



# SKILLS FOR A CHANGING WORLD

2030 challenge for education

Esther Care

“Teaching and Learning in the E2030 Agenda” August 2016

UNESCO Regional Bureau for Education in Latin America and the Caribbean, and the Center for Improvement, Experimentation and Pedagogical Research of the Ministry of Education of Chile, at the Economic Commission for Latin America and the Caribbean, ECLAC



- **Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**
  - 4.1 ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes
  - 4.4 substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
  - 4.6 ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy
  - 4.7 ensure that all learners acquire the knowledge and skills needed to promote sustainable development ...



# Implications of SDG 4 for identification of indicators

Goals	Indicators
4.1 .. education leading to relevant and effective learning outcomes	.. proficiency in reading and mathematics
4.4 .. relevant skills, including technical and vocational skills, for employment, ..and entrepreneurship	.. information and communications technology skills by type of skill
4.6 .. literacy and numeracy	.. functional (a) literacy and (b) numeracy skills
4.7 .. knowledge and skills needed to promote sustainable development	.. (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights

UNESCO, 47<sup>th</sup> Session, Statistics Commission, 8-11 March 2016

# Global perspectives

- Learning to know
- Learning to do
- Learning to be
- Learning to live together



Delors et al. 1996

United Nations  
Educational, Scientific and  
Cultural Organization

## WAYS OF THINKING

- Creativity and innovation
- Critical thinking, problem-solving, decision-making
- Learning to learn/metacognition (knowledge about cognitive processes)

## TOOLS FOR WORKING

- Information literacy
- Information and communication technology (ICT) literacy

## WAYS OF WORKING

- Communication
- Collaboration (teamwork)

## WAYS OF LIVING IN THE WORLD

- Citizenship – local and global
- Life and career
- Personal and social responsibility – including cultural awareness and competence

Binkley et al. 2012

# Global perspectives



- Use language, symbols and texts interactively
- Use knowledge and information interactively
- Use technology interactively

Use tools interactively

- Relate well to others
- Co-operate, work in teams
- Manage and resolve conflicts

Act autonomously

Interact in heterogeneous groups

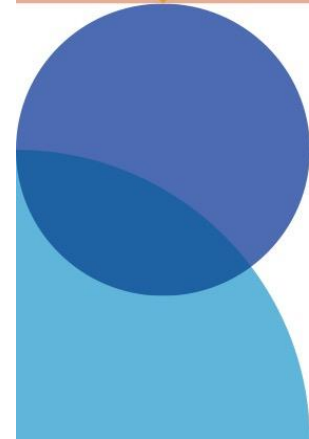
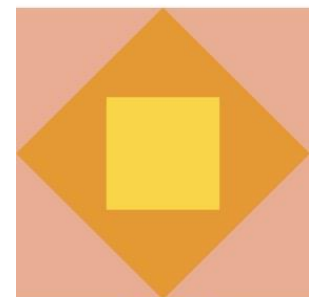
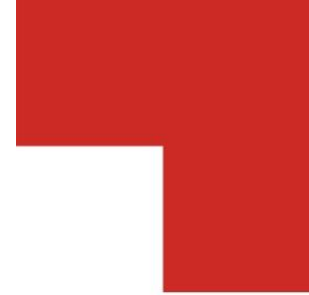
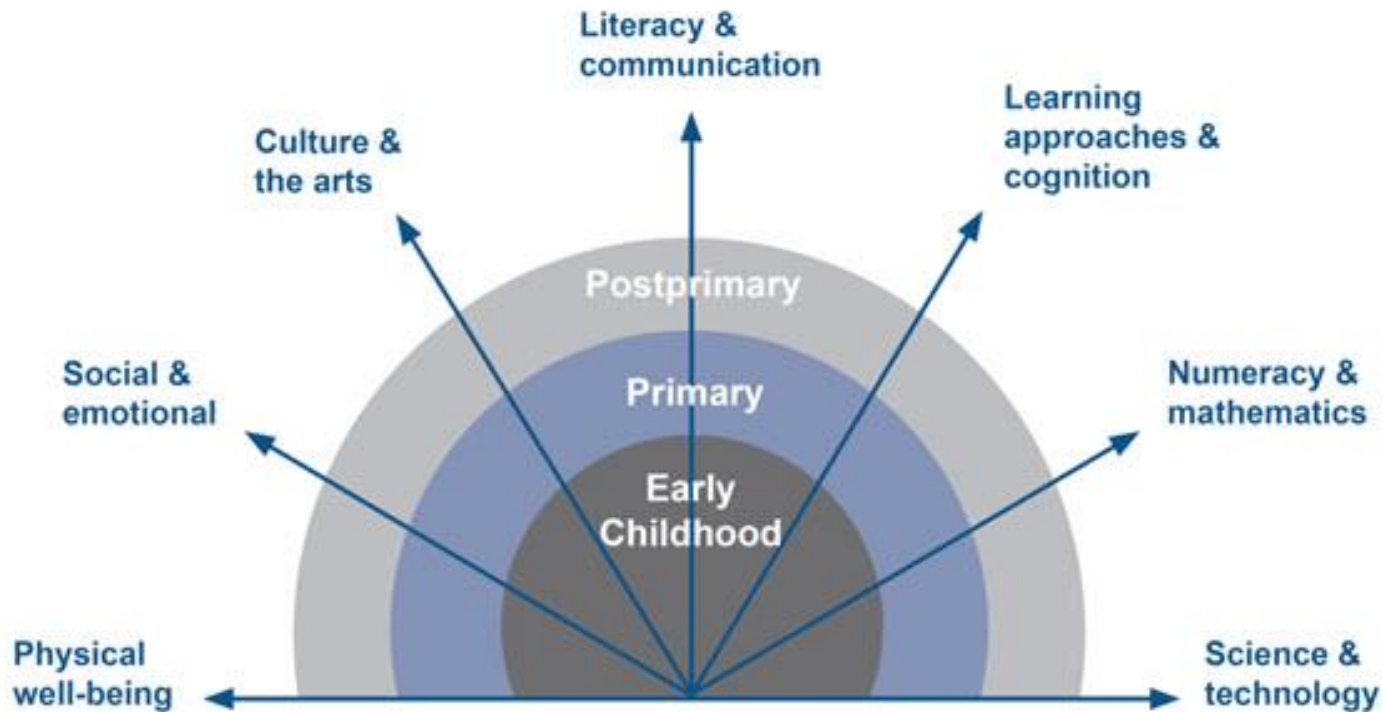
- Act within the big picture
- Form and conduct life plans Defend and assert rights, interests, limits and needs



ATC21S	UNESCO	OECD	P21	European Commission
<b>Ways of thinking</b>	<b>Learning to know</b>		<b>Learning and innovation</b>	<b>Learning to learn</b>
creativity and innovation critical thinking, problem solving, decision making learning to learn, metacognition			creativity critical thinking problem solving	
<b>Ways of working</b>	<b>Learning to do</b>	<b>Interact in heterogeneous groups</b>		
communication collaboration		relate well to others co-operate, work in teams manage and resolve conflicts	communication collaboration	communication in mother tongue and foreign languages
<b>Tools for working</b>	<b>Learning to do</b>	<b>Use tools interactively</b>	<b>Information media and technology</b>	
information literacy ICT literacy		use language, symbols and texts interactively use knowledge and information interactively use technology interactively	information literacy media literacy ICT literacy	mathematical, science and technology competences digital competence
<b>Living in the world</b>	<b>Learning to be</b> <b>Learning to live together</b>	<b>Act autonomously</b>	<b>Life and career</b>	
citizenship - local and global life and career personal and social responsibility - including cultural awareness and competence		act within the big picture form and conduct life plans and personal projects defend and assert rights, interests, limits and needs	flexibility and adaptability initiative and self-direction social and cross-cultural skills productivity and accountability leadership and responsibility	social and civic competences initiative and entrepreneurship cultural awareness and expression
Binkley et al.	Delors et al.	OECD 2005	www.p21.org	Gordon et al.

# Regional perspectives

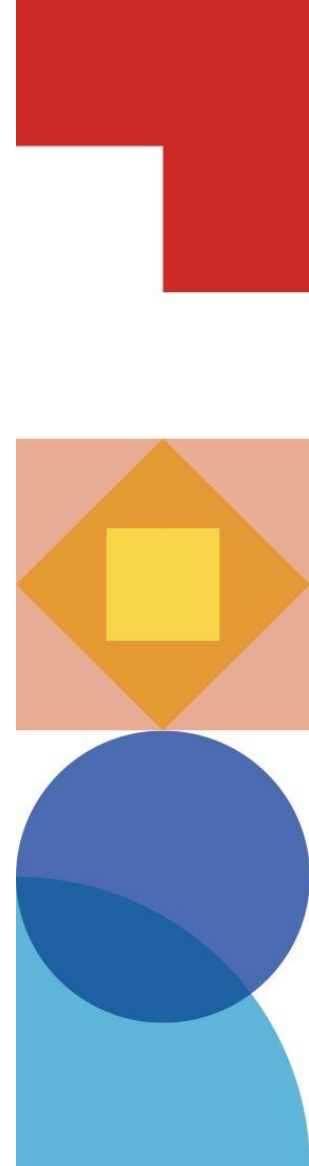
## Learning Metrics Task Force



# Regional perspectives

## NEQMAP's Transversal Competencies

Domains	Examples of key skills, competencies, values and attitudes
1. Critical and innovative thinking	Creativity, entrepreneurship, resourcefulness, application skills, reflective thinking, reasoned decision-making
2. Interpersonal skills	Communication skills, organizational skills, teamwork, collaboration, sociability, collegiality, empathy, compassion
3. Intrapersonal skills	Self-discipline, ability to learn independently, flexibility and adaptability, self-awareness, perseverance, self-motivation, compassion, integrity, self-respect
4. Global citizenship	Awareness, tolerance, openness, responsibility, respect for diversity, ethical understanding, intercultural understanding, democratic participation, conflict resolution, respect for the environment, national identity, sense of belonging
5. Media and information literacy	Ability to obtain and analyze information through information and communication technology (ICT), ability to critically evaluate information and media content, ethical use of ICT
6. Others	Skills and competencies as defined by countries/economies





# Individual country perspectives

<b>Vision/Mission</b>	The Australian Curriculum is designed to develop successful learners, confident and creative individuals, and active and informed citizens
<b>Skills Identified</b>	"general capabilities": literacy, numeracy, ICT, critical and creative thinking, personal and social capability, ethical understanding, intercultural understanding
<b>Skills in curriculum</b>	progression of learning from Foundation - Year 10 .. the general capabilities are developed and applied, where relevant, through the learning areas (curriculum). An icon-tagging system in the online curriculum shows where this can be done.
<b>Skills development described</b>	Developmental progressions for each skill  <a href="http://www.australiancurriculum.edu.au/overview/structure">www.australiancurriculum.edu.au/overview/structure</a>

DATA VISUALIZATION

# Visualizing : Breadth of Skills Around the World



DATA VISUALIZATION

# Visualizing : Breadth of Skills Around the World



Mission statement



Skills identified



Skills in curriculum

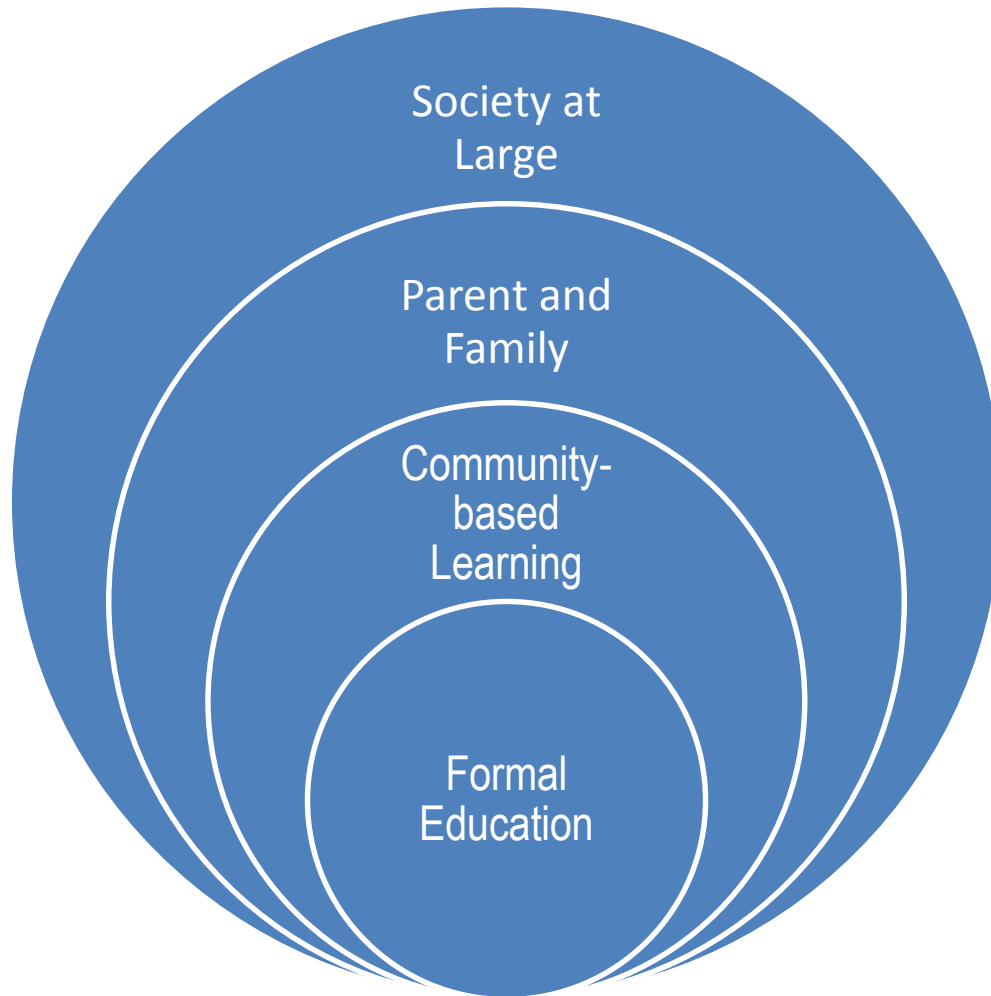


Skills development described

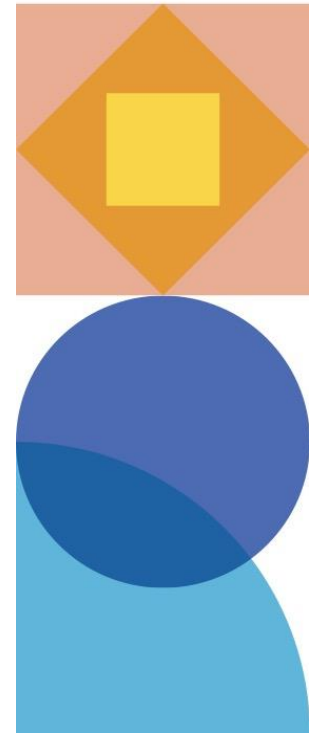
Do you have information that's missing from the map?  
Join us in helping show that a breadth of skills is a global goal.

CONTRIBUTE NOW

# Learning ecosystem

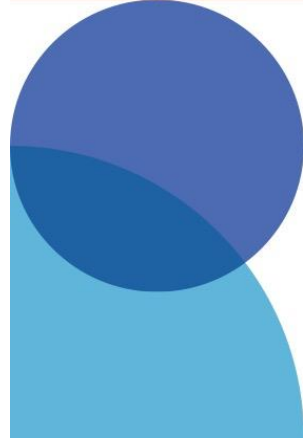
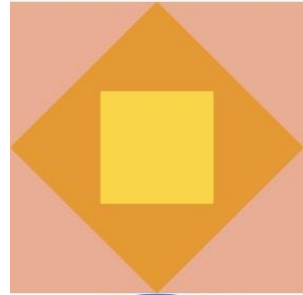


Opportunity  
Structure



# Shift in content and method

- What
  - Content, leading to knowledge
  - Literacy and numeracy
  - Other enabling skills
- How
  - Traditional pedagogies with emphasis on receptive methods
  - Interactive methods
  - Role and skills modelling





# Breadth of skills

## Common Terms

- General capabilities
- 21st century skills
- Skills for living
- Holistic development
- Etc

## Typical Examples

- Critical thinking
- Communication
- Problem solving
- Information literacy
- Collaboration
- Information literacy



# Complex skillsets and characteristics

## Collaborative problem solving

- Participation
- Communication
- Social regulation (negotiation, perspective taking, etc.)
- Task regulation (identifying the problem, etc.)
- Knowledge building

Care & Griffin 2014

## Global citizenship

- Knowledge (global issues)
- Skills (communicate in more than one language, across cultures; perspective-taking; responsively adjust own behaviour; analyse; think critically)
- Attitudes (belief; emotion; evaluation; behavioural tendency – openness, respect, values, responsibility)

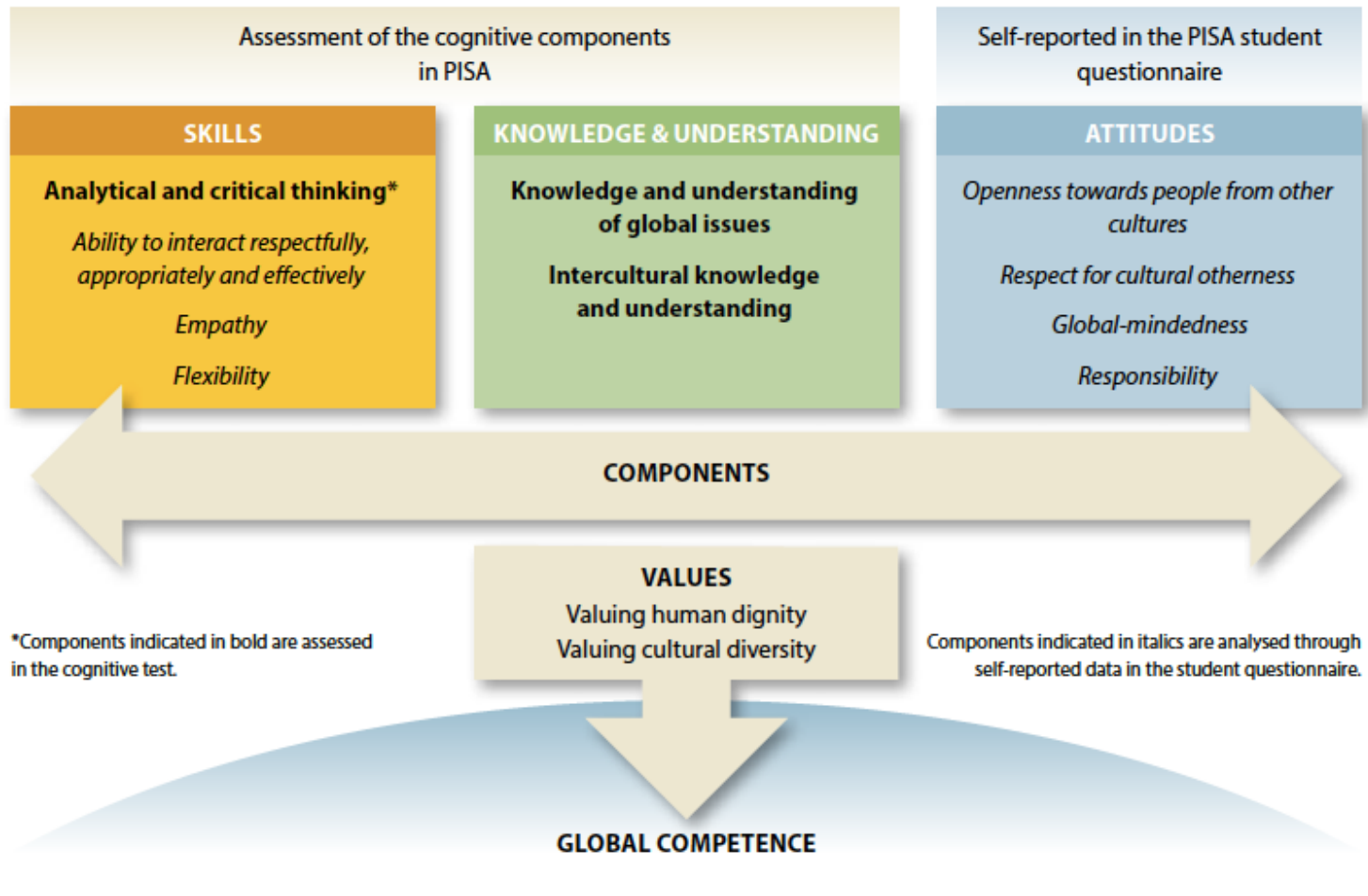
OECD 2016

# Global Competence

OECD PISA (2016)



Figure 1. The dimensions of the proposed assessment of Global Competence







Focused in early  
childhood



The schoolyears

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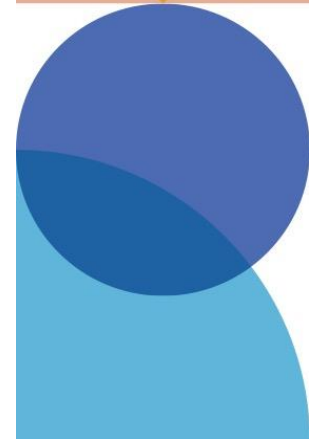
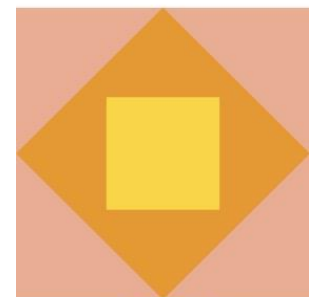
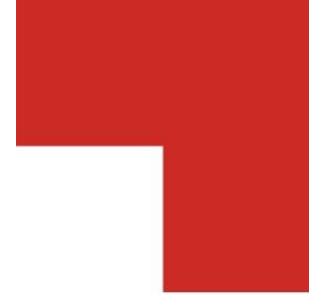
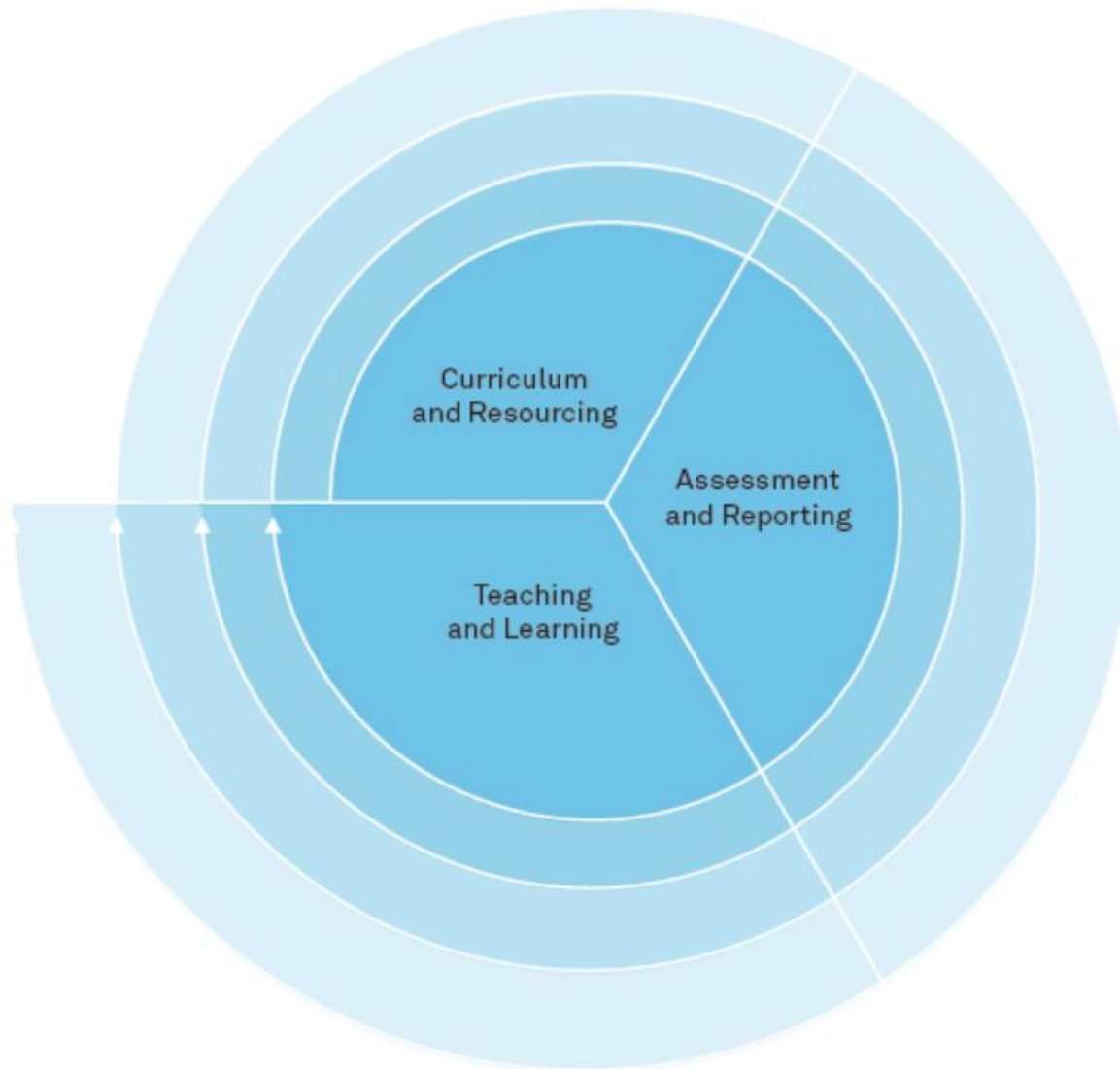


Value in early adulthood  
and the workplace



# The education system

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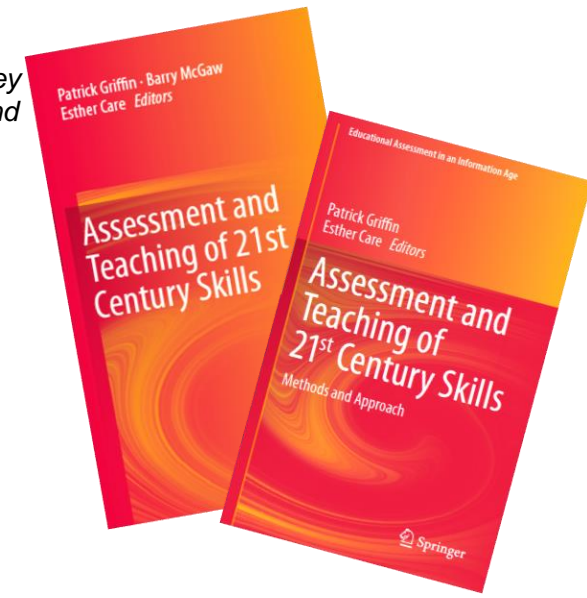
# Perspectives and stakeholders

*“Students graduating from the Basic Education System will have experienced a wide range of learning opportunities that include development of skills necessary to navigate the 21<sup>st</sup> century world of work, and development of capabilities that enable them to act as responsible citizens.”*

- Implications
  - Minister for Education
  - Directors of Curriculum, Instruction and Assessment
    - Products and Purchasing
  - Teacher education institutes
  - School principal
  - Teacher
  - Student
  - Parent

# References and resources

- Binkley, M., Erstad, O., Herman, J., Raizen, S., Ripley, M., Miller-Ricci, M., & Rumble, M. (2012). Defining Twenty-First Century Skills. In P. Griffin, B. McGaw, & E. Care (Eds.), *Assessment and teaching of 21<sup>st</sup> century skills* (pp. 17-66). Dordrecht: Springer.
- Care, E., Scoular, C., & Griffin, P. (2016). Assessment of collaborative problem solving in education environments. *Applied Measurement in Education*. DOI: 10.1080/08957347.2016.1209204.
- Care, E., & Griffin, P. (in press). Collaborative Problem Solving Processes. In B. Csapo, J. Funke, & A. Schleicher (Eds.), *On The Nature of Problem Solving*. Brussels: OECD.
- Care, E., & Griffin, P. (2014). An Approach to Assessment of Collaborative Problem Solving. Special Issue: Assessment in Computer Supported Collaborative Learning. *Research and Practice in Technology Enhanced Learning*, 9(3), 367-388. [http://www.apsce.net/rptel\\_papers.php?id=1020](http://www.apsce.net/rptel_papers.php?id=1020)
- Delors, J., Al Mufti, I., Amagai, I, A., Carneiro, R., Chung, F., Geremek, B., . . . Nanzhao, Z. (1996). *Learning: The Treasure Within*. Paris: UNESCO.
- Griffin, P., & Care, E. (Eds.). (2015). *Assessment and Teaching of 21st Century Skills: Methods and Approach*. Dordrecht: Springer.
- Griffin, P., McGaw, B., & Care, E. (Eds.). (2012). *Assessment and Teaching of 21st Century Skills*. Dordrecht: Springer.
- Gordon, J., Halasz, G., Krawczyk, M., Leney, T., Michel, A., Pepper, D., . . . Wisniewski, J. (2009). *Key Competences in Europe: Opening Doors for Lifelong Learners across the School Curriculum and Teacher Education*. CASE Network Report No. 87. Warsaw: Center for Social and Economic Research.
- Learning Metrics Task Force (2013). *Toward Universal Learning: What Every Child Should Learn*. UNESCO Institute of Statistics and Brookings Institution: Washington DC. <https://www.brookings.edu/research/toward-universal-learning-what-every-child-should-learn/>
- UNESCO (2013). *Transversal competencies in education policy and practice: Regional Synthesis Report*. Asia-Pacific Education Research Institutes Network (ERI-NET). Paris & Bangkok: UNESCO.
- UNESCO (2016). *2014 Regional Study on Transversal Competencies in Education Policy and Practice (Phase II)*. Asia-Pacific Education Research Institutes Network (ERI-NET). Paris & Bangkok: UNESCO.
- OECD (2016). *Global Competency for an Inclusive World*. Paris: OECD.





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