

WHITE PAPER TRANSVERSAL COMPETENCIES ESSENTIAL FOR FUTURE PROOFING THE WORKFORCE

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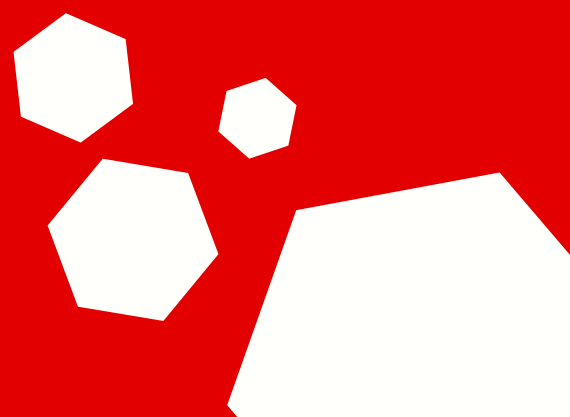
Transversal Competencies essential for future proofing the workforce
White Paper
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Executive Summary

Highlighting the global recognition of the critical role played by specific transversal competencies for effective participation in 21st century work and life, this White Paper is a call to action, evidencing the pressing need for focussed attention, by organisations and individuals, on continuous learning and development in these core competencies.

The urgent need to focus on transversal competencies is vividly apparent in a world where organisations, workforces and individuals are continuously subject to unprecedented complex change: rapid and radical technological advancements, the transformational forces and challenges of globalisation, environmental sustainability, demographic shifts and migration, and political uncertainty. We are required to operate with clarity, accountability and good judgement, and make difficult decisions, despite the vortex of uncertainty, ambiguity and volatility surrounding us. For organisations, workforces and citizens, learning to adapt to these momentous changes, which are coinciding to create an unprecedented impact on humanity (e.g. globalisation and artificial intelligence), represents a significant challenge, but is essential if they are to avoid becoming marginalised.

To survive and to thrive in this competitive, hyper-connected, technology-driven global economy, organisations, workers and citizens need to develop and deploy a core set of transversal competencies as the cornerstone for all their endeavours. **These competencies, such as collaborative problem-solving, and cultural awareness and expression, are the currency that will enable them to make sense of the complex changes and to participate as change agents and innovators, rather than merely as passengers.**

Even more importantly, transversal competencies will equip organisations, workers and citizens to control their own destinies, rather than be controlled by external forces.

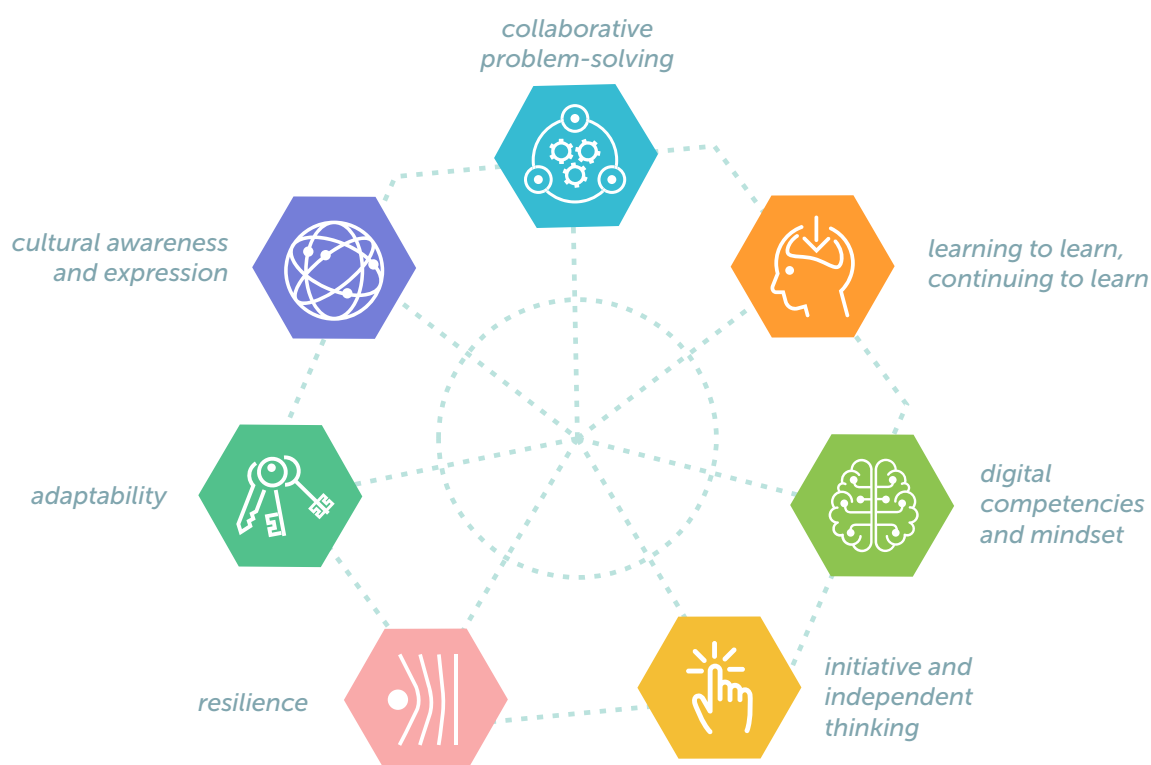
This Paper therefore poses the question “Which transversal and core competencies, not typically provided in formal education, does the 21st century citizen need to adapt and thrive in work and in life, and why?”

The White Paper proposes some answers to the above question, extrapolated from an anal-

ysis and synthesis of key and definitive policy sources from the major International Organisations (IOs), such as the World Economic Forum, European Commission, UNESCO and the OECD. As these high-profile documentary sources themselves are the result of extensive international research and the input of wide ranges of experts, they can be considered authoritative. The objective therefore was to identify the overlaps and common points between them, and thereby derive an implicit consensus on which are the most important transversal competencies globally, how they relate both to each other and to other types of skills (cognitive, technical) and the gaps in learning and development provision this reveals.

The documentary analysis of a range of high-profile international and transnational sources from International Organisations reveals a broad emerging consensus on a common core of 10 transversal skills: *digital competencies, problem-solving, initiative, learning to learn, cultural awareness, resilience, social intelligence, creativity, critical thinking, adaptability.*

This paper focuses on 7 of these core transversal skills: **collaborative problem-solving; learning to learn, continuing to learn; digital competencies and mindset; initiative and independent thinking; resilience; adaptability; cultural awareness and expression.**



The selection of 7 does not imply that the remaining three are less important, but that the remaining three are often involved when the other seven are deployed; for example, collaborative problem-solving requires critical thinking, social intelligence and creativity, as do digital competencies; cultural awareness and expression requires social intelligence; learning to learn, continuing to learn requires critical thinking.

There is one additional transversal competency, and character quality, which business leaders have often cited as critically important¹: *empathy*. The Harvard Business Review even publishes an Empathy Index². Empathy is an element of emotional intelligence, of social intelligence and of learning to learn. It's exclusion among the 7 competencies examined in this paper does not imply it is any less important – on the contrary – but rather that it can be considered among the essential *values/ethics* in work and in life, together with others such as integrity, ownership (i.e. sense of responsibility), respect and conscientiousness, which are not in scope for this paper, but are equally as important as the transversal competencies, in any learner, citizen or worker. While the critical importance of emotional intelligence and empathy in work and life is widely recognised, an analysis of any global consensus around specific values and ethics would require a separate, more complex study.

The White Paper illustrates the approaches of key International Organisations and the findings of international studies in terms of the relative importance of these transversal competencies. It highlights the key characteristics of each of the competencies, and the implications for organisations, workforces and citizens.

The paper also proposes a conceptual skills framework, since these global competencies are the essential foundation for the successful deployment of applied capabilities and cognitive skills.

Some ways in which the development of transversal competencies could be supported and advanced in citizens of the 21st century are also proposed.

This purpose of the document is to equip organisations, leaders and managers with knowledge and awareness of the core transversal competencies that are critical for both individuals and organisations for successfully navigating the complex changes and opportunities in the digital age, now and in the foreseeable future. Having read the document, readers will be able to identify the key transversal competencies, have a deeper understanding of what they entail, and a sharper awareness of why they are essential, and how they underpin other skills and capabilities. They will also gain some insight into how to develop and integrate them with existing training and education, and hopefully, the motivation to be inspired to do so!

¹ <https://www.theguardian.com/sustainable-business/humanizing-business-comedy-central-coca-cola>

² <https://hbr.org/2015/11/2015-empathy-index>



Context and Key Drivers

Transversal competencies have become more vital than ever in the hyper-connected “knowledge society”, driven by globalisation, digital technology and extremely competitive economic forces.

Living in an increasingly connected world, as organisations and as individuals, means becoming aware of and subject to comparisons, correlations, influences, opportunities and risks which previously were not visible, perceptible or so well understood, or by so many.

The pressures on organisations and their workforces to survive, adapt and thrive within this dynamic, growing web of complex change is intense, since they will simply get left behind if they do not. Survival means deploying the core competencies combined with specialist knowledge, and knowing how to convert them to value in response to needs in the changing marketplace. Thriving means mastering transversal competencies, knowledge and specialist know-how and recombining them for the application of distinctive capabilities, answering existing and unforeseen market needs, creating new value and shaping the changing marketplace.

Living in an increasingly connected and machine-built world creates its own pressures in terms of the awareness of potential exclusion – including exclusion from sectors, markets and jobs due to artificial intelligence - and the inequity of information or resource distribution and ownership, and of their availability and usage. This combination of heightened awareness and new opportunities brings people into conflict internationally (e.g. immigration and jobs) and into constructive collaboration (e.g. international treaties to reverse environmental damage). Effective transversal competencies, integrated into lifelong learning processes and systems, are critical for enabling collaboration and co-existence rather than conflict, and inclusion rather than exclusion, both for organisations and for individuals.

A 2017 study by Oxford University, NESTA and Pearson predicts that in 2030 social skills will become more highly valued as artificial intelligence and machines perform a wider range of tasks. The researchers conclude the future will be about humans and machines together rather than humans versus machines. This will require a focussed effort to develop transversal competencies.

In a Financial Times article, Jo Owen calls for an urgent focus on human skills and soft skills in the age of digital and artificial intelligence:

“ *Success depends on equipping the next generation with human skills that even AI cannot emulate: creativity, innovation, resilience, dealing with conflict, ambiguity and uncertainty. We are not ready for this. We have not even started to get ready*

Jo Owen, Financial Times, 12/12/2017¹

”

Such transversal competencies are not generally a standard part of formal education, whether at school age or university age, so individuals need to develop, hone and evidence them in other contexts. However, it may well be that individuals develop these competencies very effectively through the challenges and opportunities they face in life without realising it; **for example someone who has had to overcome and adapt to significant social, physical or circumstantial difficulties and has still remains positive and constructive will have developed a high level of resilience and adaptability, but they may not realise they have done.** Therefore this capability would need to be evidenced, citing briefly the experiences in which these skills were honed, and demonstrating that they can adapt and be resilient in other/new circumstances.

The digital age brings with it a new currency of information and communication and as with all new currencies, there are significant implications, opportunities and risks in terms of power and influence. Examples include the use of personal data for political and propaganda purposes; trolling and cyber-bullying; bio-technology and security; the accelerated impact via social media (positive examples in countries where there is political and social repression; negative examples where social media is used to generate and stir-up hatred, such as extremist organisations and knife crime in London).

We therefore have a collective responsibility to ensure this extraordinary tool of the enormous power and influence - digital technology, which is driving the Fourth Industrial Revolution - is a force for good, for tolerance, democracy, collaboration and constructive learning. In doing so, we need to ensure it does not get exploited for destructive or manipulative purposes. Most of all, digital tools, and the internet with its remarkable reach, provide us with an extraordinary, unprecedented opportunity for vast numbers of people to be empowered and enriched by multicultural, multimedia learning in all spheres of life. This needs to be inclusive, in content, pedagogical method and style to accommodate motivated learners in all areas of society, not confined to elite education or exclusive training. This paper demonstrates that the most important competencies to empower learners globally for success in life and work are transversal soft skills, and calls for a concerted effort, by individuals, organisations and governments to harness the immense power of digital to human skills for the good of learning.

¹ <https://www.ft.com/content/ab5daa64-d100-11e7-947e-f1ea5435bcc7>



Definition and Origins

Transversal competencies are also commonly referred to as soft skills, key competencies, 21st century skills, and global competencies. They are “the cornerstone for the personal development of a person” (EU, ESCO¹) and are fundamental for applying any knowledge or skill. As the OECD² noted in developing the PISA framework: “A competency is more than just knowledge and skills. It involves the ability to meet complex demands, by drawing on and mobilising psychosocial resources (including skills and attitudes) in a particular context”.

Transversal competencies have the following **characteristics**:

- they are **transferable** across domains, geographies, work and life contexts;
- they typically relate to **social and interpersonal relations**;
- they are **cross-functional and cross-curricular** in training and education, but can be combined in a blended learning approach, e.g. collaborative problem-based learning;
- communication is the key element in manifesting and evidencing transversal skills; **if not communicated explicitly**, they can **remain undervalued** or unrecognised;
- they are **essential tools** in any context of **significant and accelerated change**;
- they **can be observed, evidenced and developed**, whereas developing values such as integrity in adults and changing ingrained character traits is extremely difficult;
- they are **learnt through experience and development** and cannot be easily taught, except through highly interactive learning processes;
- in their development, they have a symbiotic relationship **with improved self-awareness and self-knowledge**.

In 1970 UNESCO began to promote increasingly widely accepted ideas on the importance of lifelong learning to society, first with Paul Lengrand’s Lifelong Education then with Faure’s report (1972) emphasising the ‘learning society’. The concept of the learning society became established in the context of continual change and acknowledged need for learning

¹ https://ec.europa.eu/esco/portal/escopedia/Cross-sector_skills_and_competences

² PISA AND THE DEFINITION OF KEY COMPETENCIES, 2005: <http://www.oecd.org/pisa/35070367.pdf>

throughout life in an enlightened society. Earlier lifelong learning pioneers such as Basil Yeaxlee (Lifelong Education, 1929) had created the foundations for this concept.

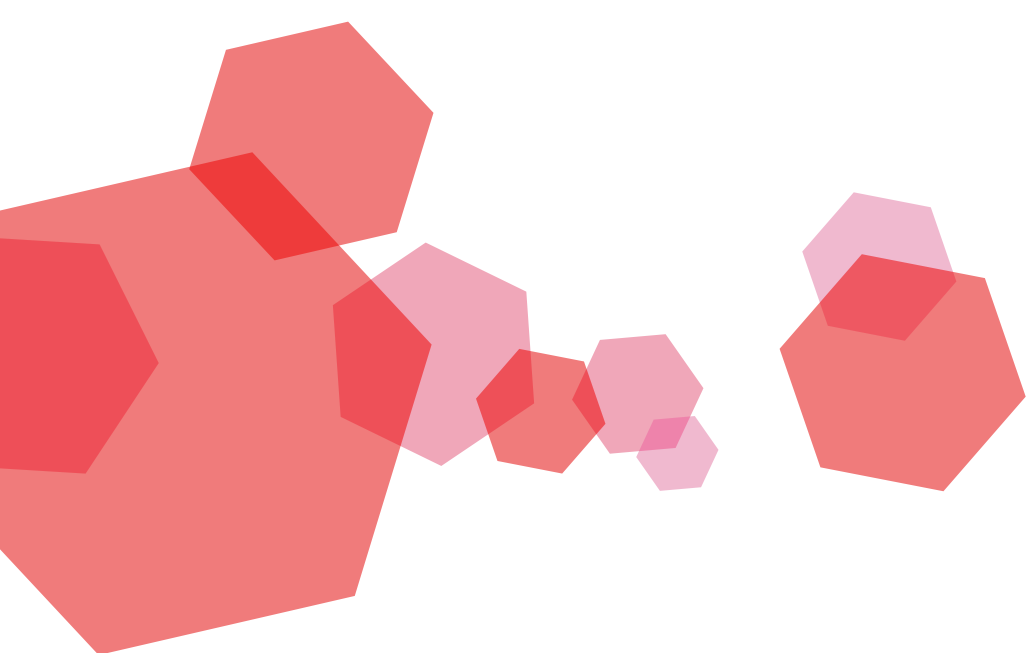
The early signs of the growing international consensus around the importance of transversal competencies for the 21st century were evident in 1996 in **UNESCO's historic Report of the International Commission for Education in the 21st Century**³.

This identified Four Pillars of education and in so doing helped to shift the balance from teaching to learning: Learning to Live Together, Learning to Be, Learning to Know, Learning to Do.

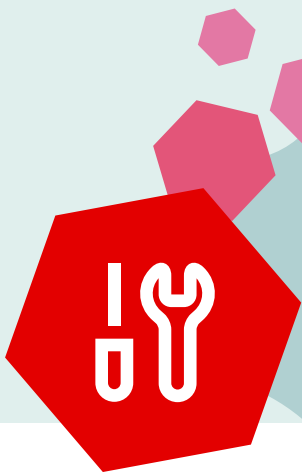
The Commission also concluded that "learning how to learn" is the key for individuals to adapt to the rapidly-changing world.

The first Pillar recognised the critical role of learning for mutual understanding in balancing the threats and opportunities inherent in the new globalised, technology-driven, hyper-competitive world. Learning to Be, which evoked Faure's 1972 UNESCO publication of the same name, emphasised the need, more essential than ever, for *"greater independence and judgement combined with a stronger sense of personal responsibility for the attainment of common goals"* (UNESCO, 1996, p.23).

Jacques Delors stressed the vital importance of lifelong learning for everyone: *"none of the talents which are hidden like buried treasure in every person must be left untapped"*, and the accompanying need for "greater self-knowledge" (Ibid.).



³ The Treasure Within: www.unesco.org/education/pdf/15_62.pdf



From Key competences to Transversal competencies

The recognition and development of these critical transversal skills in all spheres of life has not kept pace with this unprecedented rate of change, and this leaves organisations, workers and citizens exposed to the risk of marginalisation.

Therefore, an urgent need to improve the transversal skills of workers, learners and citizens is recognised by many International Organisations, governments, businesses, employers, and education and training providers worldwide.

As we will see below, several transversal skill frameworks have therefore emerged at national and international level, but there is widespread uncertainty about which of these transversal competencies are the most critical, about how they may fit into a conceptual taxonomy of competencies and dovetail with more traditionally recognised cognitive and technical skills, and about how these competencies can be integrated into existing training systems, developed and formally recognised. For example, how does an organisation go about developing such “soft skills” in its workforce and embedding the competencies into practice and operations at an organisational level, when people are more accustomed to traditional learning models, valuing specialist knowledge and having their interactions defined by administrative organisational processes, or by a relatively closed organisational culture? In highlighting the key transversal competencies, the paper explores some of these questions below.

In 2006, a Recommendation of the European Parliament set out 8 key competences for life-long learning¹, and defined the knowledge, skills and behaviours that comprise these competences. The Recommendation also identified 7 underpinning transversal themes which are the basis for the transversal competencies we recognise today.

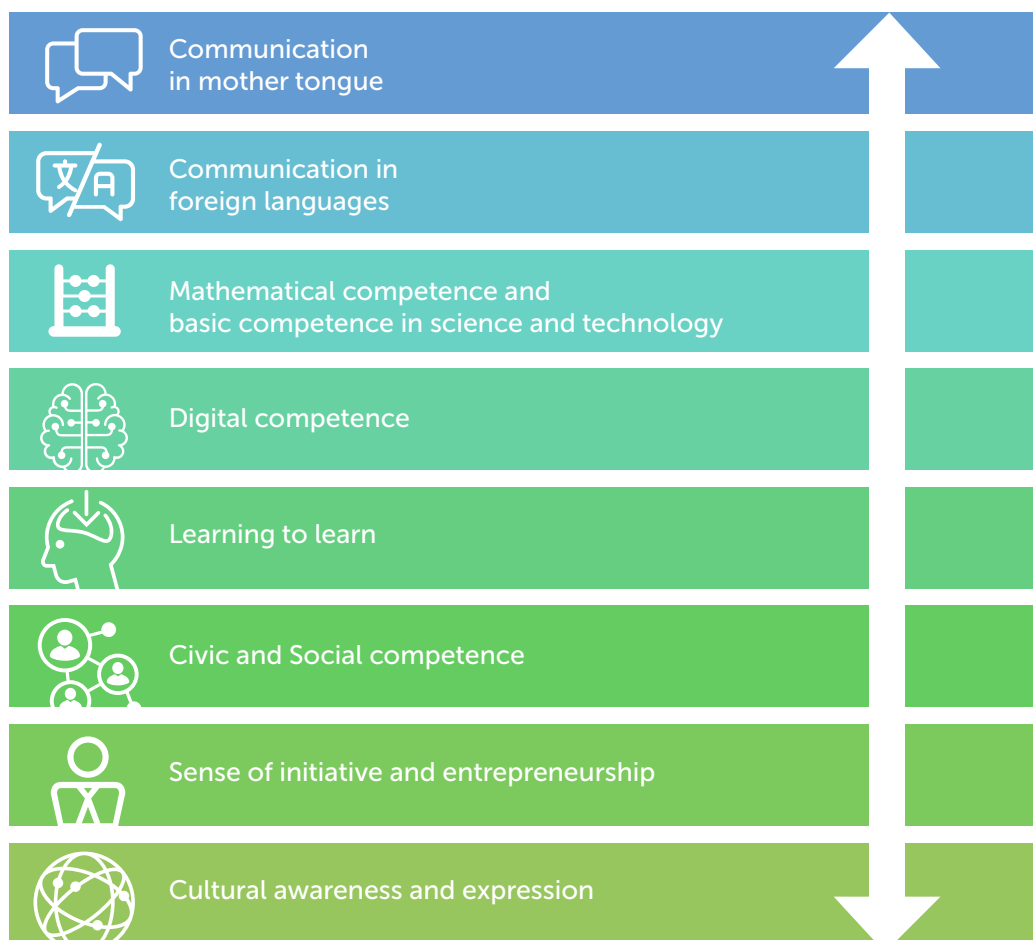
In the 2006 Recommendation, “competence” and “competency” are synonymous, but that is increasingly not the case in current usage. There is an important distinction to make between the two terms, albeit a distinction driven by usage, specifically in human resources

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32006H0962>

and personnel selection, rather than linguistic or etymological origins. While “competence” tends to be used as a synonym for “sufficient ability to be effective” in something, “competency” tends to be used as a synonym for a combination of knowledge, skills and attitudes for, as defined in the United Nations² careers structure as a “combination of skills, attributes and behaviours that are directly related to performance on the job”.

“Competence” implies a more limited or circumscribed capability, whereas “competency” implies an applied framework of skills and behaviour. This paper reflects the latter term and definition and attempts to demonstrate how the individual transversal competencies are vital in and of themselves, while at the same time being composed of and interwoven with other skills, attitudes and behaviours (see Conceptual Framework for Skills in the 21st Century below) whenever they are meaningfully applied in the real world.

Figure 1: 8 Key Competencies defined by the European Parliament Recommendation 2006



² United Nations – Competencies for the Future:
https://careers.un.org/lbw/attachments/competencies_booklet_en.pdf

Of the 8 Key Competencies in the diagram in Fig.1, three are out of the scope of this paper as they are standard components of the formal education process: Communication in Mother Tongue, Communication in Foreign Languages, Mathematical Competence and Basic Competence in Science and Technology.

Figure 2: 7 Transversal themes underpinning the Key Competencies, EU 2006



The 5 key competencies not typically catered for in standard formal education (in Figure 1, reading left to right, from Digital Competencies to Cultural Awareness and Expression), plus the 7 transversal themes the European Parliament ratified, together form the basis for the transversal competences increasingly regarded as core competencies globally. There are, however, some overlaps between these, and some competencies that emerge as more critical and more widely empowering than others.



Essential transversal competencies



1. Collaborative problem solving

In a globalised, hyper-connected environment, people from different backgrounds and cultures come into contact with each other more often than in the past, and at the same time we face major challenges for humanity such as food security, inequality of economic opportunity, environmental and biodiversity sustainability, sustainable energy sources, and increasing wealth inequality (Piketty, 2014).

In a highly competitive marketplace, companies need to continually innovate to survive, whilst operating sustainably, with corporate and social responsibility, in the face of global competition and reduced labour costs elsewhere.

People who can collaborate effectively to solve problems, negotiate a way through these demanding challenges and create new innovative opportunities, are at a premium.

Such collaborative problem-solving involves exercising other key competencies, notably creativity, resilience, initiative, cultural awareness (including understanding “the other”), social intelligence and critical thinking.

It is no surprise, therefore that in the analysis of sources from International Organisations, problem-solving is the competency or capability which most frequently comes first, alongside digital competencies.

In 2016, the World Economic Forum set out the Competencies, Foundational Literacies and Character Qualities it concluded are essential in the 21st century in a “New Vision for Education”.

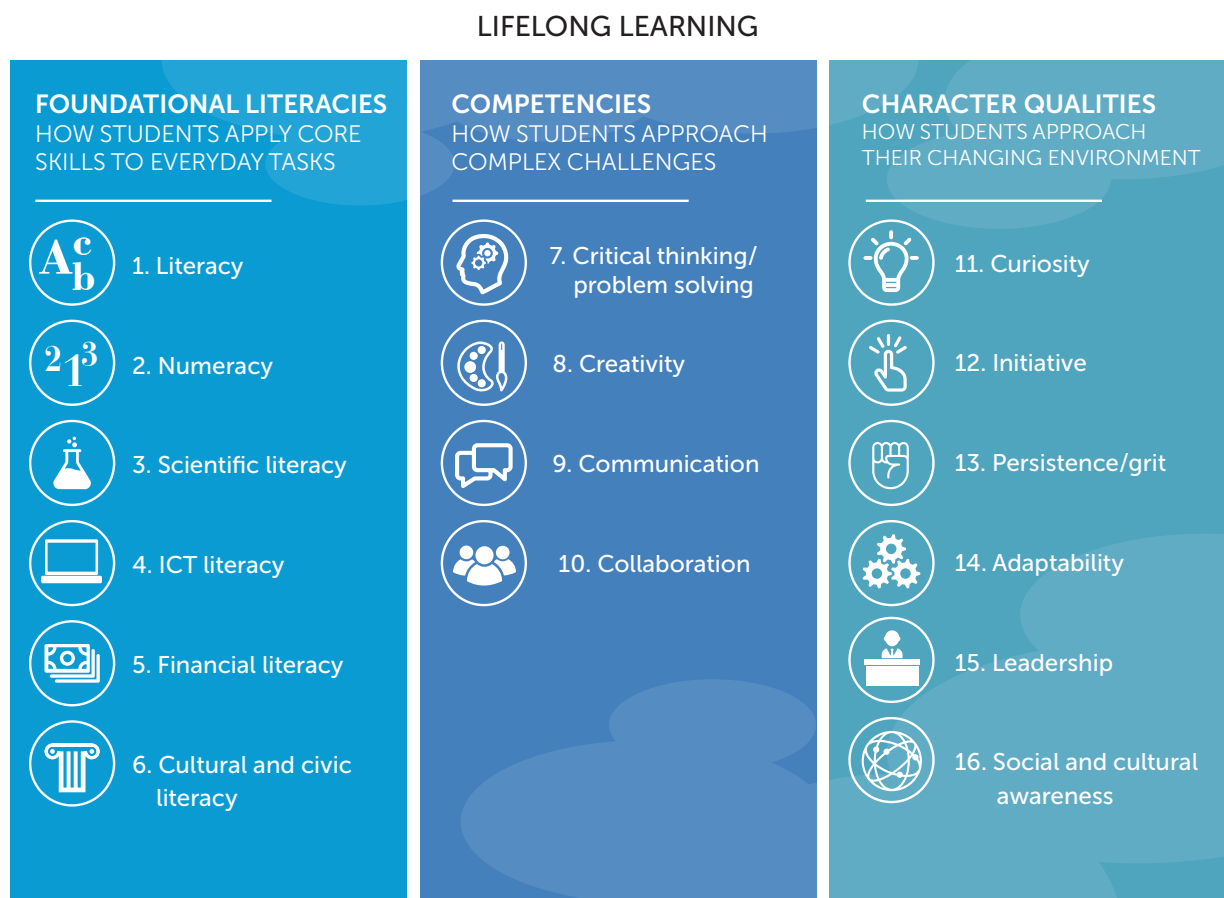


Figure 3: World Economic Forum, New Vision for Education 2016

This vision gave much more significance than previous educational models to the core Competencies (*problem-solving, collaboration and critical thinking*) and Qualities (*adaptability, persistence/grit (resilience) and social and cultural awareness*) needed to succeed in education and life.

The WEF's Future of Jobs report¹, also released in 2016, focussed on labour market and occupational changes in the context of the Fourth Industrial Revolution and the digital age, as distinct from the perspective of education.

However, it is striking how similar the sets of top skills required are in the two WEF forward-looking reports (key competencies in education and life; top skills required in the world of work); problem-solving emerges as a top critical skill and competency in both.

¹ http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf

The survey research undertaken for the WEF's The Future of Jobs revealed a consensus in the top 5 skills required in 2020 as *complex problem-solving, critical thinking, creativity, people management, coordinating with others/collaboration*, 4 of which are identified as key competencies in New Vision for Education, so the commonality extends beyond problem-solving. In practice, complex problem-solving involves coordination and collaboration with others and other fields of knowledge, as a complex problem is unlikely to be one that does not affect others or require the input of others to resolve.

Top 10 skills



Figure 4: Top 10 Skills 2020, Future of Jobs Report, World Economic Forum, 2016

Having introduced "Problem-solving in technology-rich environments" in PISA since 2012, the OECD initiated the measurement of "*Collaborative Problem-Solving*" in PISA in 2015 and in the Programme for the International Assessment of Adult Competencies (PIAAC).

The OECD concluded that this skill is fundamental in education and the workforce for numerous reasons including:

- The increase in project-based work in national contexts;
- The fact that recent curriculum and instruction reforms have focused to a greater extent on the teaching and assessment of 21st century skills;
- The fact that students need to prepare for careers that require the ability to work effectively in groups and to apply their problem-solving skills;
- Collaboration among team members is crucial to the success of work groups, corporations, public institutions, organisations and government agencies and families. One uncooperative member of a team can have serious negative consequences on team success.

The OECD defines “Collaborative Problem-solving” in PISA thus:

“Collaborative problem-solving competency is the capacity of an individual to effectively engage in a process whereby two or more agents attempt to solve a problem by sharing the understanding and effort required to come to a solution and pooling their knowledge, skills and efforts to reach that solution”.

There have been numerous other authoritative sources that have recently emphasised the vital importance of problem-solving, especially in collaboration., including the former UK Commission for Education and Skills who define problem-solving as one of the “key skills for the future” in The Future of Work Jobs and Skills in 2030.

Problem-solving has been integrated into pedagogic practice in innovative learning and teaching models at many universities (for example, Maastricht University, Leicester University and Lancaster University). Usually in the guise of Problem-based Learning, this learning model groups students, academic staff and business consultants around a problem to be solved or opportunity to be unearthed, in order to develop the students’ collaborative skills, to solve cross-sectoral problems and to create real new opportunities.

Solving thorny problems and creating new business opportunities in complex globalised contexts requires combinations of knowledge and competencies that are rarely found in any one company or any single organisation.

As a result, open innovation has become increasingly prevalent in recognition of the fact that external input and perspectives are usually essential for significant innovation and change. In open innovation, and in change projects, collaborative problem-solving is a critical capability.

In practice, collaborative problem-solving involves combining a range of other soft skills and qualities - including empathy, adaptability, initiative and independent thinking, and working across cultural and organisational boundaries - with specialist competencies. In an environment of constant change, with market disruption and challenges to existing business models, problem-solving skills are the standard currency, highly sought-after across all sectors. To function effectively in this context, all organisations need to be equipped with collaborative problem-solving skills, which can be considered, together with digital competencies, as a quintessential skill of the 21st century.



2. Learning to learn, Continuing to learn

Alongside collaborative problem-solving, learning to learn and continuing to learn emerges as one of the most highly valued transversal skills globally. In an era of relentless and accelerated change, constant adaptation to and exploitation of new technologies, **communication and processes which in the past unfolded over long timescales - if at all - are now compressed into mere moments for the modern worker, who must rapidly synthesise a wide range of external inputs and provide more sophisticated multi-channel compatible outputs.**

The ability to learn continuously, rapidly and systemically is therefore more critical than ever.

This is true also across the career trajectory, as individuals increasingly need to rapidly learn, combine and apply new skills and knowledge, to avoid becoming marginalised, just as organisations do.

The advances of technology and the effect of global competition have also significantly reduced the relative costs of experimentation, research and design for organisations, which means they can innovate more rapidly and extend into new sectors, but to do so effectively requires highly developed learning capabilities both at individual and organisational levels. Applying new concepts and methods which are proving advantageous in the Fourth Industrial Revolution, such as Agile development, service design or open innovation, requires continuous learning capacity on behalf of the workers, and critically, the ability to rapidly put in practice the learning. If we consider the effect of convergence across previously separate business sectors (necessary to solve problems and for competitive advantage), and the trans-disciplinarity that both drives and is enriched by this, then we can see that the worker must be an active and continuous learner at the centre of this complex vortex of change. As explained below, the capacity for *organisational "bildung"* is a critical enabler.

Learning to learn and continuing to learn is therefore an intense lifelong process, without end; there are a rich variety of learning strategies and learning methods, from recognised pedagogical standards to personalised processes.

Essentially, learning to learn is also an attitude, an inclination, but one that can be developed; the enlightened learner perceives different contexts and experiences as potential learning opportunities.

Dedication to continuous learning, whether at policy or personal level, is driven by curiosity, a quality considered by the World Economic Forum and other IOs as fundamental. Continuous learning brings many rich fruits including the opportunity for transdisciplinarity, which will be one of the ten top skills for the future workforce, according to the US Institute of the Future¹ in its report, "Future Work Skills 2020".

The Canadian organisation EduGAINS² provides ministry developed resources for schools in the Ontario region. In 2016 EduGAINS developed a Global Competencies Framework³ in 2016. Together with problem-solving and collaboration, self-directed learning, including the process of self-reflection, was proposed as one of 6 global competencies in this forward-looking Framework:

“ *Self-directed learning means: becoming aware and demonstrating agency in one’s process of learning, including the development of dispositions that support motivation, perseverance, resilience, and self-regulation.*

(page 1, EduGAINS Global Competencies Framework)

”

Lifelong learning and equality of opportunity to learn are foremost among the United Nations-led Sustainable Development Goals 2030 for education; Goal 4: “inclusive and equitable quality education and promote lifelong learning opportunities for all”.

The OECD, which defines and details “global competencies” in its 2018 PISA Handbook⁴ (p.4) states that “*Acquiring global competence is a life-long process – there is no single point at which an individual becomes completely globally competent*”.

The concept that the learning process is lifelong and life-wide, rather than being limited to formal education, is now broadly accepted both by international policymakers and individuals. However, it is less evident at the national level - individual European countries for example - how and whether lifelong learning opportunities, and recognition of informal but no less vital learning achievements, are actively supported and promoted. This may be in part because globalisation, intense competition and the information revolution (via information and communication technology) have created a subtle shift in the international discourse from ‘learning society’ to ‘knowledge society’.

¹ http://www.iftf.org/uploads/media/SR-1382A_UPRI_future_work_skills_sm.pdf

² <http://www.edugains.ca/newsite/21stCenturyLearning/index.html>

³ http://www.edugains.ca/resources21CL/21stCenturyLearning/FrameworkofGlobalCompetencies_AODA.pdf

⁴ <http://www.oecd.org/pisa/Handbook-PISA-2018-Global-Competence.pdf>

Delors made an explicit and constructive link between the learning and knowledge society in 1996 in 'The Treasure Within', then the OECD with 'Knowledge Management in the Learning Society' (2000). However, since then 'the knowledge society' has largely replaced the 'learning society' as a widely stated political aspiration, and more recently the 'knowledge economy' has become more prominent than 'the knowledge society'.

To fully realise the value of learning to learn and continuing to learn, it is worth exploring briefly the relationship between knowledge and learning. A major difference between knowledge and learning concerns power and agency. For Foucault knowledge is not power per se, but knowledge and power are intrinsically entwined: "*mechanisms of power produce different types of knowledge which collate information on people's activities and existence. The knowledge gathered in this way further reinforces exercises of power.*"⁵

It is widely agreed that a core characteristic of learning, and therefore of the transfer of knowledge, is that it is essentially social. If one recognises and accepts 'the intrinsic sociality of knowledge', (Muller 2012, p.2), and 'the social process of learning' substantiated by Jarvis (2007, p.7), then that implies that knowledge has little value other than data and memory until it is shared beyond the individual. **Put another way, acquisition of information or knowledge does not constitute learning until the information is actively contextualised by the learner, within their social, personal or professional milieu. Learner agency is key: knowledge is by necessity mediated through personal experience, to become learning.**

Jean Lave and Etienne Wenger, in their work on situated and participative learning, underlined the experiential and social nature of learning and established the notion of communities of practice, and the importance of learning through practice. Experiential learning, for many pedagogy experts is not the same as active learning, in that the latter involves the learner's own responsibility and agency. Participative learning and active learning, which have their origins in Vygotsky's activity theory⁶, chime with the German concept of *bildung*, deliberate full self-development for wider social good, actively developing what is currently termed as a "*growth mindset*".

Bildung requires learner agency and responsibility, consciously involving the hand, the heart and the mind - and therefore all the transversal competencies - in self-cultivation.

Enriched and shared learning contexts, whether in person, online or blended, help to moderate the transference of power with knowledge, since such communities of practice enable a more reciprocal and less hierarchical learning process and a more gradual movement from novice to expert, rather than the traditional unilateral bestowal of knowledge by the master to the passive student. Online communities of practice have become widespread as learning

⁵ O'Farrell 2007, www.michelfoucault.com

⁶ <http://www.education.ox.ac.uk/research/osat/>

forums, and together with other new learning approaches, such as corporate academies, are part of a rich learning landscape in and across organisations which provide new opportunities for learning to learn and continuing to learn, especially through shared practice.

There appears to be a renewed interest in this organic capability of learning, whether at individual, professional group or organisational level, to generate greater autonomy and the capacity to apply knowledge in an innovative way. A comprehensive study⁷ by Pearson, the UK innovation agency NESTA and Oxford University in 2017 revealed that Learning Strategies, Active Learning and Education and Training will be the most sought-after skills in 2030 from both the UK and the USA perspectives. The researchers analysed 7 mega-trends and derived, via expert foresight workshops and the use of a machine learning algorithm, job and skill predications the US and UK. The megatrends analysed echo those which have shaped the International Organisations' conclusions on key competencies: technological change, globalisation, increasing equality, demographic change, environmental sustainability, urbanisation and political uncertainty.

TOP SKILLS FOR 2030

The top 10 skills, abilities, and knowledge associated with rising occupations as follows.



Figure 5: Pearson, NESTA e Oxford Martin School, University of Oxford, 2017

⁷ https://www.oxfordmartin.ox.ac.uk/news/2017_news_future_of_skills_report
<https://futureskills.pearson.com/>

The study was unusual in itself, in that the methodology used combined active learning and machine learning with traditional human research methods. The conclusion that active learning and learning strategies are top critical skills for the workforce, now and in the future, resonates strongly with Wenger's participative learning and Vygotsky's Activity Theory referred to above. However active learning has implications for organisations too.

The concept and practice of the learning organisation, which has recently become well established, adds a further dimension to the competency of learning to learn that is worth highlighting here. The worker's individual journey of continuous transformation to the face of technological and global change is mirrored by the organisation's continuous transformation as an active learning organisation. In practice, this means "joining the dots in a way that maximises collective learning potential"⁸ and it is a challenging and continuous endeavour.

I would propose the following 10 open learning principles to define **what being a learning organisation means**:

1. keeping the organisation **secure but knowledge-porous** for open innovation;
2. being **operationally agile, but consistent**, with a clear identity;
3. **looking after and engaging the employees** and partners;
4. ensuring it is a place where **people** enjoy working and **are stimulated**;
5. providing **continuous learning opportunities**, both at the individual level and within and across groups and organisational boundaries;
6. **stimulating self-learning, empowering and developing staff** to continuously strive to better themselves, using creative methods such as games and contests sensitively;
7. encouraging **curiosity**, being **culturally open** to new ideas and experimentation
8. in development projects, being **unafraid of failure, but balancing investment, risk and learning dividend** judiciously;
9. **accommodating different** opinions and **learning styles**;
10. **harnessing diversity and pluralism**, to reflect the diversity and pluralism in society and in the actual and potential markets served.

We can see therefore that learning to learn and continuing to learn, whilst being a key competency for self-motivated workers, depends on collective and coordinated responsibility within organisations to be fruitful. Here we encounter once again the concept of *bildung*, but **we introduce a new concept: organisational bildung**. It is not only the learner who is empowered and self-motivated to strive for the full cultivation and development of his/her talents and abilities in order to realise their full potential.

The learning organisation too is driven by commitment to its own cultivation and maturation as a collective endeavour in order to operate effectively in the ever-changing economic and cultural context.

⁸ Sharon Varney, <https://www.alchemyformanagers.co.uk/topics/aDLuzP9YRKgdeLv.html>

Self-knowledge is a vital component of learning to learn and continuing to learn, both for individuals and organisations. EduGAINS, among others, has highlighted the importance of self-reflection as an inherent part of learning. Self-reflection leads to self-knowledge and intrinsic within genuine learning is the development of self-knowledge.

Midgley (2006, p.125) points out that a lack of *self-knowledge* can be a moral fault and a barrier to our own learning because it blocks our understanding of other people. And therefore 'cognitive success depends on moral attitude' (ibid, p.202) to others.

Clearly a capacity for self-knowledge is developed in the earlier stages of life, but it is quite possible to emerge from formal education with a deficit in this capacity, since this is often masked by widespread assumptions around knowledge acquisition and demonstration, exacerbated through traditional screening processes of candidates for jobs and courses.

Soft skills such as empathy, resilience and versatility are vital qualities in this regard, and are defining factors in the progression of learners in the world of work and in life beyond formal education.

There are an increasing number of policy initiatives, and instruments such as self-directed digital learning tools, for example using open badges and digital certification.

These innovative platforms are embedding reflection in the learning process and recasting learning identities, recognising the transversal skills, such as self-awareness and problem-solving, that are not formally certified but are critical skills for life and work.

Once recognised (both by oneself and by others) and developed in a process of continual learning, such skills can help to navigate complex change, and create opportunities where previously there appeared to be only constraints. Furthermore, these skills help to deliver the benefits of the "learning society", rather than merely reinforce the "knowledge economy".



3. Digital competencies and mindset

Digital competencies are not only a critical enabler for organisations to operate efficiently and effectively, but they are also transformative for businesses, acting as a key driver for growth and innovation.

Well-developed digital skills enable organisations to be more agile operationally, to apply unprecedented levels of business intelligence, to navigate changing marketplaces and to respond to customer expectations, which are radically different to those of just 15 years ago.

The customer experience has been transformed by digital technology, and ICT in general, both in private and public sectors, and this has been a key driver in the reinvention of the increasingly dominant service sector. In sectors such as financial, manufacturing and education, digital competencies and tools have revolutionised the customer journey and the supply chain.

A high level of well-integrated digital competencies can deliver a significant competitive advantage to organisations, especially if deployed in combination with the other key transversal and technical skills. Digital and ICTs have delivered a massive boost to business capability, and when combined with a people-centred organisational culture of openness, experimentation and adaptability, and based on sound business processes, provide the power for innovation and collaboration. That is why most modern organisations have embedded a digital strategy in their overall business strategy, instead of merely deploying digital and ICT tools as an add-on. However, as we shall see, digital competencies encompass a wide range of skills, transversal, cognitive and technical, as well as a specific mindset.

Until recently, digital skills were synonymous with ICT skills and categorised as cognitive competences in international organisations' policies and in national education and training. As the internet and the digital world has become all-pervasive in society (even those geographic areas that have fewer computers often have a high level of mobile phone access), it is having a transformative effect on all areas of life from political to business to personal, and thus digital skills have become transversal skills.

This is especially the case because technical capability is only one aspect of digital skills; the cognitive and technical elements remain, but are far from sufficient by themselves.

The digital skillset involves the effective and integrated use of a wide range of soft skills, which provide the ability to deploy the technical skills and the digital tools in the service of organisational strategy and business objectives.

For example, a sophisticated online CRM tool can only deliver the expected benefits if the organisation has relationship management skills and clear processes for data sharing and data management. In other words, having effective digital competencies means being able to deploy technology judiciously, and to serve a clear business or social purpose, while a deficit in this transversal competency leads organisations to expect software to solve problems and objectives when it is not integrated into the people and process that define the organisation. Furthermore, developing digital competencies is more cost-effective than deploying expensive software tools; it is possible to perform many business functions these days with freely available tools on the internet.

Figure 6: Digicomp 2.1, European Commission, 2017



In Digicomp 2.1, the European Commission identifies the key soft skills involved in digital competencies; among the 5 Competence Areas, three transversal capabilities are prominent: *creativity, problem-solving, collaboration* (3 Content creation; 5 Problem-solving; 2 Communication and Collaboration). Among the 21 Competences, other global transversal skills are strongly implicated: *critical thinking* (1.2 Evaluating Information, Data and Data Content; 1.1 Browsing, Searching and Filtering Data, Information and Digital Content; 4.2 Protecting Personal Data and Privacy); *initiative* (5.2 Identifying Needs and Technological Responses); *cultural awareness* (2.2 Sharing through digital technologies; 2.3 Engaging in citizenship through digital technologies).

Silo-based or indiscriminate use of digital, without due regard for people, process and business objectives can have a weakening effect¹ on the very soft skills that we need to value and develop. Indeed, this calls for skills in contextualisation, rapid information analysis and synthesis, sensemaking and critical thinking as key components of digital competencies. Digital capability needs to be embedded at the top and throughout the organisation, not just among specialists, as it requires vision, leadership and ongoing communication to deliver key benefits such as enhancing organisational capacity efficiency, or empowering learning and development.

Developing and integrating digital competencies enables organisations to be digitally literate as a minimum, and to work towards full digital proficiency. Here are **ten key steps I would recommend on the digital transformation journey**:

1. Defining and embedding a **digital strategy, mapped to business strategy**, integrating IT departments and processes;
2. Define a **digital maturity roadmap** for your organisation, adapting the Digicomp framework and its proficiency levels;
3. Using digital means, i.e. **eLearning**, to ensure all staff have a **basic understanding of digital safety**, device security, data protection (GDPR) and **data sharing principles**;
4. Develop **awareness of business intelligence** across the organisation, an understanding of how this contributes to competitive advantage, and a basic ability in data visualisation;
5. Ensure **collaboration and creative development on digital platforms is build into operational standards**, and educate staff in the power and benefits of real-time collaboration and co-creation;
6. Use **coaching, mentoring activities and role shadowing/secondment** projects to help spread digital competencies across the organisation, **identifying change agents** who can enthuse others, and who are sensitive to people's objections and constraints;
7. Develop in staff at least an understanding of **search engine optimisation, analytics tools**, web page creation tools etc.;
8. Encourage contributions to corporate **blogs, and responsible, professional use of social media** where appropriate for business objectives, e.g. marketing;
9. Ensure staff develop a **sound understanding of the customer digital journey** and ensure some staff know how the related services can be designed and optimised;
10. Develop an understanding of cloud services and the **shift to computing as a utility and software as a service**.

¹ <https://www.trainingzone.co.uk/lead/culture/soft-skills-why-digital-technology-is-killing-communication>

A digitally proficient organisation is also aware of and educates staff in the potential pitfalls of social and professional digital media. Workers and citizens need to be aware that most large technology companies routinely promote, via feeds and advertising, information that reflects the individual's apparent interests, and thus the learning context online risks becoming a mere reflection of the learner's own predilections and limitations. **Information overload in the digital context can result in one's own perspectives and assumptions being reinforced and narrowed rather than challenged or broadened.**

For the citizen, especially when working outside the protected organisational context, there is a risk therefore of an inversion of the idea that knowledge, especially as part of learning and education, should help us broaden and deepen our understanding of others, of the world and ourselves. Technologies of machine reading, sentiment analysis and algorithms are immensely powerful and bring enormous benefits for organisations, but it is wise to bear in mind that these tools are only as sensitive and culturally aware as the humans that created them.

Such risks can be mitigated by developing a good level of digital competency and understanding the benefits and opportunities for democratic health and for innovation of open data and open knowledge, balanced with the recognition for careful management and alignment with social values and business objectives. Globally there is a strong movement for open learning and open knowledge, and for the use of the internet as a free, open global communication and collaboration tool, linking millions of people, assets and information sources, enabling secure distributed networks like blockchain, as its originator, Tim Berners-Lee envisaged.

In the field of learning and development, digital tools and the internet provide an unprecedented opportunity for a rich, memorable, interactive learning process, directly interlinked with business needs.

It is no surprise that Open Educational Resources feature among UNESCO's *Sustainable Development Goals 2030*. Digital learning tools, creatively and sympathetically designed and managed, can transform and empower the learning process, especially where there is open or widespread access to knowledge.



4. Initiative and Independent thinking

The 21st century is a much more confusing, less reassuring but perhaps more exciting world than past centuries in which societies and companies did not have or perceive the complex choices, challenges and opportunities that are commonplace today, whether these relate to the family unit, business models, communication methods or health and medicine intervention for example. Received wisdom from familiar, comforting sources of authority such as the state or elders no longer holds water in a world of unimagined new possibilities, global connectivity, volatility and new perceived threats. In many ways, we are experiencing a second Renaissance, as Ian Goldin has observed: *"this is by far the best time in human history to be alive, this is a new Renaissance driven by an information revolution"*¹.

The ubiquity of access to information paradoxically results in a much higher level of ambiguity.

One piece of ancient wisdom, the old adage of "the more you know the less you understand", still holds true, however, despite the revolutionary advances in technology, the mass availability of education and the global access to information (obviously in some regions and societies such access is limited for various reasons such as conflict or poverty). Indeed, Goldin also highlighted, however, that *"periods of exceptionally disruptive progress [like the Renaissance and the current age] have the seeds of destruction in them and they need to be effectively managed"*(ibid.).

This ambiguity is because of the complexity of the global knowledge society, as well as the fact that there are competing versions of the truth, and advances in knowledge that provide opportunities but qualify, redefine and recontextualise what was previously regarded as absolute knowledge. Learning and development models are correspondingly much less didactic, and much more participative and pluralistic in their approach.

Amidst this ambiguity, complexity and the relative reduction of authoritative direction, the ability to demonstrate initiative, proactivity and an enterprising attitude is therefore more highly valued.

¹ http://oecdobserver.org/files/coffeessg/GOLDIN_Brochure.pdf

FUTURE WORK SKILLS 2020

While all six drivers are important in shaping the landscape in which each skill emerges, the color-coding and placement here indicate which drivers have particular relevance to the development of each of the skills.



Figure 7: Future Work Skills 2020, Institute of the Future, University of Phoenix, Arizona

Being proactive and independent-minded is also more effective than being a relatively passive participant. The education system traditionally has steeped people in knowledge, but not always developed the initiative or the independent thinking that creates opportunities and contributes to problem-solving in organisations. Indeed, behaviours showing initiative tend to be curbed in traditional education, or the old model of the rigid, hierarchical organisation.

Workers in the digital age need to be able to act effectively and swiftly in complex situations without being asked to do so every time; they need to apply skills such as rapid analysis and synthesis to unearth opportunities and they need to be able to perceive problems within their organisation and beyond, before they arise. In short, they **need to be autonomous but responsible** and to achieve that, the competencies of initiative and independent thinking are fundamental.

Initiative is a core transversal quality both for the World Economic Forum and for the European Commission, and looms very large in the Institute for the Future's Report Future Work Skills 2020² (fig. 7).

According to the Institute of the Future's analysis, the computational world, hyper-connectivity and the rise of smart systems call for "*Novel, Adaptive Thinking*" and "*Sense-making*". Clearly independent thinking and initiative are inherent in novel and adaptive thinking. Sense-making reflects "*an increasing demand for the kinds of skills machines are not good at*" (p.8, Future Work Skills 2020, Institute for the Future) and requires the application of a set of transversal skills, including independent thinking, which are capable of creating unique insights critical for decision-making. Sense-making also requires cognitive flexibility, a top 10 skill for 2020 according to the World Economic Forum and "*cognitive load management*", also a top ten skill for the Institute of the Future.

So, in this fast-moving, inter-connected, promising and digitally empowered context, individuals and organisations need to ensure they don't merely become passengers on the digital journey, but are able to demonstrate initiative, proactivity and independent thinking to exercise choices, harness resources and create new opportunities.

A robust mental backbone of independent and critical thinking is therefore essential for the 21st century worker and citizen, With this mental backbone, we are able to optimise the essential drive of curiosity and the set free the power of initiative and proactivity by applying objective reflection, attentiveness and rapid appraisal, as part of our learning framework.

² http://www.iftf.org/uploads/media/SR-1382A_UPRI_future_work_skills_sm.pdf



5. Resilience

Resilience is a relative newcomer to the global stage for transversal competencies and has come to the forefront because of the accelerated rate of change we are experiencing, globally. Because of global competitiveness, rapid changes and surrounding uncertainty, people in the workplace and in their careers are subject to higher pressures, more demanding appraisals and interviews, and unforeseen events, such as being made redundant, or rapidly falling from financial prosperity to economic insecurity. Organisations are subject to the same pressures, and the effect can be collectively more damaging. Resilience in new challenging situations is therefore an essential competency: developing individual and organisational resilience is a vital component of success and sustainability.

Resilience in workers means the ability to stay positive, adaptable and effective, when suffering setbacks such as failed innovations, backfiring interventions, criticism or demanding clients.

The key to exercising effective resilience in such contexts is treating such problems as challenges that one learns from through engaging with, combatting and overcoming; seeing the germ of a new idea or opportunity in the embers of a failure.

Resilience in individuals and organisations means the ability to recover quickly from setbacks, and to treat with difficulties as opportunities to create solutions. Clearly, in practice, therefore, resilience is often combined with initiative, problem-solving and adaptability.

The World Economic Forum refers to resilience as “persistence/grit”, while the Global Peace Foundation names it as one of the 4 key character standards. The US Office of Personnel Management¹ lists resilience as one of 6 fundamental capabilities in leading change.

¹ <https://www.opm.gov/policy-data-oversight/assessment-and-selection/reference-materials/proficiencylevelsleadershipcomp.pdf>

CHARACTER AND CREATIVITY STANDARDS

Purpose	Character	Creativity	Relationships	Learning
<ul style="list-style-type: none"> • Motivation • Vision • Ownership 	<ul style="list-style-type: none"> • Integrity • Respect • Resilience • Conscientiousness 	<ul style="list-style-type: none"> • Innovation • Problem Solving • Critical Thinking 	<ul style="list-style-type: none"> • Communication • Collaboration • Connectedness 	<ul style="list-style-type: none"> • Competence • Reflection

Figure 8: Character and Creativity Standards, Global Peace Foundation, 2016

As is the case with many transversal skills, resilience is equally important at the organisational level. In a competitive global marketplace, companies need both resilience and adaptability to survive and thrive, as much as individuals do. **This is especially critical for small and medium-sized businesses where the ability to bend and adapt but not break in the face of globalisation and disruptive technology is a key to survival.** Large businesses also require great resilience to deal with the complexity of operating in a coordinated way, dealing with conflicting local difficulties, in multiple sectors and territories. Gartner urged organisations to invest in three disciplines to increase trust and resilience², and obviously in the digital age, cyber-resilience for a company is critical, given the increasing number and complexity of threats to information security and business continuity. Neryl East has also offered 5 key traits for resilient organisations which all organisations³ would do well to heed.

However, as Judith Armstrong notes in an article on business resilience for the small business network in the Guardian⁴:

"Business resilience is no different to personal resilience - ultimately it's about your support network – as an individual, building resilience comes from your friends and family, in a business it comes from your relationships with your customers, your staff, your shareholders."

Inequality, and our increasing awareness of it, is one of the global challenges defining our world, and it goes without saying that resilience is a critical competency where the inequality bites. As Wilkinson and Pickett demonstrated in 2009, "Relative inequality"⁵ is what divides societies and creates a vast range of social and health problems, is a less visible but pervasive problem.

² <https://www.gartner.com/en/newsroom/press-releases/2015-09-28-gartner-says-organizations-must-invest-in-three-risk-principles-to-increase-trust-and-resilience>

³ <https://collectivehub.com/2017/08/the-5-key-traits-of-a-resilient-organisation/>

⁴ <https://www.theguardian.com/small-business-network/2018/may/30/the-path-to-resilience-how-to-thrive-in-turbulent-times>

⁵ Wilkinson and Pickett, *The Spirit Level*, 2009

This means that the capacity of resilience is being widely developed but is largely unrecognised and is not being tapped into as a learning and development opportunity.

Relative inequality also applies to access to support networks; someone from a very restricted socio-economic background, who has not benefited from a good standard of education and has lived, like their parents perhaps, in an economically deprived area has a very limited network to call upon, through no fault of their own.

However, in such cases, as long as the digital divide has been bridged and there is good broadband and technology available, digital learning and networking opportunities which previously seemed impossible can be provided through public and corporate sources, creating and recognising new possibilities and opportunities for people who had previously been marginalised, and indeed potentially making a positive example of their remarkable resilience in the face of difficulty, from which others can learn.



6. Adaptability

For the P21 Group (Partnership for 21st Century Learning)¹, adaptability and flexibility come top of the list of Life and Career Skills needed in the 21st century, and need to be developed continually, from an early age. Given the triumvirate of defining influences on 21st century life – globalisation, digital, constant change – this is entirely logical. The World Economic Forum too, highlights adaptability as one of 6 key character qualities in their New Vision for Education.

21st Century Education

Flexibility and Adaptability

- Adapting to varied roles and responsibilities
- Working effectively in a climate of ambiguity and changing priorities

Initiative & Self-Direction

- Monitoring one's own understanding and learning needs
- Going beyond basic mastery of skills and/or curriculum to explore and expand one's own learning and opportunities to gain expertise
- Demonstrating initiative to advance skill levels towards a professional level
- Defining, prioritizing and completing tasks without direct oversight
- Utilizing time efficiently and managing workload
- Demonstrating commitment to learning as a lifelong process

Social and cross cultural skills

- Working appropriately and productively with others
- Leveraging the collective intelligence of groups when appropriate
- Bridging cultural differences and using differing perspectives to increase innovation and the quality of work

Figure 9: P21: Partnership for 21st Century Skills

¹ <http://www.p21.org/about-us/p21-framework/266-life-and-career-skills>

Employers expect new and potential recruits to have demonstrated, throughout their career, flexibility of attitude and aptitude, and versatility in response to changing requirements and circumstances. Any job candidate or employee without adaptability skills will struggle to succeed in any organisation. It is perhaps because this skill requirement is so obvious, that adaptability escapes attention often in transversal competency lists.

However, such omissions are regrettable, because having well-developed adaptability skills enables one to not only better manage the impact of change on oneself, but also develop highly valuable change management skills, including the ability to analyse and synthesise the “as-is” situation, to perceive and work towards the “to-be” situation, to empathise with those affected by change and therefore to develop practical solutions to mitigate the effect of change and constructive plans to enable a necessary change to be effectively embedded. **Good adaptability skills, when put into practice in context, can therefore often enable the practitioner to exert more influence and have a greater stake in what the change will look like.**

Good adaptability skills enable us to “change gear” without “stalling the engine” when faced with changing priorities and demands.

Combined with resilience, they enable us to see problems as challenges and opportunities, to stay positive when faced with difficulty. Most importantly of all, they enable us to treat the process of adapting to changes as an enriching learning experience, which will make similar challenges more easily surmountable in the future.

The ability to adapt with minimum fuss and maximum effectiveness is agility, also a highly valued individual and organisational competency, so much so that an entire business approach, the Agile movement, has developed from this principle, and from lean manufacturing. The Agile innovation movement originated in Japan, the ideas gaining traction with the publication, in the Harvard Business Review, of “The New New Product Development Game” by Takeuchi and Nonaka, in which the writers proposed a “rugby” approach to business innovation and efficiency: “where a team tries to go the whole distance as a unit, passing the ball back and forth.”²

On his website “7 survival skills”, Tony Wagner uses a quote by the President of a large US corporation to illustrate precisely why adaptability and agility skills are now more highly valued competencies than specific technical skills:

“I’ve been here four years, and we’ve done fundamental reorganization every year because of changes in the business...I can guarantee the job I hire someone to do will change or may not exist in the future, so this is why adaptability and learning skills are more important than technical skills.”

Clay Parker, President of Chemical Management Division of BOC Edwards

² <https://hbr.org/2016/04/the-secret-history-of-agile-innovation>



7. Cultural awareness and expression

Naturally, in a more globalised, connected and “smaller” world, where people more frequently come into contact with people from other cultures, cultural awareness and expression is prominent among global transversal competencies; the World Economic Forum, European Union, Institute of the Future (Cross-cultural Competency) and the OECD all consider it a core transversal skill.

For businesses, facing new competition in open markets from all over the world, and coming up against competitors who have the scale or the reduced labour costs to render their business uncompetitive and unsustainable, the opportunities and threats are considerable.

Individuals too now realise that there may new international pastures for their talents to grow, but that they need to be able to operate efficiently across cultural boundaries to take advantage of these opportunities and not be left behind.

The ability to work across cultural boundaries and adapt to different cultural norms with agility, respect and efficiency is therefore paramount.

Obviously, cognitive abilities in language and cultural knowledge are important components of cross-cultural competencies, especially for cultural expression, but even without the cognitive elements there is a great deal one can do to develop cross-cultural competencies in terms of attitude, openness, awareness, self-knowledge, curiosity, learning to learn and continuing to learn.

The OECD's Global Competencies, defined in the PISA Handbook 2018, are all about constructive cultural interaction:

1. the capacity to examine issues and situations of local, global and cultural significance e.g. poverty, economic interdependence, migration, inequality, environmental risks, conflicts, cultural differences and stereotypes;
2. the capacity to understand and appreciate different perspectives and world views;
- 3. the ability to establish positive interactions with people of different national, ethnic, religious, social or cultural backgrounds or gender;**
4. the capacity and disposition to take constructive action toward sustainable development and collective well-being.

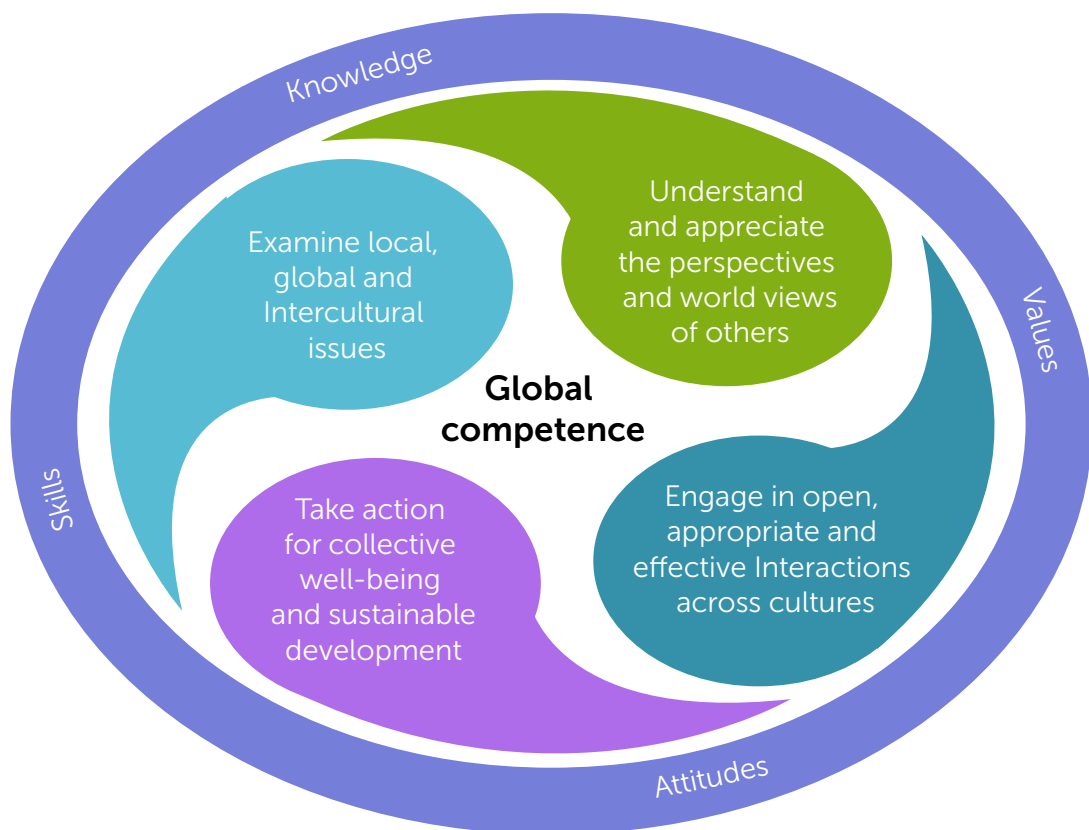


Figure 10: Dimensions of Global Competence, OECD, PISA Handbook, 2018



Conceptual Competency Framework

Each of these competences by themselves are not sufficient to create an impact or solve a problem for example; there are two reasons for this.

Underpinning each of these competencies is a set of behaviours, without which the competency itself cannot be effectively deployed.

For example, problem-solving requires openness to collaboration, analytical approach, empathy and exercising the imagination.

Secondly, in practice, the application of any such competency goes hand in hand with the deployment of others. That is to say, the effective application of such competencies usually requires the dynamic integration of three skill levels: qualities (e.g. empathy, attentiveness), capabilities (e.g. communication skills, change management ability) and expertise (e.g. cognitive knowledge in IT or in international affairs).

Indeed, in 2006 when the European Parliament defined the 8 core competencies for lifelong learning with a European Reference Framework, the knowledge, skills and attitudes pertinent to each of the core competencies were set out¹.

Similarly, the OECD has defined each core competency it measures in PISA as comprising knowledge, skills, attitudes and values, intertwined and applied for action.

“Competence” is not merely a specific skill but is a combination of knowledge, skills, attitudes and values successfully applied to face-to-face, virtual or mediated encounters with people who are perceived to be from a different cultural background” (OECD PISA Handbook 2018, p4).

PISA 2030 AND CCI FRAMEWORKS

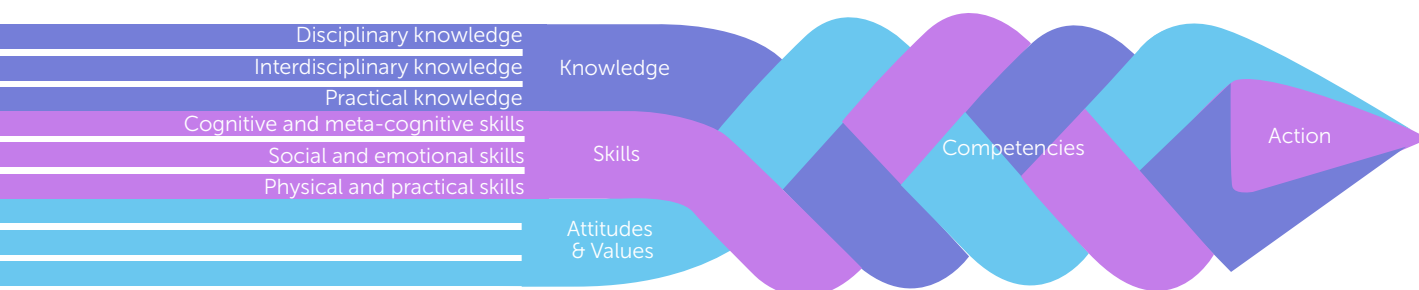


Figure 11: OECD PISA 2030 Vision

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32006H0962>

The conceptual Framework below is an attempt to demonstrate how transversal competencies are both underpinning core qualities and applied transversal capabilities.

These core competencies act as the building blocks both for each other and for putting into practice applied and specialist domain-level expertise, which depend on their solid foundation.

Effective two-way communication requires empathy for example, and in order to communicate specialist expertise to non-specialists and apply it in other contexts - for example to address wider societal problems – learning of the other contexts, social intelligence and critical thinking are all required.

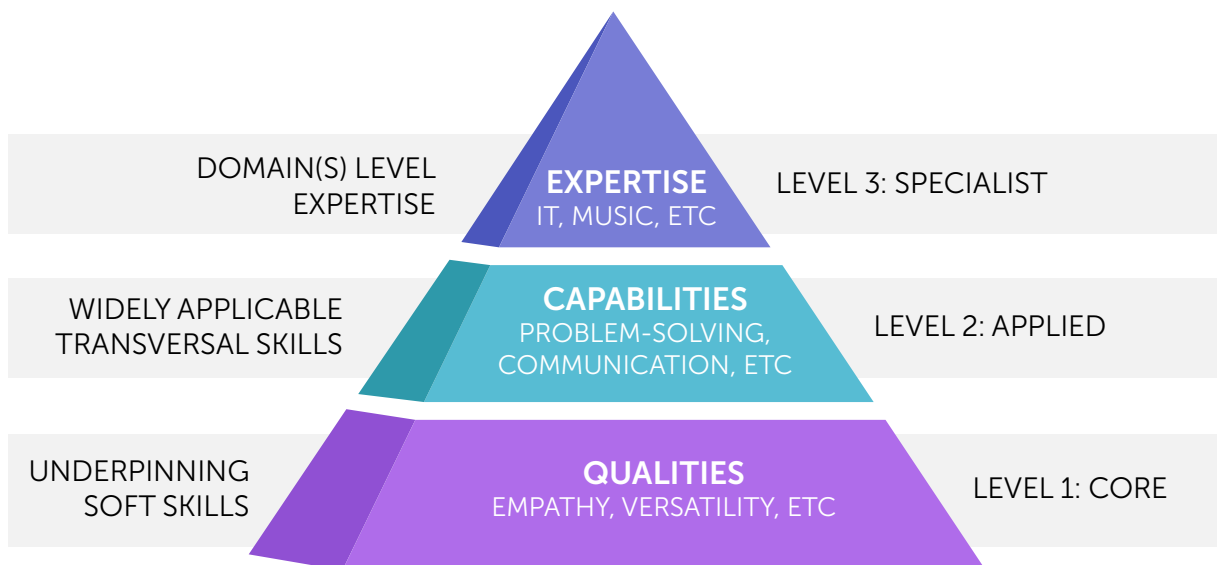


Figure 12: Conceptual Framework for Skills in the 21st Century, S. Whitemore 2017



Benefits of core transversal competencies and costs of not developing them

The more highly developed our transversal skills are, the more highly-evolved humans we become, when we are equipped to deploy our advanced cognitive and technical skills with the fabric of well-honed transversal competencies. **As the conceptual framework above shows, transversal skills are the foundation, the bedrock for the considered and effective application of any cognitive or technical knowledge or skill.** When cognitive or technical knowledge or skills are deployed without key transversal competencies, the results can range from ineffective (e.g. didactic one-way teaching to learners expecting engagement) to extremely damaging (e.g. socio-economic impact of partisan political use and manipulation of personal data).

A well-functioning society depends on the effective integrated application of transversal competencies.

While it is difficult to translate their economic impact into quantitative or financial terms, a 2015 UK study concluded that soft skills are worth £88 billion¹ to the UK economy alone.

This figure is projected to rise as intelligent machines take over many repetitive tasks and as service and experience industries increase further their market dominance in the Fourth Industrial Revolution.

Transversal qualities are the basis for values, for a more inclusive society, for less bigotry, racism and discrimination, and for dealing with problems like immigration and demographic change, not only in narrow economic terms, but also in social and ethical terms, and with a systemic perspective, with a big picture view.

Transversal competencies are not just about the future, but also about the here and now. They are as relevant for older people as they are for young people. It is not good enough to create exciting new initiatives just to train young people when society's opportunities, problems, resistance to change, and stifled ideas are manifest in older people too. In countries undergoing major demographic change because the birth rate is low or declining (eg Italy and Germany), in contrast to the burgeoning youth in Africa and parts of Asia, it is even more vital to empower, educate and upskill older people too, harnessing their experience, so they can contribute to positive change, and can compete in the global economy.

¹ <https://www.cips.org/en/Supply-Management/News/2015/January/Soft-skills-worth-88-billion-to-UK-economy/>



How and where do we learn and recognise these core competencies?

How can we encourage and empower people in work and life to develop soft skills and transversal qualities? How do we help them develop the autonomy and independent thinking through self-directed learning that is essential for negotiating the globalised digital society and economy? Many of the International Organisations focus their attention on the inculcation of transversal competencies in children and young people as part of education process (P21 Group, World Economic Forum), but the reality is that it is equally important that people of all ages continue to develop their transversal competencies, qualities and capabilities.

We have seen throughout this analysis how the same transversal competencies being called for within the education process are also the key differentiators in personal and organisational work contexts. Therefore, the sorts of approaches the WEF recommends in the diagram below – such as **game-playing, fostering and nurturing relationships, feeding curiosity and allowing discovery, breaking learning into smaller, bite-sized pieces** (given our busy lives and the competing de-mands on our time), **providing challenges, developing a growth mindset (personal growth rather than economic growth)** – are all eminently applicable to training and development with businesses and other organisations.



Figure 13: World Economic Forum, New Vision for Education 2016

It is not within the scope of this paper, but assessment of transversal competencies is already a reality (OECD PISA and PIACC), and as soft skills are integrated into school and university curricula, it will become increasingly important. For that purpose, a logical taxonomy of transversal competencies is needed (as distinct from a conceptual framework). For example a UNESCO report on Assessment of Transversal Competencies, focussing on policy and practice in the Asia-Pacific region, provides a very useful taxonomy, dividing transversal competencies into six areas, such as Intrapersonal Skills, Critical and Innovative thinking:

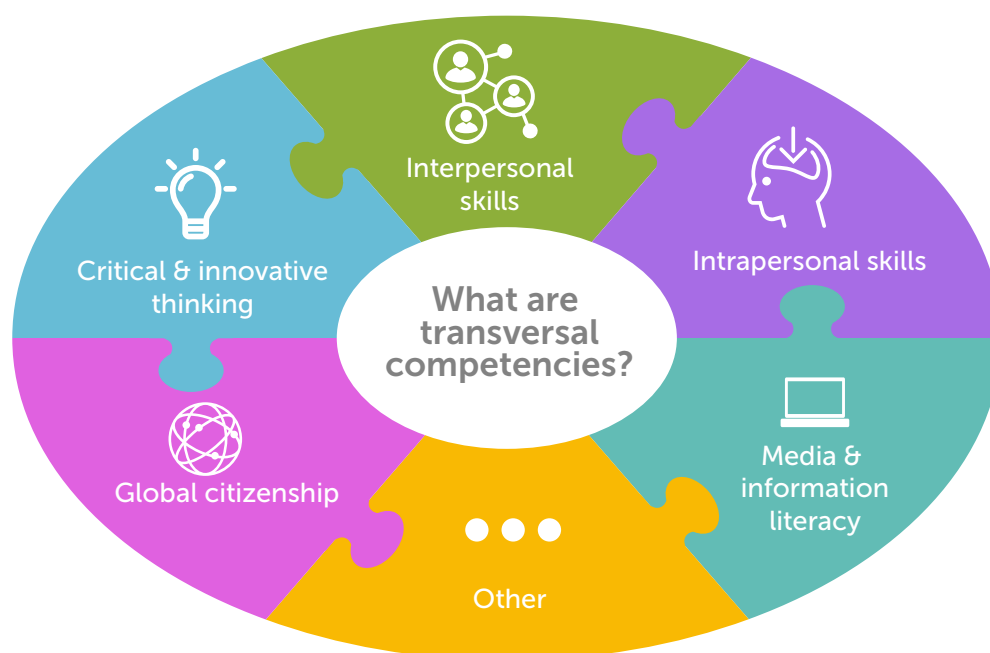


Figure 14: UNESCO, *Assessment of Transversal Competencies: Policy and Practice in the Asia-Pacific Region*, 2016

Transversal competencies or soft skills are now well recognised across the globe as essential in work and life. However, their importance has increased exponentially because of the accelerated rate of change in society that we are experiencing today globally, in particular the transformative and all-pervasive impact of digital technology and the internet, combined with the effects of globalisation.

Traditional education, which focuses on knowledge, cognitive and technical skills, often in a pedagogic model which presupposes a receptive and passive mode in the learner, **has not been able to keep pace with this multi-faceted transformation in information, communication and global connectivity**, so transversal competencies do not generally form part of the core curriculum in formal education, although innovative approaches to learning¹ worldwide at all levels are rapidly increasing in response to this.

¹ Italian universities: http://www2.crui.it/crui/magnifici_incontri_crui_2018/Tav4B%20-%20Competenze%20Crediti%20Certificazioni.pdf ; Australian schools: <https://www.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/>

A 2014 McKinsey Report² identified a systemic disconnect between the worlds of education and employment and found that graduates are often unprepared for the demands of work because, generally, traditional education focuses on cognitive knowledge and skills.

At the 2017 web summit in Lisbon, Dr Mmantsetse Marope of UNESCO noted: “Education systems have to be lifelong learning systems themselves. We need education systems to produce learners who can change the context for the better. But many education systems are stuck in the 20th century – or even earlier. They are stuck in teaching the 3 ‘R’s and subjects for their own sake”.

How do we therefore develop, inculcate, teach and learn these global competences in a joined up lifelong learning process? Integrating the learning of transversal competencies into formal education only would be exclusive, especially as the world of work and professions, is crying out for these skills, as in all spheres of life.

Can self-directed eLearning help with this challenge if we integrate it into people’s working lives, in an enjoyable, human, manageable and engaging way?

According to the OECD, a competence is by its very nature a “multidimensional capacity” – and this paper has demonstrated that. Multi-dimensional capacities require multidimensional modes of learning to develop and apply; they need multiple intelligences stimulated by multimedia learning objects in order to exercise and evidence the different transversal competencies in different ways and contexts. Given that transversal competencies are qualities – attributes, aptitudes and attitudes – and often embedded in one’s personality, interactive learning that involves the individual, the personality, is essential.

²<http://egdcfoundation.org/work/assets/McKinsey-Education-to-Employment-Europe.pdf>

About skilla



"Winner of Le Fonti Awards, skilla is an innovative, dynamic eLearning company, the leading provider in Italy, with a portfolio of multinational clients and a fast-growing presence globally. We offer imaginative solutions for continuous, practical and engaging education. We innovate corporate training and internal communication.

Skilla is becoming internationally recognised for its combination of passion, scientific precision and innovation in eLearning. Founded in 2001 by Franco Amicucci, based on his many years' experience in training management, skilla is a family company owned by the Amicucci family.

At the same time, we are a ground-breaking, dynamic and modern organisation, with young, well-qualified staff (with doctorates and masters), who have a high level of specialisation in educational methods, course development, graphic design, instructional design, IT and project management. To continually refresh and improve our educational content and methods, we deploy about 150 expert consultants, 7 PhDs, active partnerships with several universities and a Scientific Committee involving 14 Italian and international universities.

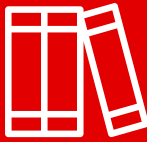
Skilla MULTIMEDIA TRAINING PILLS

Multimedia Training Pills are highly interactive bite-sized courses designed to be used in a variety of ways - e-learning, classroom and blended - and can be accessed on multiple devices. Each Pill is engaging, effective and structured around our unique pedagogical method.

Our scientifically backed method stimulates different learning styles, challenges traditional training approaches, empowers learners and enables positive organisational advances.

Our skillalibrary has over 250 courses available in English, German and Italian, and covers a comprehensive range of soft skills and business, leadership and managerial skills. The Pills can 'stand-alone' or be combined and we will help you customise the perfect package guaranteed to engage, entertain and deliver results, fast.

We also provide a range of Learning Paths, enriched with online content, self-assessments, games and contests. We have a specific Learning Path for Essential Skills for Future Proofing the Workforce.



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