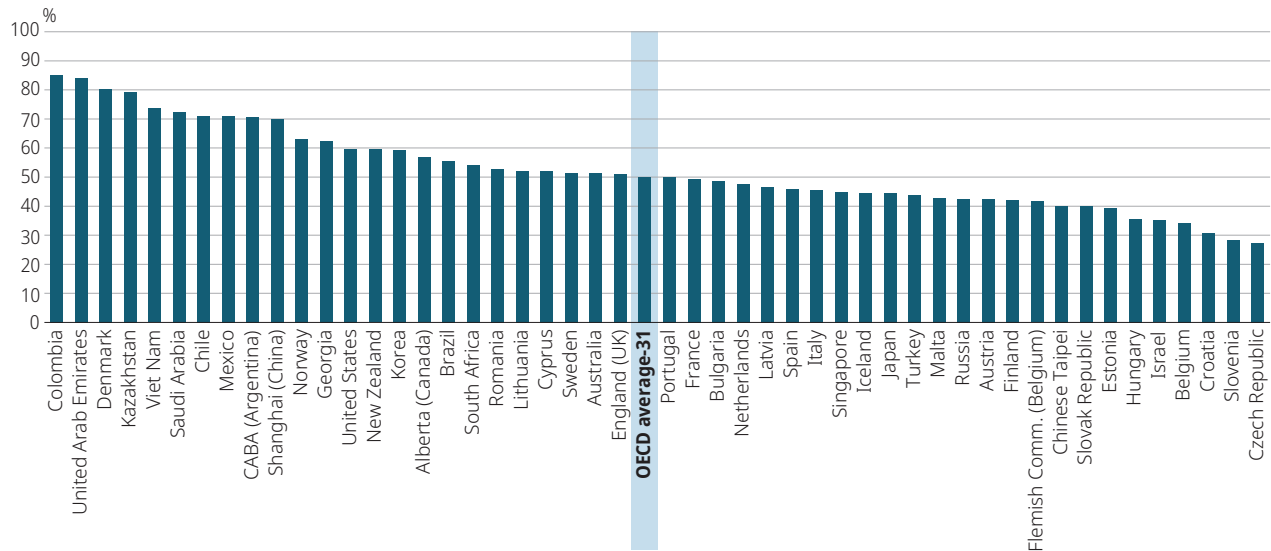


**Notes**: Results based on responses of lower secondary teachers.

These data are reported by teachers and refer to a randomly chosen class they currently teach from their weekly timetable.

Information on data for Cyprus: https://oe.cd/cyprus-disclaimer

**Source**: OECD, TALIS 2018 Database, Table I.2.1., https://doi.org/10.1787/888933933045

StatLink ᵃᵍˢ🔗 https://doi.org/10.1787/888934195397

Figure 38 **Transformative competencies for 2030 in curricula**

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

- Individual country/ jurisdiction averages
- Cross-country/ jurisdiction average



**Note**: The percentage refers to the total percentage of the mapped curriculum that embeds the competency as a main or a sub-target.

**Source**: Data from the Education 2030 Curriculum Content Mapping exercise.

StatLink ᵃᵍˢ🔗 https://doi.org/10.1787/888934195416

## *Creating new value*

Across countries/jurisdictions, the three most common learning areas in which creating new value curricular items are observed are national language, arts, and technologies/home economics (Figure 39). Only three countries/jurisdictions do not include it in one of these learning areas: British Columbia (Canada) (national language); Greece (arts); and the Russian Federation (technology/home economics). It is least often carried in PE health and mathematics.

Most countries/jurisdictions map creating new value onto their curriculum items between 30% and 60% of the time. Estonia (63%) had the highest rate of targeting creating new value, and Greece had the lowest (3%).

On average across countries/jurisdictions, creating new value is represented in more than five learning areas. Greece only includes it in two of its learning areas, while Estonia, Korea, Northern Ireland (United Kingdom), Saskatchewan (Canada) and Kazakhstan carry it at least to some degree in all learning areas.

In the Russian Federation, almost 60% of the curriculum items are carried within national language. In British Columbia (Canada), almost 60% are mapped in arts. In Greece, 60% are carried in technologies/home economics. In Japan, over 50% of the items come from mathematics and science. Few countries/jurisdictions target creating new value in PE health. Estonia, Korea, Lithuania, Northern Ireland (United Kingdom), Saskatchewan (Canada), Sweden, China and Kazakhstan carry up to 10% of the items in PE health.

Figure 39 **Creating new value in curricula**

Distribution of content items in the mapped curricula targeting creating new value (as main or sub-target), by learning area
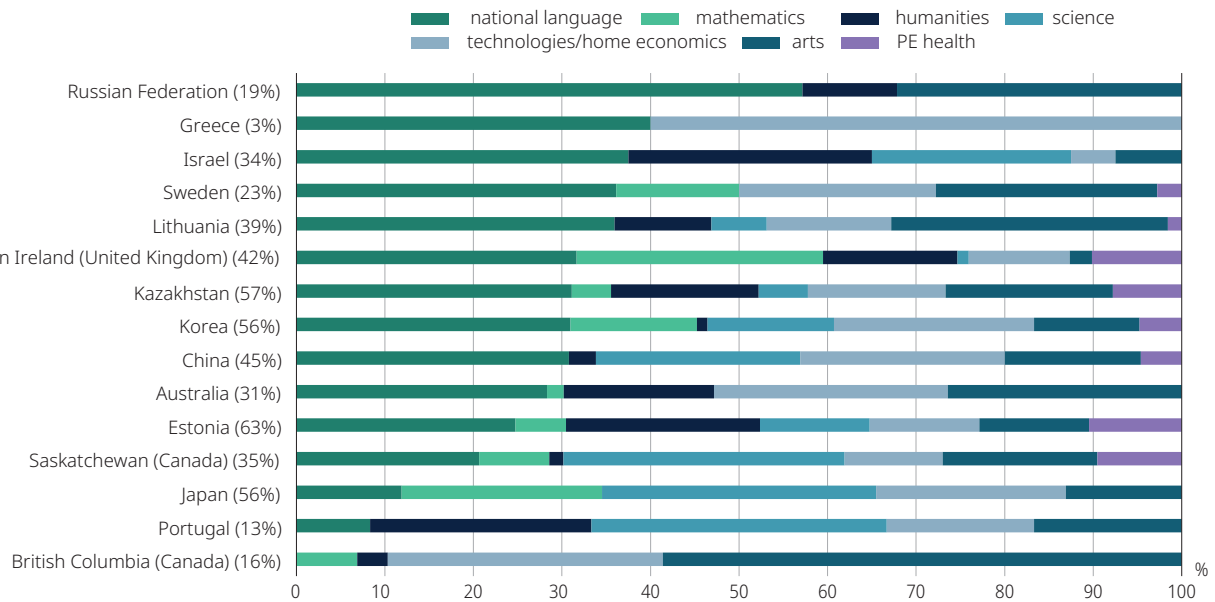


**Note**: The percentage next to the name of the country/jurisdiction refers to the total percentage of the mapped curriculum that embeds the competency.
**Source**: Data from the Education 2030 Curriculum Content Mapping exercise.
*StatLink* ⟰ᐧᵀ⟐ https://doi.org/10.1787/888934195435

## Taking responsibility

In contrast to creating new value, taking responsibility is frequently mapped onto the domain of PE health. Only the Russian Federation does not carry any items on taking responsibility here; it seems to cluster all of its content related to taking responsibility in humanities. The average percentage of content mapped to taking responsibility is highest in humanities and national language. Australia, British Columbia (Canada), Japan, Northern Ireland (United Kingdom), Portugal and Saskatchewan (Canada) all map well over 20% of their items onto PE health. Indeed, for Japan a full 50% of items are carried by PE health. In Sweden, over 80% of the items are represented by the national language learning area. Only four countries/jurisdictions map taking responsibility onto the domain of mathematics: British Columbia (Canada), Estonia, Korea and Saskatchewan (Canada) (Figure 40).

## Reconciling tensions and dilemmas

Reconciling tensions and dilemmas is one of the more rare competencies mapped across national curricula. No curriculum includes it in more than 40% of the curriculum items, and four countries/jurisdictions include it in less than 10% (Greece, Portugal, Saskatchewan [Canada] and the Russian Federation).

Estonia has the highest rate of mapped items for reconciling tensions and dilemmas (37%) and includes items across all seven learning areas, with the majority (over 40%) included in the national language learning area. In several countries, reconciling tensions and dilemmas is only embedded in a few learning areas. In Sweden, it is only represented in national language. Portugal includes items in the two learning areas of humanities and science. The Russian Federation embeds it also in two learning areas, humanities and PE health (Figure 41).

Figure 40 **Taking responsibility in curricula**

Distribution of content items in the mapped curricula targeting taking responsibility (as main or sub-target), by learning area
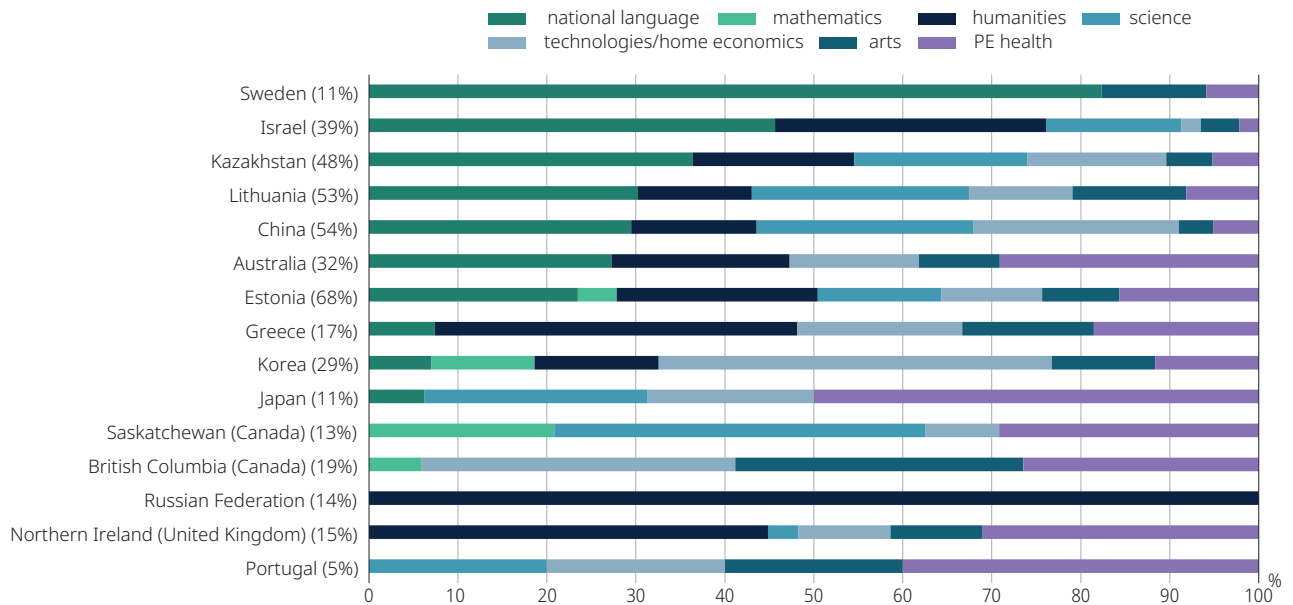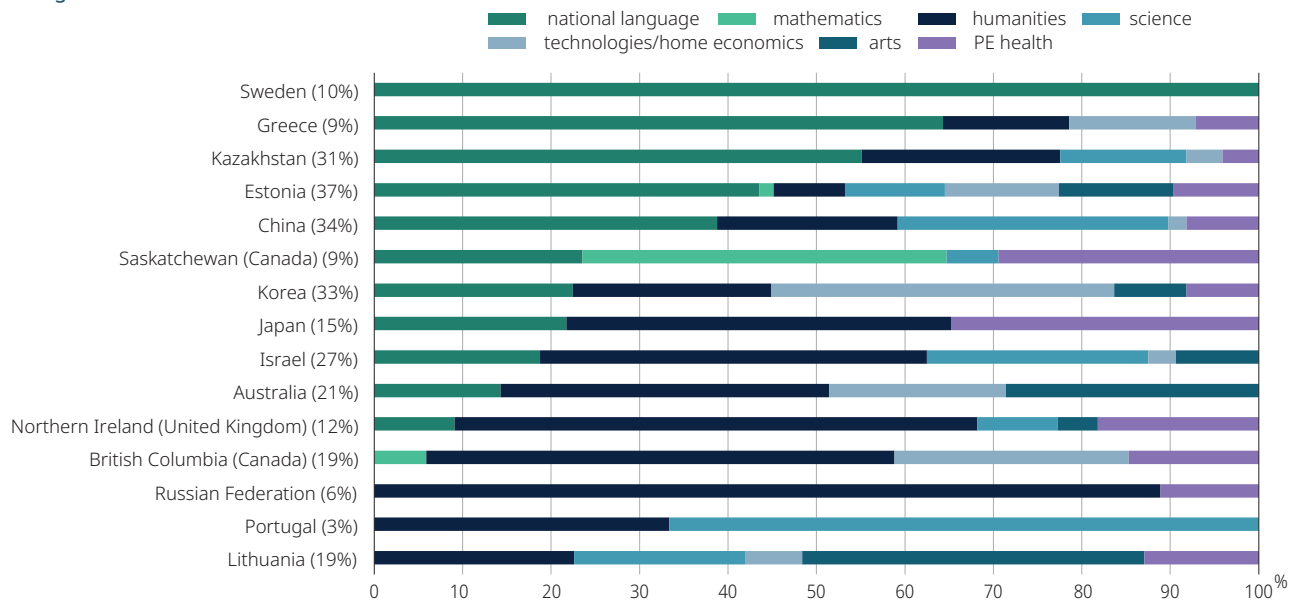


**Note**: The percentage next to the name of the country/jurisdiction refers to the total percentage of the mapped curriculum that embeds the competency.

**Source**: Data from the Education 2030 Curriculum Content Mapping exercise

StatLink ⬛🖺 https://doi.org/10.1787/888934195454

Figure 41 **Reconciling tensions and dilemmas in curricula**

Distribution of content items in the mapped curricula targeting reconciling tensions and dilemmas (as main or sub-target), by learning area



**Note**: The percentage next to the name of the country/jurisdiction refers to the total percentage of the mapped curriculum that embeds the competency.

**Source**: Data from the Education 2030 Curriculum Content Mapping exercise

StatLink ⬛🖺 https://doi.org/10.1787/888934195473

## Skills, attitudes and values for 2030

Among those skills, attitudes and values studied in the curriculum mapping exercise (see Curriculum Content Mapping description in the Technical report: Curriculum Analysis of the OECD Future of Education and Skills 2030)[7], across countries/jurisdictions and learning areas, critical thinking is mapped most frequently, with 66% of mapped curriculum items, followed by problem solving (59%) (Figure 42). Trust (15%) and persistence/resilience (16%) are carried to the lowest extent in countries' curricula in the seven subjects.

The embedding of problem solving shows the highest variation across countries/jurisdictions, with values ranging from 14% to 83%. Variation is also high for co-operation/collaboration (9% to 71%). It is lowest for persistence (0% to 32%) and trust (2% to 38%).

At 85% in Israel, critical thinking shows the highest rate of inclusion of all of the skills, attitudes and values described here, followed by problem solving in Israel, Japan and Korea (83%). The lowest emphasis is shown on self-regulation/self-control, persistence/resilience and trust, in Australia (self-regulation/self-control: 0%, persistence: 3%), Greece (persistence/resilience: 3%, trust: 2%), and Portugal (self-regulation/self-control: 4%, persistence/resilience: 0%).

Figure 42 **Skills, attitudes and values for 2030 in curricula**
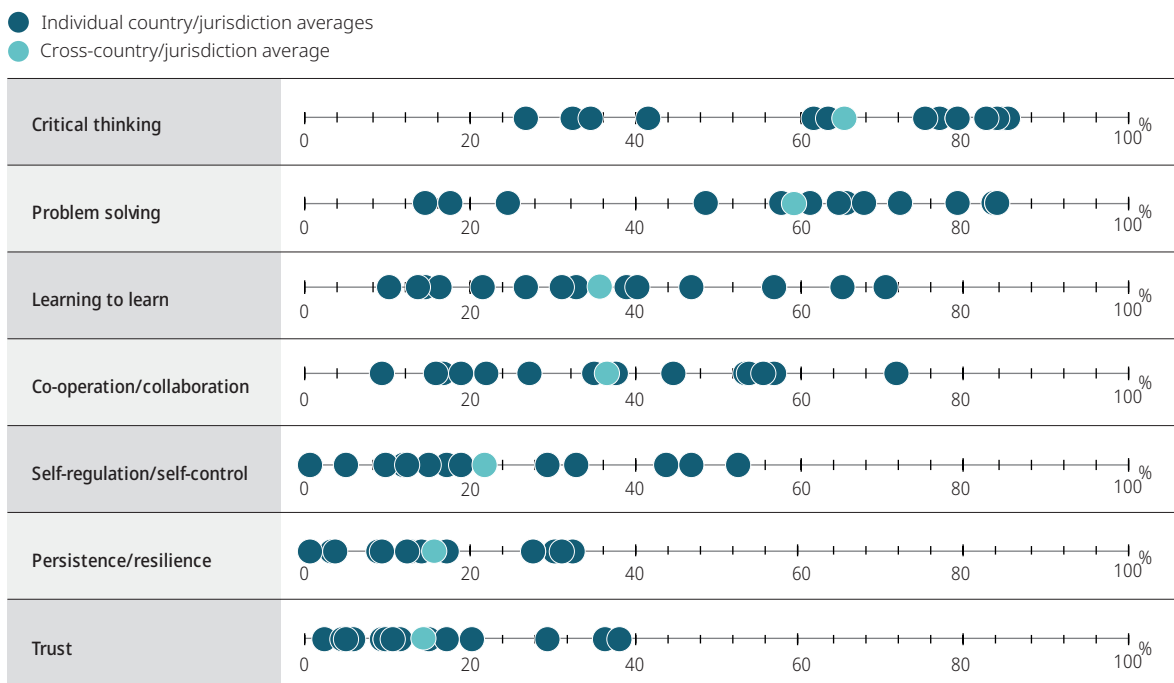


**Note**: The percentage refers to the total percentage of the mapped curriculum that embeds the competency as a main or a sub-target.
**Source**: Data from the Education 2030 Curriculum Content Mapping exercise.
StatLink ᵜ𝖘ᴸ https://doi.org/10.1787/888934195492

### *Critical thinking*

Compared to other concepts, critical thinking is strongly emphasised in curricula, with a presence in over 60% of the mapped items in most of the participating countries/jurisdictions (Figure 43).

Furthermore, in most of the countries/jurisdictions, it is included in all seven mapped learning areas. There are, however, differences across countries/jurisdictions in the emphasis they give to particular learning areas as spaces to foster critical thinking. Humanities and national language are considerably emphasised in Greece and Japan, with these two learning areas together carrying around 60% of the total number of items that target this competency across the curriculum in both countries. Science, technology, engineering and mathematics (STEM) subjects also play a role in these countries, with technology/home economics, carrying 29% of the critical-thinking items in Japan and mathematics carrying 27% of these items in Greece.

The ability to think critically is emphasised in the student profiles of many countries/jurisdictions and was the most prevalent competency in the mapped curricula (Figure 28). Overall, teacher self-efficacy in relation to fostering critical-thinking skills appears high, with 82% of teachers indicating that they can do so "quite a bit" or "a lot". In several countries/jurisdictions, over 90%

of teachers are confident in their ability to facilitate their students' critical thinking, including in OECD countries such as Portugal (98%), Colombia (98%), Italy (95%) and Denmark (93%), and partner countries such as Brazil (96%) and South Africa (92%). Japan (25%) is the only country in which only a minority of teachers are confident in their ability to help students to think critically (Figure 44).

Figure 43 **Critical thinking in curricula**

Distribution of content items in the mapped curricula targeting critical thinking (as main or sub-target), by learning area
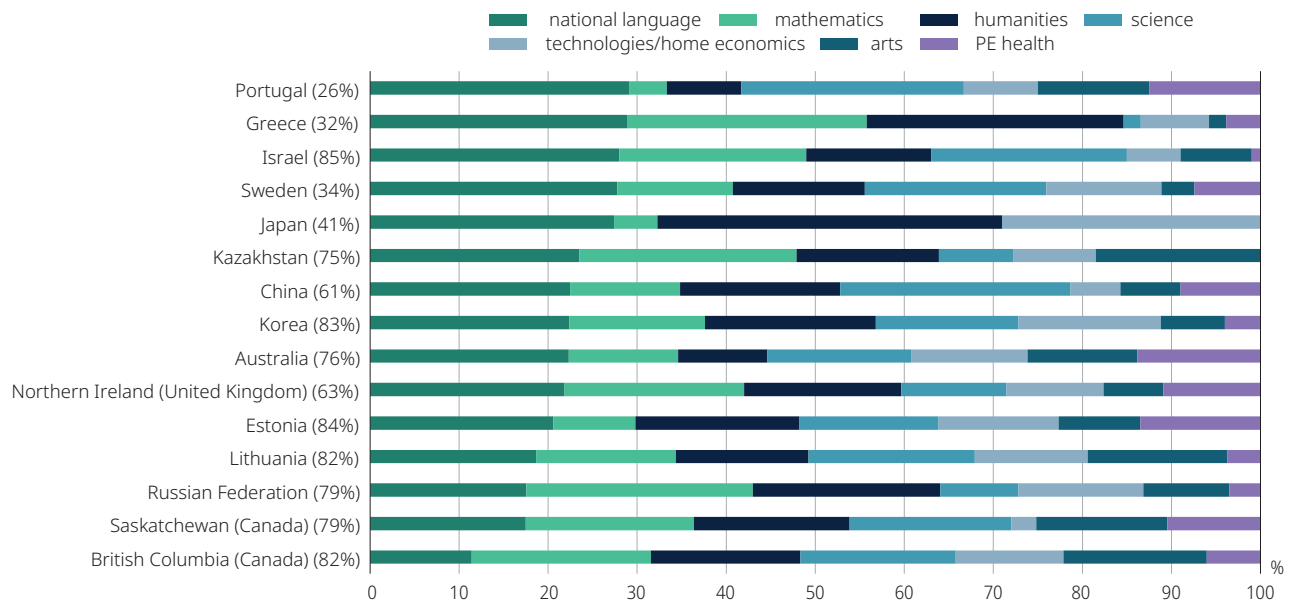


**Note**: The percentage next to the name of the country/jurisdiction refers to the total percentage of the mapped curriculum that embeds the competency.
**Source**: Data from the Education 2030 Curriculum Content Mapping exercise.
StatLink ⬛ https://doi.org/10.1787/888934195511

Figure 44 **Teachers' self-efficacy for helping students to think critically and frequency of giving students critical-thinking tasks**
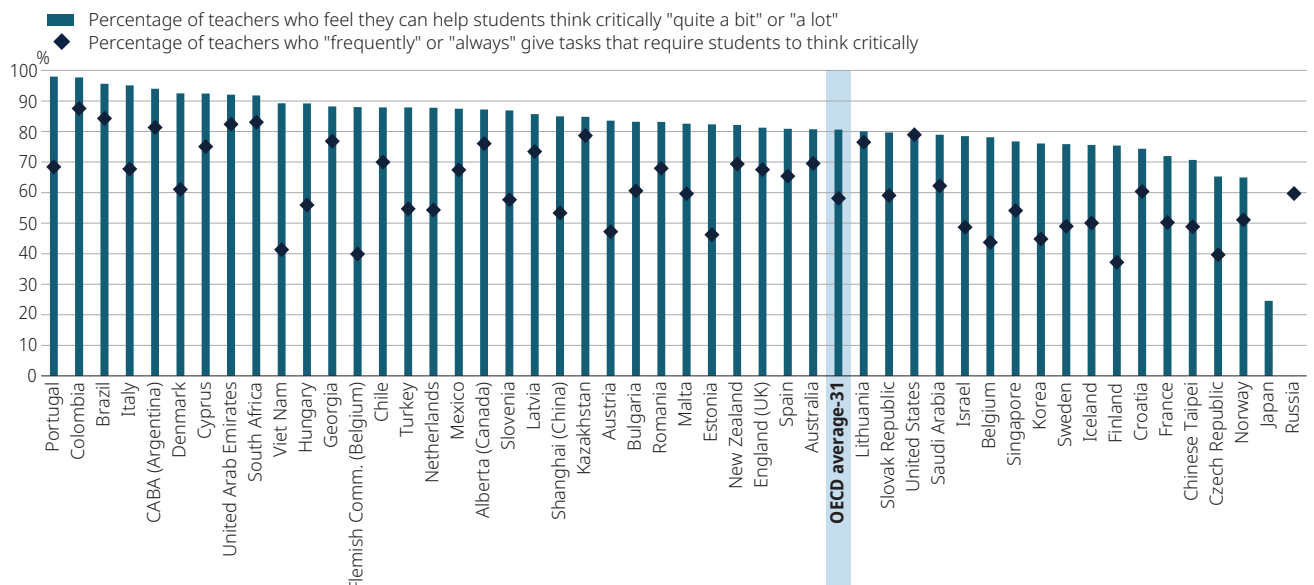


**Notes**: Results based on responses of lower secondary teachers.
Countries and economies are ranked in descending order of the percentage of teachers who feel they can help students to think critically "quite a bit" or "a lot", (no data are available for the Russian Federation on this variable).
Information on data for Cyprus: https://oe.cd/cyprus-disclaimer
**Source**: TALIS 2018, Tables I.2.20 and I.2.1, https://doi.org/10.1787/888933933045
StatLink ⬛ https://doi.org/10.1787/888934195530

Generally, countries/jurisdictions where there are high levels of teacher efficacy for supporting students' critical-thinking skills are also those in which higher proportions of teachers report frequently assigning tasks that require students to think critically. For example, the countries/jurisdictions with the highest proportions of teachers who assign tasks that require students to think critically "frequently" or "always" are Colombia (88%), Brazil (84%) and South Africa (83%), while the lowest percentage is in Japan (just 13%) (Figure 44).

In several countries/jurisdictions, there is a gap between how confident teachers are in their ability to foster critical-thinking skills in their students and the frequency with which they actually assign tasks to students that require these skills. In almost all countries/jurisdictions, teachers are more likely to say that they are confident that they can help students become critical thinkers than to say that they frequently assign tasks requiring critical thinking. For example, while 93% of teachers in Denmark are confident that they can help students to think critically, only 61% frequently assign tasks requiring critical thinking. Similarly, while 89% of teachers in Viet Nam have self-efficacy in relation to fostering critical thinking, only 41% frequently assign critical thinking tasks. An exception to this pattern is the United States, where 80% of teachers say they can help students to think critically "quite a bit" or "a lot" and 79% "frequently" or "always" assign students tasks that require critical thinking.

### Problem solving

Problem-solving skills have an important place across the curricula of OECD countries/jurisdictions and partner countries, emphasising the need to prepare students to enter an increasingly complex and volatile job market. The current inclusion of them in curriculum may also suggest ways to mitigate time lags.

OECD countries/jurisdictions like British Columbia (Canada), Estonia, Korea, Lithuania, Israel, Japan, and Saskatchewan (Canada) and partner countries like China, Kazakhstan and the Russian Federation all include problem solving in over 60% of their mapped curriculum. Israel, Japan and Korea all have the highest rate of inclusion at 83%. In contrast, three countries, Greece, Portugal and Sweden, include problem solving in less than 30% of their mapped curriculum. Problem solving is relatively uniformly represented across all seven learning areas, although arts and PE health have the lowest rates; typically less than 10% of the items are carried in these two domains (Figure 45).

Figure 45 **Problem solving in curricula**

Distribution of content items in the mapped curricula targeting problem solving (as main or sub-target), by learning area
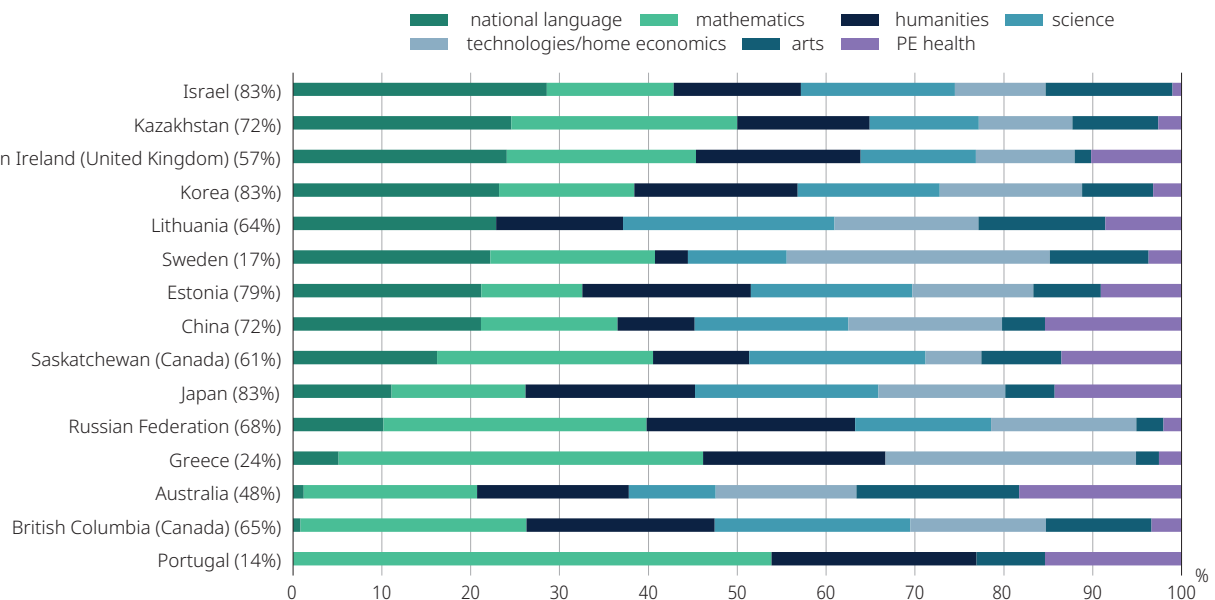


**Note**: The percentage next to the name of the country/jurisdiction refers to the total percentage of the mapped curriculum that embeds the competency.
**Source**: Data from the Education 2030 Curriculum Content Mapping exercise
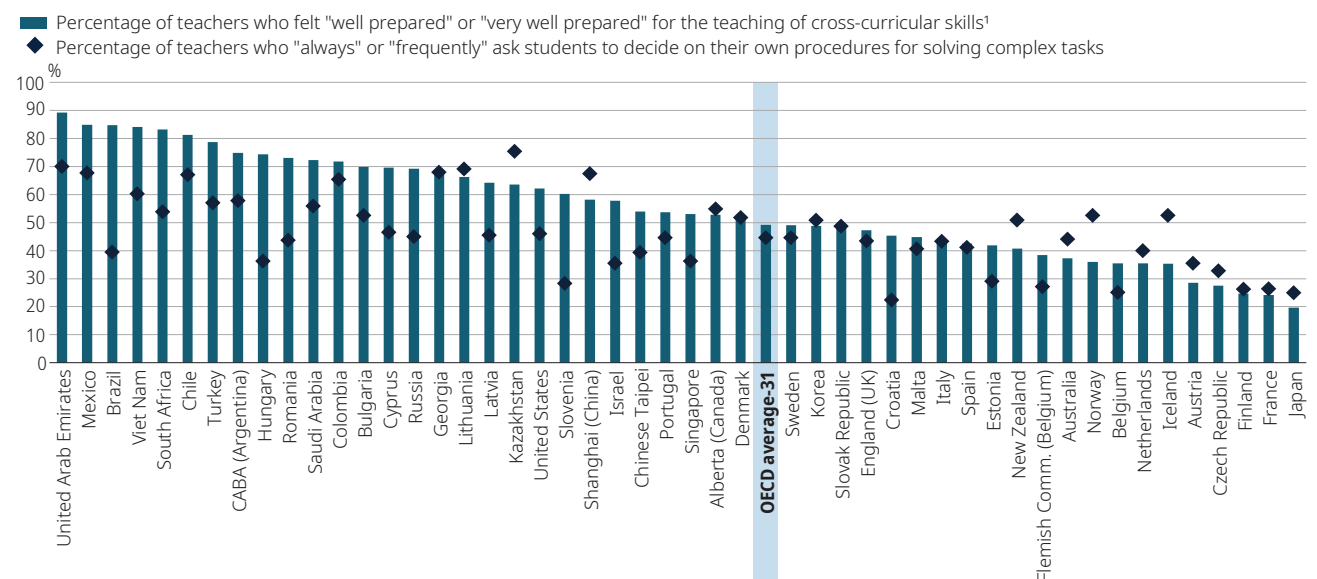StatLink ᐛ https://doi.org/10.1787/888934195549

How well prepared teachers feel to teach cross-curricular skills such as problem solving (Figure 46) and how often they actually solicit students' problem solving skills in their teaching varies across countries/jurisdictions. On average across OECD countries, 49% of teachers feel "well prepared" or "very well prepared" to teach cross-curricular skills, while 45% of teachers "frequently" or "always" ask students to complete tasks for which there is no obvious solution. Among OECD countries, Lithuania (69%),

Mexico (68%) and Chile (67%) show the highest percentage of teachers asking students to decide on their own procedures for solving complex tasks. Mexico (85%) and Chile (81%) also show the highest sense of preparedness among teachers to teach cross-curricular skills.

The average difference between the sense of feeling prepared to teach cross-curricular skills and actual classroom teaching of it is only 5%, but the difference within countries/jurisdictions is often much higher. In some countries the emphasis given in the curriculum to problem solving is not equalled by a high use of cognitive activation strategies linked to problem solving. Korea, which has mapped problem solving to a comparably high degree in the curriculum (83%), (Figure 45) shows 51% use of cognitive activation strategies for problem solving (higher than the OECD average) and 49% of teachers reporting that they feel well prepared to teach it (around the OECD average). Japan, where the percentage of mapped curriculum items is equally high (83%) shows much lower prevalence of use (25%) and sense of preparedness (20%) among teachers.

Countries/jurisdictions where fewer teachers report a high sense of preparedness, the percentage of teachers using cognitive activation practices linked to problem solving is nonetheless often higher than their sense of preparedness. This is the case in a number of OECD and non-OECD countries. In Iceland and Norway, there is a difference of more than 16 percentage points between the share of teachers reporting they use these practices (53% in both countries) and the share of teachers who feel well prepared to do so (35% and 36%).

Figure 46 **Teachers' preparedness to teach cross-curricular competencies and teachers asking students to choose their own procedures to solve complex tasks**



■ Percentage of teachers who felt "well prepared" or "very well prepared" for the teaching of cross-curricular skills[1]
◆ Percentage of teachers who "always" or "frequently" ask students to decide on their own procedures for solving complex tasks

**Notes**: Percentage of lower secondary teachers who "frequently" or "always" use the practice in their class. Results based on responses of lower secondary teachers.

Information on data for Cyprus: https://oe.cd/cyprus-disclaimer

1. For example, creativity, critical thinking and problem solving.

**Source**: OECD, TALIS 2018 Database, Table I.2.1. and I.4.20, https://doi.org/10.1787/888933933045

StatLink ᐧᔑᒃ https://doi.org/10.1787/888934195568

## Competency development cycle 2030: Anticipation, Action, and Reflection

There is more variation in the way countries/jurisdictions choose to embed the three dimensions of the competency development cycle in their curriculum: on average, 34% (anticipation), 43% (action) and 41% (reflection) (Figure 46).

The averages for all three dimensions are more or less evenly distributed between the minimum and maximum. For anticipation, they range from 3% (Greece) to 62% (Kazakhstan) and for action, from 21% (Northern Ireland [United Kingdom]) to 74% (China). For reflection, 11% (Portugal) is the lowest level mapped in the curriculum, while the highest is 63% (Korea).

### Anticipation

Anticipation has a wide range of inclusion across mapped curricula. Korea (61%) and Kazakhstan (62%) have the highest overall rates of anticipation as part of the mapped curriculum. Greece (3%) and Japan (9%) show the lowest percentages of the mapped curriculum including anticipation. Most countries have moderate levels, around 30 and 40%.

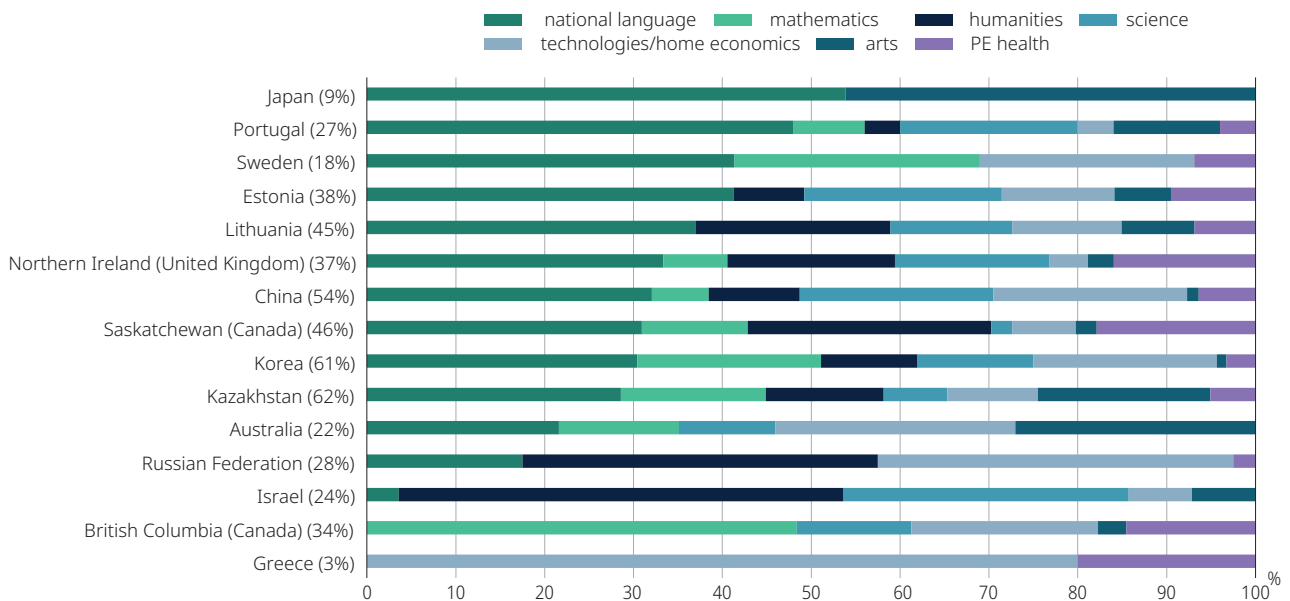Figure 47 **Competency development cycle for 2030 in curricula**
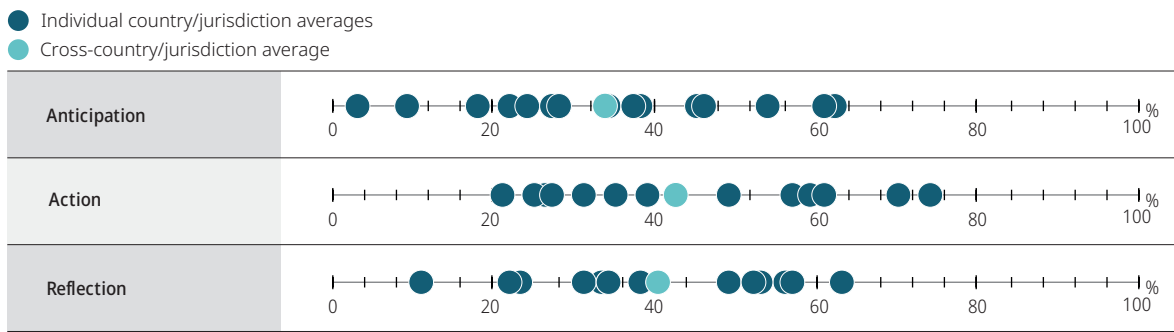


Note: The percentage refers to the total percentage of the mapped curriculum that embeds the competency as a main or a sub-target.
**Source**: Data from the Education 2030 Curriculum Content Mapping exercise.
StatLink https://doi.org/10.1787/888934195587

Figure 48 **Anticipation in curricula**

Distribution of content items in the mapped curricula targeting anticipation (as main or sub-target), by learning area



Note: The percentage next to the name of the country/jurisdiction refers to the total percentage of the mapped curriculum that embeds the competency.
**Source**: Data from the Education 2030 Curriculum Content Mapping exercise.
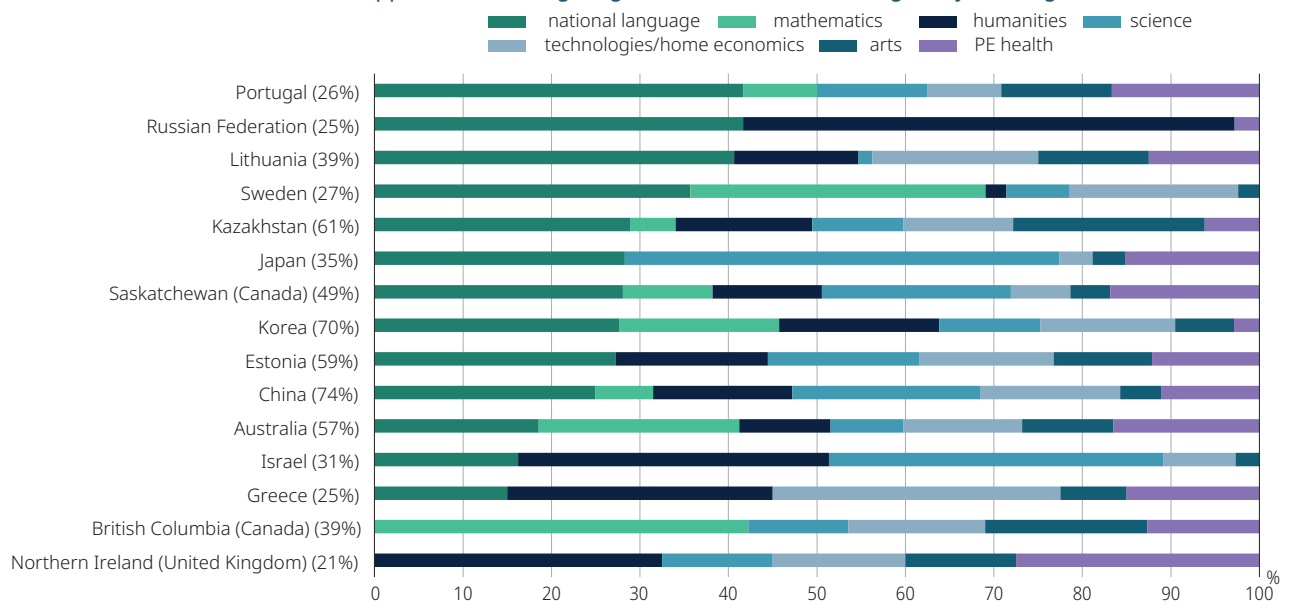StatLink https://doi.org/10.1787/888934195606

Across learning areas, anticipation is most frequently included in national language, technologies/home economics and humanities. In Estonia, Japan, Portugal and Sweden, over 40% of anticipation curriculum items are embedded within national language. Anticipation is least represented in PE health and arts. PE health does not carry any anticipation items in Australia, Israel and Japan, and arts does not carry any anticipation items in Greece, Sweden and the Russian Federation (Figure 48).

### Action

Action has an overall moderate-to-high level of inclusion across national curricula. All countries/jurisdictions include action as a target in over 20% of their mapped curricula. Korea (70%) has the highest rate among OECD countries, and Kazakhstan (61%) and China (74%) have the highest rates among OECD partner countries. Many of the learning domains carry action items. In particular, science and humanities carry many of the items that embed action in mapped curricula. Science carries over 40% of the items that embed action in Japan. National language carries over 40% of the items that embed action in Lithuania, Portugal and the Russian Federation (Figure 49).

Figure 49 **Action in curricula**

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Distribution of content items in the mapped curricula targeting action (as main or sub-target), by learning area

Legend: national language · mathematics · humanities · science · technologies/home economics · arts · PE health



**Note**: The percentage next to the name of the country/jurisdiction refers to the total percentage of the mapped curriculum that embeds the competency.
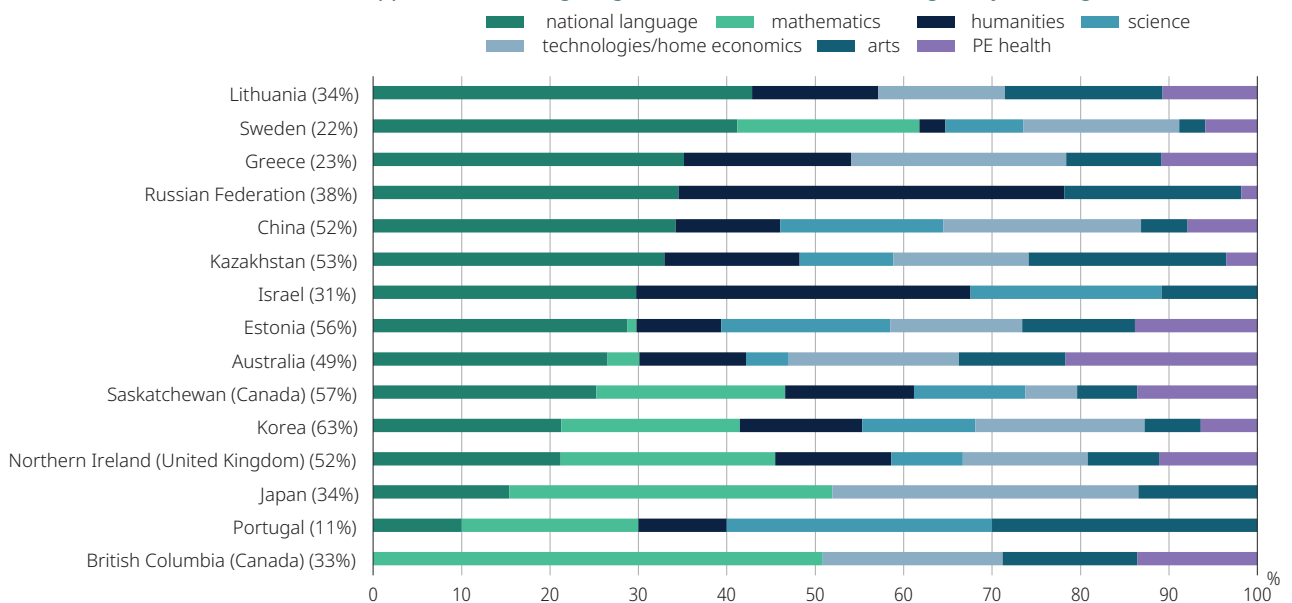**Source**: Data from the Education 2030 Curriculum Content Mapping exercise.
*StatLink* https://doi.org/10.1787/888934195625

## Reflection

Nearly all countries/jurisdictions have moderate to high percentages of items embedding reflection within their mapped curricula. Among OECD countries, Estonia, Korea, Northern Ireland (United Kingdom) and Saskatchewan (Canada) all embed reflection in over 50% of their curriculum, as do partner countries like China and Kazakhstan (Figure 50).

Figure 50 **Reflection  in curricula**

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Distribution of content items in the mapped curricula targeting reflection (as main or sub-target), by learning area

Legend: national language · mathematics · humanities · science · technologies/home economics · arts · PE health



**Note**: The percentage next to the name of the country/jurisdiction refers to the total percentage of the mapped curriculum that embeds the competency.
**Source**: Data from the Education 2030 Curriculum Content Mapping exercise.
*StatLink* https://doi.org/10.1787/888934195644

Curriculum items that embed reflection are frequently distributed across learning areas. British Columbia (Canada) is the only country/jurisdiction where national language does not carry any items embedding reflection. Neither British Columbia (Canada) nor Japan indicate that humanities carries any reflection items. In Lithuania and Sweden, over 40% of reflection items are embedded within national language.

## WHAT KINDS OF FUTURE REFORMS ARE COUNTRIES/JURISDICTIONS PLANNING?

The kinds of reforms countries/jurisdictions are planning to make in the future also have an impact on the decision-making time lag, particularly if they concern multiple and/or complex changes (see *Redesigning curriculum for effective implementation* (OECD, forthcoming) for more details on the planned reform cycles).

More than half (57%) of countries/jurisdictions have spelled out **specific directions for their next reforms** (Table 6). Most of these relate to the general themes and thematic approaches they want to focus on in future reforms. Emerging societal and technological themes, interdisciplinary learning and deep learning, as well as the introduction of more holistic and student-centred approaches are mentioned frequently.

- **Ireland** identifies the following directions for its future reforms: ensuring quality, creativity and innovation, inclusivity, choice and flexibility, relevance and enjoyment, well-being, participation and lifelong learning.

- **Denmark**, on the other hand, plans to foster local autonomy for curriculum development.

**Changes to educational goals** are also envisaged by more than half (51%) of countries/jurisdictions. Some, such as Chile, Estonia, New Zealand and Argentina, are planning to revise their subject-specific education goals, while most others are planning to focus on overall learning goals.

- **New Zealand** intends to formally integrate digital technology into the curriculum and to support young people to develop skills, confidence and interest in digital technologies and lead them to opportunities across the IT sector.

- **Mexico** plans to introduce overall goals that foster fundamental skills and competencies expected to apply inside and outside the classroom: learning to learn, learning to be, learning to co-exist, and learning to do.

- **Ireland's** overall learning goals will be reformed with three general aims: 1) to enable the child to live a full life as a child and to realise his or her potential as a unique individual; 2) to enable the child to develop as a social being through living and co-operating with others and so contribute to the good of society; and 3) to prepare the child for further education and lifelong learning.

Less than half (46%) of the countries/jurisdictions plan to conduct **content renewal**. A majority of these concern a shift to focus on "big ideas" or key concepts as well as shift towards effective pedagogies to teach renewed content:

- **Chile** has reached an agreement that states that curriculum content has to be updated every 6 years, while its structure and architecture will be revised every 12 years, in order to align the curriculum to the changing needs of every period. Chile is planning future changes related to content renewal in the form of the creation and constant updating of methodologies and resources in order to align and foster the curriculum, such as: 1) project-based learning; 2) interactive textbooks; 3) digital public school.

- In **Norway**, content renewal around "big ideas" is used to change sequencing within subject content and favour learning progressions.

- In **Wales (United Kingdom)**, using the Pioneer Schools Network, through a subsidiarity model with practitioners, is at the heart of development of the new curriculum to develop new content.

- In **India**, content renewal is planned to balance specialised knowledge against broad/general knowledge.

**Subject renewal** is envisaged in more than one third (38%) of the countries/jurisdictions, usually following two main directions. Many are creating new subjects to accommodate emerging societal needs, usually linked to technological developments (see "Challenges and strategies" section in (OECD, 2020[6])). In this sense, ICT education, computational thinking and coding, as well as technical and vocational education, are among the most popular subjects countries/jurisdictions plan to introduce.

- In the **Czech Republic, Denmark, Ireland** and **Argentina**, for instance, coding or computational thinking are receiving increasing attention and are planned to be included as new subjects in the next curriculum redesign phase.

- In other countries/jurisdictions, such as **New Zealand** and **Ontario (Canada)**, curriculum flexibility at the local level allows schools to introduce subjects following a dynamic approach to respond to emerging needs (see Curriculum flexibility and autonomy (OECD, Forthcoming[7])).

Table 6 **Planned future curriculum changes**

| Spell out general directions of reforms | | Changes to educational goals | | Changes to instruction time | |
|---|---|---|---|---|---|
| **OECD** | **Partner** | **OECD** | **Partner** | **OECD** | **Partner** |
| Australia | Argentina | Australia | Argentina | Estonia | Argentina |
| British Columbia (Canada) | Costa Rica | Chile | China (People's Republic of) | Hungary | Kazakhstan |
| Chile | Hong Kong (China) | Estonia | India[1] | Ireland | South Africa |
| Czech Republic | Kazakhstan | Hungary | Kazakhstan | Mexico | |
| Denmark | Viet Nam | Ireland | Russian Federation | Norway | |
| Estonia | | Mexico | Singapore | Sweden | |
| Hungary | | New Zealand | South Africa | Turkey | |
| Ireland | | Norway | Viet Nam | | |
| Mexico | | Wales (United Kingdom) | | | |
| Netherlands | | | | | |
| New Zealand | | | | | |
| Norway | | | | | |
| Québec (Canada) | | | | | |
| Scotland (United Kingdom) | | | | | |
| Sweden | | | | | |
| Turkey | | | | | |

| Subject renewal | | Content renewal | | Other changes | |
|---|---|---|---|---|---|
| **OECD** | **Partner** | **OECD** | **Partner** | **OECD** | **Partner** |
| Chile | Argentina | Chile | Argentina | Chile | Hong Kong (China) |
| Denmark | India[1] | Czech Republic | Hong Kong (China) | | Costa Rica |
| Estonia | Kazakhstan | Estonia | Costa Rica | | India[1] |
| Ireland | South Africa | Hungary | India[1] | | Kazakhstan |
| Mexico | Viet Nam | Mexico | Singapore | | Viet Nam |
| New Zealand | | New Zealand | South Africa | | |
| Norway | | Norway | Viet Nam | | |
| Portugal | | Turkey | Kazakhstan | | |
| Wales (United Kingdom) | | Wales (United Kingdom) | | | |

**Note:** Data displayed in this table include only countries/jurisdictions with responses that could be clearly coded.

1. Responses for these countries/jurisdictions were submitted by independent researchers, not governmental administrations.

**Source**: Data from the PQC, item 2.3.1.

Another main direction within subject renewal is the reintegration and restructuring of subjects, usually to address concerns of curriculum overload or to structure subjects following a more holistic approach.

- In **Norway**, subject restructuring is receiving increasing attention among priorities for curriculum redesign with the objective of combining subjects to enable synergies and to address topics following a cross-cutting approach.

More than a quarter (27%) of countries/jurisdictions plan to make changes to **instruction time**. Some (Estonia, Hungary and Ireland) are planning to reallocate instruction time to provide more time for personalised or deep learning. Others (Estonia, Mexico and Norway) intend to increase local flexibility, and Argentina and South Africa are planning to increase instruction time.

**Other planned changes** include the development of a Digital Skills Framework in **Northern Ireland (United Kingdom)**, a more detailed graduation certificate specifying projects in which learners participated in **Portugal**, and reform of the assessment criteria base in **Kazakhstan**. Chile is planning to create and constantly update the methodologies and resources in order to align and foster the curriculum. Some of those projects are: 1) learning based on project methodology, 2) interactive textbooks, 3) digital public school.

------

## Notes

1. The section describes data collected through the OECD Future of Education and Skills 2030 Policy Questionnaire on Curriculum Redesign (PQC) and Curriculum Content Mapping (CCM) exercises on all four dimensions of curriculum overload. This international comparative data can be a starting point for policy makers to inform their efforts in curriculum design and redesign.

2. Table WEB 12. Visions for student outcomes and student profiles (https://doi.org/10.1787/888934195682)

3. Table WEB 13. Policies, declarations and statements articulating education goals (https://doi.org/10.1787/888934195701)

4. Table WEB 12. Visions for student outcomes and student profiles (https://doi.org/10.1787/888934195682)

5. Table WEB 14. Individual laws regulating the curriculum (https://doi.org/10.1787/888934195720)

6. https://www.oecd.org/education/2030-project/contact/National_or_regional_curriculum_frameworks_and_visualisations.pdf

7. https://www.oecd.org/education/2030-project/contact/Technical_report_Curriculum_Analysis_of_the_OECD_Future_of_Education_and_Skills_2030.pdf

## References

**Airaksinen, T., I. Halinen and H. Linturi** (2017), "Futuribles of Learning 2030 – Delphi supports the reform of the core curricula in Finland", *Eur J Futures Res*, Vol. 5/2, http://dx.doi.org/10.1007/s40309-016-0096-y. [3]

**Halinen, I.** (2016), *The Conceptualization of competencies related to sustainable development and sustainable lifestyles*, IBE-UNESCO, International Bureau of Education, https://unesdoc.unesco.org/ark:/48223/pf0000247343. [2]

**OECD** (2020), *Curriculum Overload: A Way Forward,* OECD Publishing, Paris, https://doi.org/10.1787/3081ceca-en. [6]

**OECD** (2019), *OECD Future of Education and Skills 2030 Conceptual Learning Framework. Concept note: OECD Learning Compass 2030*, OECD, Paris, http://www.oecd.org/education/2030-project (accessed on 10 June 2020). [5]

**OECD** (2019), *OECD Learning Compass 2030. A series of Concept Notes,* OECD Publishing, Paris, https://www.oecd.org/education/2030-project/contact/OECD_Learning_Compass_2030_Concept_Note_Series.pdf. [4]

**OECD** (Forthcoming), *Curriculum flexibility and autonomy (title TBC),* OECD Publishing, Paris. [7]

**Pietarinen, J., K. Pyhältö and T. Soini** (2017), "Large-scale curriculum reform in Finland – exploring the interrelation between implementation strategy, the function of the reform, and curriculum coherence", *The Curriculum Journal*, Vol. 28/1, pp. 22-40, http://dx.doi.org/10.1080/09585176.2016.1179205. [1]