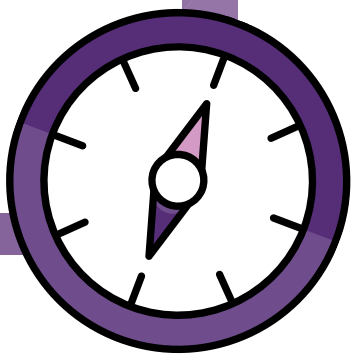
OECD Future of Education and Skills 2030

Conceptual learning framework

Concept note: Transformative Competencies for 2030



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IN BRIEF

TRANSFORMATIVE COMPETENCIES FOR 2030

To meet the challenges of the 21st century, students need to be empowered and feel that they can aspire to help shape a world where well-being and sustainability – for themselves, for others, and for the planet – is achievable. The OECD Learning Compass 2030 has identified three "transformative competencies" that students need in order to contribute to and thrive in our world, and shape a better future.

Creating new value means innovating to shape better lives, such as creating new jobs, businesses and services, and developing new knowledge, insights, ideas, techniques, strategies and solutions, and applying them to problems both old and new. When learners create new value, they question the status quo, collaborate with others and try to think "outside the box".

Reconciling tensions and dilemmas means taking into account the many interconnections and inter-relations between seemingly contradictory or incompatible ideas, logics and positions, and considering the results of actions from both short- and long-term perspectives. Through this process, students acquire a deeper understanding of opposing positions, develop arguments to support their own position, and find practical solutions to dilemmas and conflicts.

Taking responsibility is connected to the ability to reflect upon and evaluate one's own actions in light of one's experience and education, and by considering personal, ethical and societal goals.

Three transformative competencies can help students thrive in our world and shape a better future.

KEY POINTS

- Students need to acquire three transformative competencies to help shape the future we want: creating new value, reconciling tensions and dilemmas, and taking responsibility.
- When students create new value, they ask questions, collaborate with others and try to think "outside the box" in order to find innovative solutions. This blends a sense of purpose with critical thinking and creativity.
- In an interdependent world, students need to be able to balance contradictory or seemingly incompatible logics and demands, and become comfortable with complexity and ambiguity. This requires empathy and respect.
- Students who have the capacity to take responsibility for their actions have a strong moral compass that allows for considered reflection, working with others and respecting the planet.

For the full concept note, click ***here***.

More content at: ***www.oecd.org/education/2030-project***

TRANSFORMATIVE COMPETENCIES

Tom Bentley, Executive Director, Policy RMIT University, Australia

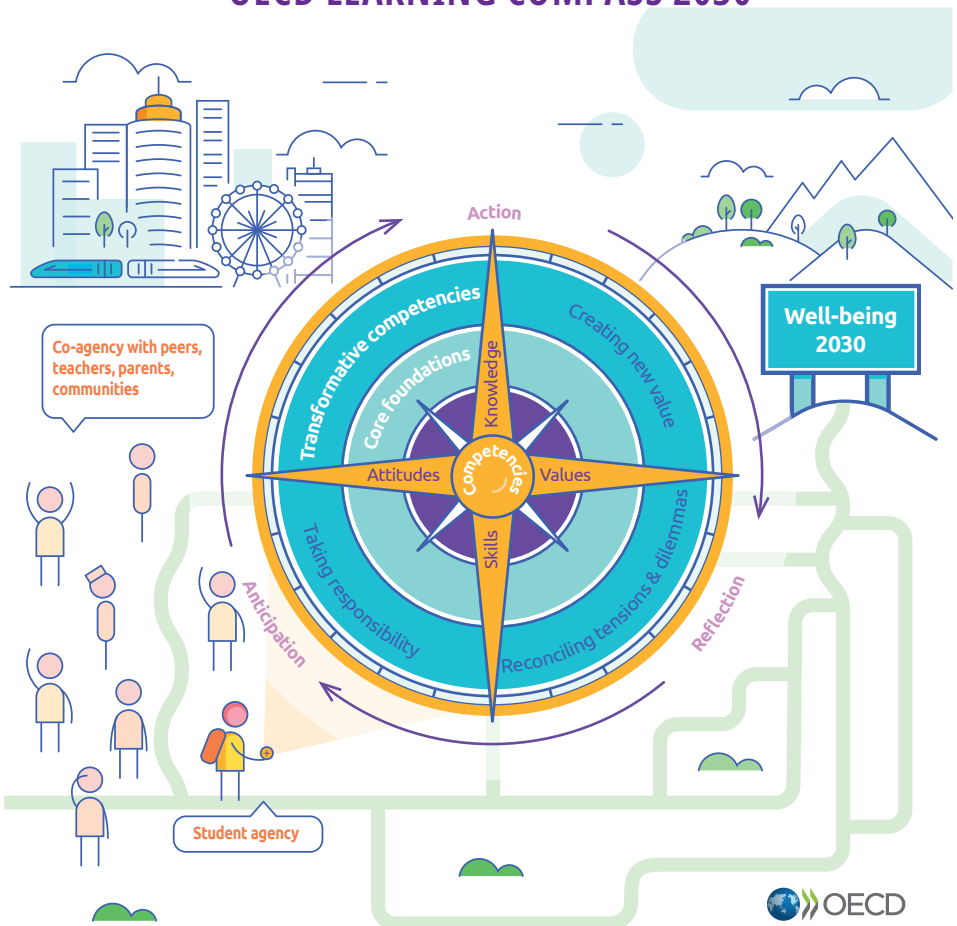
Source: *www.oecd.org/education/2030-project/learning/transformative-competencies*

TAKING RESPONSIBILITY

Taking Responsibility, Japan, Technologies

Source: *www.oecd.org/education/2030-project/learning/transformative-competencies*

OECD LEARNING COMPASS 2030



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Transformative Competencies for 2030

Building on the "OECD Key Competencies" identified through the DeSeCo[1] project, the OECD Learning Compass 2030 defines "transformative competencies" as the types of knowledge, skills, attitudes and values students need to transform society and shape the future for better lives. These have been identified as creating new value, reconciling tensions and dilemmas, and taking responsibility.

These transformative competencies can be used across a wide range of contexts and situations – and they are uniquely human. All three transformative competencies can be seen as higher-level competencies that help learners navigate across a range of different situations and experiences (Bentley, 2017[1]). In that sense, they are highly transferable: these competencies can be used throughout a lifetime.

The ability to cope with uncertainty, develop new attitudes and values, and act productively and meaningfully, even when goals shift, remains, for the moment, a uniquely human skill (Laukonnen, Biddel and Gallagher, 2018[2]). As of this writing, artificial intelligence (AI) cannot compete with humans' capacity to create new value, reconcile tensions or take responsibility.

These competencies are needed more in societies that continue to become more diverse and more interdependent as they develop, and in economies where the impact of new technologies requires new levels of skills and human understanding. Jobs that require creative intelligence are less likely to be automated in the next couple of decades (Berger, T. and Frey, B., 2015[3]). Reconciling tensions and dilemmas requires reading and understanding complex and ambiguous contexts – a skill that, to date, cannot be easily programmed into an algorithm. Similarly AI does not (yet) have a will of its own, nor a sense of ethics, and so cannot make the kinds of ethical decisions responsible citizens do. Students will need to be able to use their ability to consider the moral and ethical implications of their actions to, among many other things, ensure that the great and growing power of artificial intelligence is used to the benefit of all people.

The transformative competencies can be taught and learned in schools by incorporating them into existing curricula and pedagogy. For example, countries can embed the competency of "creating new value" into such subjects as the arts, language, technology, home economics, mathematics and science, using an inter-disciplinary approach. Transformative competencies can also be acquired at home, in the family, and in the community, during interactions with others.

Creating new value: Innovation is at the core of inclusive growth and sustainable development

Creating new value refers to a person's ability to innovate and act entrepreneurially, in a general sense, by taking informed and responsible actions (Grayling, 2017[4]). The OECD Innovation Strategy 2015 articulates the importance of innovation as a driver of economic

growth and social development that addresses urgent global challenges, such as demographic shifts, resource scarcity and climate change. Innovation is needed to create new jobs, new businesses, and new products and services, particularly in light of the accelerated pace of change in the 21st century.

But innovation is about more than creating new jobs, businesses, products and services; it is also about developing new knowledge, insights, ideas, techniques, strategies and solutions, and applying them to problems both old and new. It requires a vision of sustainability and resilience, both for society and for the economy (Grayling, 2017[4]), as the new value created is not just economic, but also social and cultural (Rychen, 2016[5]).

When learners create new value, they ask questions, collaborate with others and try to think "outside the box". In doing so, they can become more prepared and resilient when confronted with uncertainty and change, and can develop a greater sense of purpose and self-worth. Pedagogical approaches that give students the opportunity to apply their learning to real-life scenarios and challenges, such as how to attain food and water security, how to reduce youth unemployment or how to adapt to urbanisation, help students develop new thinking, ideas and insights.

Box 1. Key constructs associated with "creating new value"

In order to create new value, students need to have a **sense of purpose**, **curiosity** and an **open mindset** towards new ideas, perspectives and experiences. Creating new value requires **critical thinking** and **creativity** in finding different approaches to solving problems, and **collaboration** with others to find solutions to complex problems. In evaluating whether their solutions work or not, students may need **agility** in trying out new ideas and may need to be able to **manage risks** associated with these new ideas. Students also need **adaptability** as they change their approaches based on new and emerging insights and findings.

Reconciling tensions and dilemmas: Balancing competing, contradictory or incompatible demands

In a world of interdependency, finding solutions to global challenges requires the ability to handle tensions, dilemmas and trade-offs – for instance, between equity and freedom; autonomy and solidarity; efficiency and democratic processes; ecology and simplistic economic models; diversity and universality; and innovation and continuity. This requires the skill of balancing seemingly contradictory or incompatible demands.

Understanding the needs and interests of others is essential to securing one's own well-being, and that of families and communities, over time. Developing the capacity to understand and work alongside the needs, interests and perspectives of others is therefore essential. The challenge is to reconcile multiple and often conflicting ideas or positions, and recognise that there may be more than one solution or method to finding a solution. For example, the concept of sustainable development is one possible answer to the tension among economic growth, environmental stewardship and social cohesion, as it recognises the complex and dynamic interplay among them instead of treating them as separate and unrelated, if not mutually exclusive, issues (Rychen, 2016[5]).

Striking a balance between competing demands will rarely lead to an either/or choice or even a single solution. To thrive in the future, learners will have to be able to take into

account the many interconnections and inter-relations between seemingly contradictory or incompatible ideas, logics and positions, and consider the result of their actions from both short- and long-term perspectives. The competency required to understand a more complex picture of the world is the "ability to manage diversity and dissonance in a creative and coping way" (Haste, 2001[6]). By holding conflicting ideas in tension, learners can come up with new ideas to test. Through this process they can acquire a deeper understanding of opposing positions, develop arguments to support their own position, and find solutions to dilemmas and conflicts (Eberly Center, 2016[8]).

For example, a systems-thinking approach, whereby students develop an understanding of how complex systems behave by studying real-life examples, such as the water-energy-food nexus or the circular economy, can help students see various opportunities for making change within a system. This type of work will help learners develop their ability to recognise multiple solutions and work successfully with ambiguity (Senge, 2015[8]).

Box 2. Key constructs associated with "reconciling tensions and dilemmas"

To reconcile tensions and dilemmas, students need first to have **cognitive flexibility and perspective-taking skills** so that they can see an issue from different points of view and understand how these differing views result in tensions and dilemmas. Students also need to show both **empathy** and **respect** towards others who hold views different from their own. They may also need both **creativity** and **problem-solving skills** to devise new and different solutions to seemingly intractable problems, particularly skills in **conflict resolution**. Reconciling tensions and dilemmas can involve making complex and sometimes difficult decisions; therefore students need to develop a sense of **resilience**, **tolerance for complexity and ambiguity**, and a sense of **responsibility** towards others.

Taking responsibility: Considering the ethics of action

Dealing with novelty, change, diversity, ambiguity and uncertainty, and meeting challenges responsibly assumes that individuals can think for themselves and work with others (OECD, 2018[8]). Responsibility is at the core of a mature sense of agency (see concept note on Student Agency), as it implies an understanding that actions have consequences and that people have the power to affect others (Leadbeater, 2017[10]). Taking responsibility means that a person can reflect upon and evaluate his or her actions in light of his or her experience, personal and societal goals, what he or she has been taught, and what is right and wrong (Canto-Sperber and Dupuy, 2001[10]; Haste, 2001[11]).

Advances in developmental neuroscience have demonstrated the ability of the brain to change and develop over a lifetime, with pronounced bursts during adolescence. Brain regions and systems that are especially plastic are those implicated in the development of self-regulation, which includes the ability to plan ahead, consider consequences of decisions, weigh risk, and control impulses and emotions (Steinberg, 2017[13]). Adolescence can now be seen as a time not just of vulnerability but of opportunity for developing a sense of responsibility.

Acting responsibly implies considered reflection and asking questions related to norms, values, meanings and limits, such as: What should I do? Was I right to do that? Where are the limits? Knowing the consequences of what I did, should I have done it? By critically

analysing and evaluating alternatives through an ethical lens, students become morally and intellectually mature (Nussbaum, 1997[12]).

Box 3. Key constructs associated with "taking responsibility"

Taking responsibility requires having a strong moral compass, **locus of control** and sense of **integrity**, whereby decisions are made based on whether the resulting action will be for the broader benefit of others. **Compassion** and **respect** for others are also important for this competency. **Critical thinking** can be used as one reflects on one's actions and the actions of others. For this competency, having a sense of **self-awareness**, **self-regulation** and **reflective thinking** is of particular importance. It is also important to build **trust** before taking responsibility. When students are trusted by their peers, teachers and parents, they are more likely to take responsibility for their actions.

A powerful influence on the capacity to act responsibly comes through the opportunity to reflect on and learn from everyday situations, including learning from the example of others (Bentley, 2017[1]). Volunteer work, service learning or working on community-based problem-solving projects, whereby students learn through taking part in volunteer activities or tackling real-life problems in their communities, offer good opportunities for students to learn about taking responsibility (Bentley, 2017[1]).

Box 4. Students learn to "take responsibility" through service learning

Singing with Friends is a service learning activity in which 16-17 year-old students from the United World College of South East Asia (UWCSEA) meet weekly with ten young adults from the Down Syndrome Association of Singapore (DSA). Since 2014, Singing with Friends has harnessed the power of music to bring people together and share in the joy of song. Each week, the students visit children with Down Syndrome, play games and choose a song to learn together, which they practice, with the UWCSEA students taking responsibility for leading the activity. The mutually beneficial programme seeks to strengthen the confidence, musical abilities and communication skills of the children with Down Syndrome while simultaneously teaching the UWC students the importance of listening to and learning from the experiences of others. The group has performed at several community events, including recently in front of Singapore's Minister for Culture, Community and Youth.

When students join the service activity, they will have had very little contact with people who are differently abled and will probably only have read about Down through online research. Through Singing with Friends, they are able to interact with children with Down Syndrome and develop relationships by engaging in a common activity. Inevitably, their perspectives on Down Syndrome change. For the students, the experience embeds a sense of responsibility for improving the lives of others who are differently abled. As one participating student said, "By working with them, I am able to come back home and tell my family of the things I've learnt and how it is that we can help stop those condescending stereotypes and ideas of Down Syndrome."

Box 5. Building "transformative competencies" through experiential learning

Rethink Secondary Learning - Thames Valley District School Board, Ontario, Canada

The Thames Valley District School Board's dedication to preparing students for the 21st century is manifested in its Rethink Secondary Learning project. Through consultation with stakeholders, and based on research and innovative practices, changes to secondary school programming and delivery include fostering engagement and autonomy over compliance and reliance; differentiating for inclusion over organising for efficiency; and providing inspiring integrated, interdisciplinary learning experiences over single-subject approaches (p. 7, https://goo.gl/7BchsM).

Through a hands-on, immersive pedagogy, students have the opportunity to engage in experiential learning that reflects their interests, meets curricular expectations in a more meaningful and relevant manner, and allows students to transfer their knowledge and skills to real-world contexts. The Greenhouse Academy is a 60,000-square foot learning environment that is run by students. It offers valuable first-hand experience in using **transformative competencies** as students manage a greenhouse business. Students **reconcile dilemmas** as they consider what plants to grow, shade requirements, the amount of soil and size of pots needed, layout considerations and budget. Students assume further responsibility as they reach out to local industries, including irrigation companies, to ensure that the plants are adequately watered, and to conservation authorities and vendors who can sell what they produce. By **taking responsibility** for the various aspects of the business, with the guidance and mentoring of teachers and specialised staff, students develop agency and co-agency. They **create new value** for themselves, for the business and for the communities they serve as they develop their familiarity with the challenges and opportunities of running a business.

Box 6. Embedding transformative competencies in the curriculum

Visual and written narratives shared with the OECD Education 2030 project by school networks around the world illustrate how transformative competencies are embedded in the curriculum. Three examples are described below. The video narratives are available at www.oecd.org/education/2030-project/teaching-and-learning/learning/well-being.

Reconciling tensions and dilemmas

A visual narrative from the Australian Science and Mathematics School (Adelaide, South Australia) shows a lesson that explores pseudoscientific claims and has students investigate these claims to determine what evidence would be needed to consider the claims to be true. This lesson follows a mathematics-focussed module on proofs and conjectures, with a focus on circle and triangle theorems. The idea of what is 'truth' and what evidence is required to claim that something is true is investigated. Students then work in groups to justify their claim. This contributes to developing the students' ability to reconcile tensions and dilemmas in a real world context.

The Futaba Future High School (Hirono Town, Fukushima Prefecture) was opened in April 2015, to accommodate students who were displaced by the nuclear power plant disaster in 2011. The school fully shares the missions of the Futaba region that focus on rebuilding communities, innovating renewable energy sources and exploring new ways of life in the region. One course offered at the school, "Future-Creating Education" incorporates project based learning (PBL) for grade 11 and 12 students. In this course, students choose one topic that links to challenges in Fukushima (e.g. community rebuild, renewable energy sources, health and welfare). Students work in groups over two years to collect information, create an action plan, reflect and present their ideas to real world stakeholders such as government officials. Students and teachers work together to produce the final presentation. Ultimately, this course helps students to understand the complexity of real-world dilemmas and to reconcile tensions to lead to a workable solution.

Taking Responsibility

In a Home Economics lesson sequence from the Tokyo Gakugei University International Secondary School (Tokyo, Japan) students develop an understanding of how to choose and use washing detergent responsibly. They complete activities to determine the environmental impact of detergent and the individual economic impact of purchasing and using detergents. They are asked to create packaging that would inform a responsible consumer. In this way, students are able to understand the influence of their own behaviours on society and take responsible action.

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Note

[1] In late 1997, the OECD initiated the DeSeCo (Definition and Selection of Competencies) Project with the aim of providing a sound conceptual framework to inform the identification of key competencies and strengthen international surveys measuring the competence level of young people and adults. This project brought together experts in a wide range of disciplines to work with stakeholders and policy analysts to produce a policy-relevant framework. Individual OECD countries contributed their own views to inform the process. The project acknowledged diversity in values and priorities across countries and cultures, yet also identified universal challenges of the global economy and culture, as well as common values that inform the selection of the most important competencies (www.oecd.org/education/skills-beyond-school/definitionandselectionofcompetenciesdeseco.htm).