

**DIRECTORATE FOR EDUCATION AND SKILLS
EDUCATION POLICY COMMITTEE**

Cancels & replaces the same document of 2 May 2017

**FUTURE OF EDUCATION AND SKILLS 2030: REFLECTIONS ON
TRANSFORMATIVE COMPETENCIES 2030**

**16-18 May 2017
Lisbon, Portugal**

The IWG members are invited to:

- *NOTE the conceptual making and the theoretical underpinnings to support the OECD learning framework 2030.*

Contact: Miho TAGUMA, miho.taguma@oecd.org and Lars Barteit, lars.barteit@oecd.org

JT03446240

Future of Education and Skills 2030: Reflections on transformative competencies 2030

The project seeks views and reflections from academics and thought leaders from various disciplines to ensure the multi-disciplinary nature of the OECD learning framework 2030, incorporating latest research, conceptual rigor, and emerging thoughts.

The following experts are contributing to the refinement of the OECD learning framework 2030 by enhancing the conceptual and theoretical underpinnings of the framework. This document should be read as part of the background materials for the framework paper [[EDU/EDPC\(2017\)16](#)]. The papers submitted by experts are still in an early draft form and will be finalised after the IWG meeting, considering the comments made by the IWG participants.

1. OECD 2030 Learning Framework: new methods of inquiry by Ms. Franziska FELDER
2. OECD Transformative Competencies 2030: Creating New Value by Mr. A.C. GRAYLING
3. OECD Transformative Competencies 2030: Taking Responsibility by Mr. Laurence STEINBERG
4. OECD Transformative Competencies 2030: Coping with tensions, dilemmas by Mr. Tom BENTLEY

1. Education 2030: Why new methods of inquiry are needed to bring educational policy to full life, and why philosophy is essential in that process

Dr. Franziska Felder (University of New South Wales, Sydney)

1.1. Background

1. Education 2030 sets out a new vision for education over the coming years. The most important values that drive this vision are inclusion and equality. Negatively speaking, Education 2030 seeks to address different forms of exclusion, marginalisation, discrimination and inequalities, in the access to and in the process of education as well as the learning outcomes. Its positive appeal is to establish an “inclusive and equitable quality education and lifelong learning for all.”

2. In order to implement such a broad and ambitious agenda, as well as monitor and review their success in a transparent and accessible way, based on evidence-based policies, it is important to clarify what we are aiming at in the first place. For instance, when does a school system provide and ensure equality and inclusion? And when or under what circumstances respectively are individuals included and treated as equals? These questions feed back to the basic normative questions of what equality and inclusion mean in the first place. These questions are partly independent from their application in education. This means, whereas education is a very important battle field for inclusion and equality and a means to transform not only individuals, but also societies, the value of inclusion and equality are independent from their application in specific fields. If we accept this, it means that we need to choose a top-down approach in terms of the inquiry into the values of equality and inclusion themselves. So, rather than to start directly with how educational systems are built and then confront values such as equality or inclusion with the institutional structure and constraints of current educational systems, we need to ask differently: What do the values of equality and inclusion entail, and why should an educational system be both ensure equality and inclusion? The difference with such an approach lies in the fact that it opens up new possibilities and sheds light on dark spots. For instance, we can now ask in what respects the educational system is uniquely able to ensure equality and inclusion, and in what respects (maybe) other systems (such as families or the civil society) are more important and more likely to ensure both.

3. Additionally, if these values are to inspire public policy, and if they are meant to be based on evidence-based policy, they need to be based on new methods of enquiry: ways that bring them closer to public policy and empirical research. Such a view is rather challenging, both for public policy and empirical research on the one hand, and for philosophical inquiry on the other hand. But what is the challenge?

1.2. The challenge for an approach that brings public policy, empirical research and philosophical theory closer together

4. On the one hand, although public policy is mostly aware of the normative underpinnings of their visions, their main interests often lies in negotiating, and then implementing, monitoring and reviewing the success of the adopted policy on a political level. The research designs adopted by empirical research mostly involve that phenomena are observable and measurable. This implies that they are clearly identified and measurable. With operationalisation, a formerly fuzzy concept is defined in order to make it clearly distinguishable, measurable, and understandable in terms of empirical observation. This process often stands in stark contrast to comprehensive, holistic and evaluative normative concepts that resist the need for distinction into clearly distinguishable elements and empirical measurement.

5. On the other hand, normative concepts like inclusion and equality resist measurement, precisely because of their evaluative content. Normative philosophical concepts try to conceive a phenomenon in its entirety, often with reference to other values and norms (in the case of inclusion and equality for instance: freedom or recognition). Also, these concepts are often embedded in broader normative discussions, for example a justice discourse. This is what makes these concepts multileveled and broad. Also, normative concepts often aspire to have universal value and cross-cultural meaning, at least meaning beyond very specific contexts. For instance, philosophies of equality, even if they take up examples of inequality in schools, often aspire to be more than a theory about inequality of schools or schooling. Instead, they aspire to say something about inequality or equality in general, where school could be one example among others.

6. If, however, we want to combine or – probably more accurately – relate public policy with empirical research (e.g. concerning outcomes and success) as well as normative or philosophical inquiry that needs to be done in the first place, we have to bring them closer together.

7. Rather than treating inclusion and equality from an ideal standpoint, I argue we should see them from a nonideal, situated standpoint. Such theories are developed e.g. by Jonathan Wolff, Elizabeth Anderson or David Miller. They are also common among communitarian and Aristotelian thinkers such as Michael Walzer or – although more implicitly – Michael Sandel, Alasdair MacIntyre and Charles Taylor. Nonideal theories usually start from a ‘middle ground’, taking into account how policy works, how institutions are built in modern societies, the empirical knowledge we currently have (e.g. in what circumstances people thrive and lead a good life) and normative assumptions thereof. A ‘middle ground’ also means that all sides are open for examination and critical revision, including philosophical assumptions and theories. It takes, for instance, that philosophical theories have to walk around and be built around humans in the sense that they have to take into account human motivations and human possibilities. These motivations and possibilities both limit and enable moral actions in real life. It includes also that normative theories need to adapt to a certain degree if new knowledge is available.

1.3. The basic outset of a non-ideal philosophical theory: starting from a middle ground

8. As its name suggests, a non-ideal approach to philosophical theory is critical of ‘ideal theories’ that usually bring about or defend principles and from there pace their way down to public policy. A typical example for an ideal approach would be theories in the tradition of Kant (e.g. Rawls), or different strands of Utilitarianism (e.g. Singer, McMahan). Such philosophical theories usually work their way from top to bottom down (public policy). They represent abstract ideas in the sense that they abstract from particularities or specific contexts. As such, they usually develop specific methods to bring out the principles, usually through thought experiments or specific methodologies such as in Rawls’ “veil of ignorance”. Figuratively speaking, such ideal theories take the following way: Given that we live in a society where we cannot build totally new homes and houses (at least not in its entirety), we nevertheless can make our way through the imperfections of institutions (such as schools) and human behaviour. The moral claim behind it is that we should make our institutions resemble the blueprint to the closest degree possible.

9. What I try to defend – and what is partly meant by ‘middle ground’ – is different from the above mentioned, ideal approaches in several respects. First, I take it that we should start what we ‘have at hand’ (e.g. the UNCRPD, public policy regarding education, empirical knowledge about what works best and so on) and work our way from there. As already said, it aims at building a “real world political theory” or a “theory of the second best” (Wolff, 2015, p. 361), or sometimes also called a “nonideal theory” (Anderson, 2010).

10. Second, in avoiding a hierarchical shift from top (philosophical theory) to bottom (public policy or practice), this approach takes it that – although distinct in many respects – philosophical theory relies on empirical and factual assumptions about the social world – and public policy obviously relies on philosophical values to a large degree. It is a bidirectional relationship, and it has to be if we want to establish a theory that is of use for real world politics. This does not deny epistemological differences between policy or empirical research on the one hand and theory (philosophical or other) on the other hand. Rather, it assumes that in order to build a ‘theory of the second best’, we need to combine empirical knowledge, ‘facts about the world’ (and much more) with sound philosophical and theoretical reasoning. The reasons for this are twofold: First, philosophical and theoretical understanding has to be focused on a particular concrete situation or a problem in order to make a genuine contribution to practical affairs. If in some cases the problem or injustice is very obvious and uncontroversial, there appears not much to be done for philosophy, for instance. It is a matter for public policy to recognise this problem and for social sciences to show ways to improve it. It seems to me that – apart from some uncontroversial aspects – that the values of inclusion and equality do not belong in this category. Obviously, there are some aspects of exclusion or inequality – severe maltreatment, discrimination, neglect and so on – that stipulate much of the claim and the struggle for inclusion and equality. But this is not all about what can be said about inclusion and equality, just being the absence or the other side of the coin of exclusion and inequality. More important, when it comes to the public policy of education, we face different problems, dilemmas and challenges and it is important to ask which one of these e.g. appear as problems, but are dilemmas (and vice versa), which ones reflect fundamental problems (or challenges) and which ones can be seen as transitional and thus can be seen as a stage of development from a segregated to an inclusive school system, for instance.

11. The method of adapting – or rather developing – such a philosophical theory of inclusion and equality is unorthodox. A ‘real world political theory’ or a ‘theory of the second best’ is usually regarded as stemming from ideal theory. And in fact, this is the way how theorising in education is often done. It takes that we first have to know what an ideally just society would look like and then to identify the ways our current society is failing. It takes that we first have to have principles for in ideal society, so that we can work out how to get from there to change our current society. But, as Elizabeth Anderson claims, this misunderstands how normative thinking works: “Unreflective habits guide most of our activity. We are not jarred into critical thinking about our conduct until we confront a problem that stops us from carrying on unreflectively. We recognise the existence of a problem before we have any idea of what would be best or most just. Nor do we need to know what is ideal in order to improve. Knowledge of the better does not require knowledge of the best. Figuring out how to address a just claim on our conduct now does not require knowing what system of principles of conduct would settle all possible claims on our conduct in all possible worlds, or in the best of all possible worlds (Anderson, 2010, p. 30). In saying that we do not require knowledge of the best in order to address injustice, we assume to start with the real world problem. We take it that we do not have to know first what inclusion or equality exactly mean (at least not at the very beginning of our inquiry). The problem we face is there and obvious (although not yet analysed in depth).

1.4. Consequences for theorising in education: the example of inclusion

12. What consequences does this have for theorising? In my work, for instance, I start with a broad and intuitive understanding of inclusion, claiming that inclusion rests on two assumptions: first, it is about sharing projects or intentions; and secondly, it is about recognising others as having legitimate claims of being a part of these projects or intentions. The reason for this starting point is diverse:

13. First, I get it that we have an intuitive understanding of what inclusion means and this intuitive understanding is far from being naive, useless, flawed or ideological, quite the contrary. This intuitive understanding is especially clear from a negative point of view: We have the feeling that it is wrong if people are excluded, marginalised, not treated as equals or seen as full members of their community, and so on.

14. Second, for education to be inclusive arguably has wider implications than just institutional and spatial rearrangement of students. It is, in other words, more and something else than just being together in a classroom. A reconstruction of inclusive education therefore has to take account of these wider implications of the means and goals of education. In order to do that, education itself has to be situated within a setting of different social goods.

15. Third, there are aspects of inclusion that do not show themselves or at least only in a different way if we adapt them to the context of compulsory schooling of children and youth. An example of this is the notion of freedom. Freedom arguably is important for inclusion, but the way it is articulated and even possible is very different in the context of schooling than elsewhere, for two reasons: Firstly, because the individual’s autonomy for deliberation is only developing; we cannot expect children to make completely autonomous choices; secondly, compulsory schooling limits the degrees of free choice due to institutional constraints. Teachers and students inhabit specific social roles, with different duties and rights. Students have little or no formal power in the school system. In many respects the role of a student resembles that of an inmate in a total institution (Goffman), e.g. because of controlled residence over a long period of time or via the segregation that

takes place. “With little or no formal power, students are excluded from participating in most decisions that affect their fate in the system. When students are frustrated by what is being done or said, there are few channels or forums available to them for confronting teachers and administrators. Moreover, students have much to risk by openly differing with educators, and even if differences are raised, they have little clout with which to force educators to consider their concerns seriously” (Jamieson and Thomas, 1974, p. 323). Although we can expect schools to have changed in that respect since the 1980’s, the basic assumption still holds true and has to be taken into account when we think about intersubjective relationships within schools. If we claim, for instance, that inclusive schools need to be democratic (a claim put forward, for instance, over a hundred years ago by the philosopher and educator John Dewey), we have to keep in mind that schools are governed by a hierarchy of authorities not appointed by the pupils. In order to understand the specific gestalt of freedom in place, we have to take into account that we speak – among other things – of children in a compulsory school setting.

References

- Anderson, E. (2010), *The Imperative of Integration*, Princeton: Princeton University Press.
- Jamieson, D. W. and K. W. Thomas (1974), “Power and Conflict in the Student-Teacher Relationship”, *The Journal of Applied Behavioral Science*, Vol. 10/3, pp. 321-336.
- MacIntyre, A. (2007), *After Virtue: A Study in Moral Theory*, Notre Dame: University of Notre Dame Press, Third Edition.
- Thomas, G. (2000), “Doing injustice to inclusion: a response to John Wilson”, *European Journal of Special Needs Education* Vol. 15/3, pp. 307-310.
- Walzer, M. (1983), *Spheres of Justice*, New York: Basic Books.
- Williams, B. (1985), *Ethics and the Limits of Philosophy*, Cambridge MA: Harvard University Press.
- Wilson, J. (1999), “Some Conceptual Difficulties about 'Inclusion'”, *Support for Learning* Vol 14/3, pp. 110-112.
- Wolff, J. (2015), “Political Philosophy and the Real World of the Welfare State”, *Journal of Applied Philosophy* Vol. 32/4, pp. 360-372.

2. Creating New Value

Professor A.C. Grayling (New College of the Humanities)

16. The concepts of ‘creation’ and ‘novelty’ in the objective of ‘Creating New Value’ are as significant as the concept of value itself. Whereas we understand what a value, or something valuable, is – namely: an entity, situation or process with intrinsic positive worth, desirable for the benefits it confers – the concepts of creativity and novelty are less well defined, and generally are recognised post facto rather than being readily specifiable in advance.

17. Nevertheless we can identify the cluster of concepts to which each belongs, for example: creativity as a process connotes creating, making, bringing into being, formulating; novelty as a characteristic of outcomes connotes what is innovative, fresh, original, different, unprecedented.

18. Accordingly, the question is one about the conditions that promote creativity and innovation, given that recognising whether something is creative and innovative waits on results. These conditions are of two kinds: those that relate to the individual creator and innovator, and those that relate to the circumstances of the process of creating and innovating.

19. To encourage creativity one must liberate people from traditional structures and requirements. In education this means allowing individuals to forge pathways to learning, understanding, and the mastery of skills and techniques, according to their own personal bent for doing so, and in ways that emphasise experimentation and trial and error. In old-fashioned approaches the instruments of grading, reward and punishment for accomplishment at set tasks had (and where they still exist, which is in too many places, have) inhibitory effects, making learners cleave to the traditional and formulaic in order to ‘do well.’ Escape from grading, assessment, and traditional stereotyping of ‘good educational outcomes’ is the first step, and a very important one, towards freeing minds to be creative. Guiding and mentoring the process will be positive if it does not present itself as imposing judgments of right and wrong. Individuals have to become good self-evaluators in order to be fully creative.

20. To encourage innovation one must give license to experiment, to fail, to try different approaches, to be daring, to take risks, without a judgmental audience but with the resources and encouragement to try and try again. A model is provided by the psychological environment in which very small children learnt the properties of items in their physical environment, and what is required to manipulate them.

21. Project-based development of new ideas, new solutions, new approaches makes the individuals engaged in the process more adaptable, critically observant, and resilient. Adaptability comes from the freedom to try different routes to a goal. Critical observation comes from having responsibility for decisions about what to try, making the individual more attentive to what is successful and what is not. Resilience comes from repeating the effort to make something or solve a problem by a variety of routes, not yielding to frustration or failure but working through the problem to a success or a compromise.

22. The essence of creating new value is being entrepreneurial in the general sense (not just the business sense): that is, ready to venture, to try, without anxiety about failure, but with preparedness to see it as a learning opportunity and the first step in a fresh start.

23. From the experience of being creative and seeking to innovate, individuals come to have an enhanced sense of self-worth, their activities – because individual responsibility means they ‘own’ their ideas and the effort put into realising them – gives an added sense of purpose not just to the projects in hand but to life itself: to be a doer, a maker, a creator of novelty, someone who is adding to the stock of possibilities in the world, is a powerfully affirmative experience.

24. The objectives of such activity, in light of the rapidly advancing new technologies in the world and the promises and risks they imply, require that the relationship people have with those technologies and what they can be used to do, has implications for how we understand being human, what life is for, and what new boundaries have to be drawn in ethical terms about the use and extent of innovative extensions and applications of these technologies. A conversation and negotiation about these matters among innovators themselves as well as in society in general is a necessary context; a narrative of value, of purpose, as a framework for embracing innovation and directing it towards productive and progressive ends is the goal here.

25. ‘Creating new value’ is thus about creating new creators and innovators, and about creating new knowledge, new insights, new ideas, new techniques, technologies and strategies, new solutions to both old and new problems, and a fresh vision of what is sustainable, resilient and freshly possible in society and the economy. The benefits to individuals as living lives of enhanced self-worth, to society as being more adaptable and better equipped, and to the economy as promoting sustainable productivity and the growth of wealth, are all implicated in the multifaceted idea of the value this generated.

26. Education is the key in value-creation, especially in the form envisaged in 4 and 5 above. The educational process should seek to enable individuals to become creators and lifelong learners and problem-solvers, with skills as the real take-home benefit of education, given that information is readily accessible at need in multiple loci – a far cry from the situation, before the mature internet, when information had to be downloaded from teachers’ heads to students’ heads in the classroom setting.

27. An essential accompaniment to the creativity-enhancing education envisaged is the need for ethical and value-sensitive contextualisation of the entities and processes created. Thinking about what they would mean, for good and possible ill, in the lived context of human lives and society at large is the final step in the value component of ‘creating value’ through the acquired competencies of creativity and innovation.

3. “Taking Responsibility” as a Transformative Competency in the OECD 2030 Learning Framework

Professor Laurence Steinberg (Temple University)

3.1. Introduction

28. The focus of this paper is on the application of the OECD framework to policies and practices affecting adolescents, defined for purposes of this paper as the period from age 10 to age 20. Many of the key constructs contained in the current report are more applicable to adolescence than to earlier periods of development. A main point of this paper is to encourage you to prioritise the development of self-regulation as an essential component of the development of responsibility.

29. Advances in developmental neuroscience are changing the ways in which scientists, practitioners, and policymakers view adolescence (Steinberg, 2014). Historically, this developmental epoch has been viewed as an inherently problematic period, and social investments in adolescence have been aimed largely at minimising the prevalence of various types of problems, including crime, violence, substance abuse, unemployment, and risky sexual behaviour. And although these maladies afflict large numbers of young people in the developed world, an exclusive focus on problem prevention overlooks the tremendous potential that the period holds for positive development. As a result of insights gained from the study of brain development during adolescence, experts are now beginning to see this period as a time of opportunity, and not just vulnerability. Three specific conclusions from developmental neuroscience have informed this shift in orientation.

30. First, it is now clear that brain maturation continues far later in development than had previously been thought (Casey et al., 2005; Hedman et al., 2012). Before the widespread availability of brain imaging technology, most importantly, functional Magnetic Resonance Imaging (fMRI) during the late 1990s, it had been assumed that most of the important aspects of brain development had taken place by the end of childhood, because by age 10 the brain has reached its adult size. During that past two decades, however, considerable research has shown that the internal structure and functioning of the brain continue to mature throughout the teen years, and well into the early 20s.

31. Second, whereas it has long been recognised that the brain is especially malleable, or “plastic,” during the first five years of life—a recognition that has sparked considerable investment in educational and social programs aimed at fostering healthy development during early childhood—only very recently have scientists learned that a second burst of brain plasticity likely takes place during adolescence (Spear and Silvery, 2016). This plasticity appears to be sparked by the onset of puberty and by the impact of pubertal hormones on the brain. Studies also suggest a marked decline in brain plasticity during the transition from adolescence into adulthood, although the causes and underlying mechanism of this diminution of malleability are not well understood (Lillard and Erisir, 2011). Nevertheless, it is reasonable to posit that adolescence represents a “last best chance” for social institutions to impact psychological development and mental health in a deep and lasting fashion. It is crucial that policymakers understand that investing in early childhood, while undoubtedly valuable, is not an inoculation.

32. Finally, it is clear that the brain regions and systems that are especially plastic during adolescence are those that are implicated in the development of self-regulation which is a central aspect of the development of responsibility (Leshem, 2016). These systems include the prefrontal cortex and its connections to other cortical and subcortical areas. Maturation of the prefrontal cortex is associated with the development of many capacities that are essential to the development of self-regulation, including the ability to plan ahead, consider the consequences of one's decisions, weigh risk and reward, and control one's impulses and emotions. The fact that brain systems important for the development of responsibility remain malleable throughout adolescence provides a strong rationale for supporting educational interventions designed to foster this aspect of development.

3.2. The Importance of “Taking Responsibility” for Future Well-Being

33. Among the many central developmental tasks of adolescence—defined roughly as the period from age 10 through age 20—developing a sense of responsibility is one of the most important for the future success of individuals and the societies in which they live (Steinberg, 2014). It is essential that this notion be preserved in the OECD 2030 Framework.

34. Although the OECD 2030 framework refers specifically to “taking responsibility,” in the sense of accepting one's duties as a member of society, this is only one component of what developmental psychologists have in mind when they point to the importance of the development of responsibility in adolescence. In addition to taking responsibility for others or for society, becoming a responsible person also implies being able to manage oneself. Thus, while I agree with the identification of “taking responsibility” as a transformative competency, I suggest that this term be rephrased as “Developing Responsibility,” in order to broaden its definition. I do not think this is a departure at all from the thinking outlined in the current draft of the document (see, for example, paragraph #26). But I do think that this relabeling makes the construct more easily understood. If this were done, it would then be possible to discuss three interrelated aspects of responsibility, as suggested by Greenberger (Greenberger and Soernson, 1974) nearly 50 years ago in her theory of “psychosocial maturity”: personal responsibility (i.e., self-reliance, self-regulation, self-efficacy, determination, perseverance); interpersonal responsibility (accepting responsibility for the welfare of others); and social responsibility (accepting responsibility for the well-being of society's institutions, the protection of the environment, etc.).

35. My suggestion that you relabel “Taking Responsibility” as “Developing Responsibility” also derives from a growing body of research pointing to the importance of self-governance, or self-regulation, as it is often called, as crucial not only for success in higher education and in the labour force, but for well-being more generally (Steinberg, 2014). Dozens of scientific studies point to self-regulation as perhaps the single most robust predictor of success, happiness, and psychological well-being, as well as the absence of emotional and behavioural problems, during adolescence and young adulthood. Indeed, mature self-regulation is a prerequisite for the development of many of the other competences described in the OECD learning framework. To my mind, the term, “Taking Responsibility,” does not convey this important aspect of what we mean by “responsible.” “Taking Responsibility” implies what I have labelled as interpersonal responsibility and social responsibility, but it does not obviously suggest traits like self-regulation and other aspects of personal responsibility.

36. The development of responsibility is often referred to as a “noncognitive skill.” This widely-used term is a bit of a misnomer, though, for several reasons (Fickel, 2015). First, some aspects of responsibility are clearly cognitive in nature; these include, for example, the development of the ability to think systematically about the future and formulate plans, as well as the ability to assess and understand other people’s points of view, both of which are fundamental to being able to “take responsibility” for the welfare of others and one’s community. My preference is to refer to these characteristics as “non-academic,” to distinguish them from those that comprise the traditional subject areas on which schools focus (e.g., mathematics, history, language, etc.). Second, it is not entirely correct to refer to the ability to take responsibility as a “skill” that can be taught. Responsibility is better thought of as a capacity that is cultivated than as a competence that is learned.

37. Developing a strong sense of responsibility is critical to success in school and, subsequently, in the workplace. Success in these contexts demands many things—a strong motivation to succeed, self-confidence, commitment to completing a task, a belief in the power of hard work, and a focus on the future rather than the present. But at its core, more than any other capacity, success requires self-regulation. The ability to control our emotions, thoughts, and behaviours is what enables us to stay focused, especially when things get difficult, unpleasant, or tedious. We rely on self-regulation to stop our minds from wandering, to force ourselves to push a little more even though we’re tired, and to keep still when we’d rather be moving around. Self-regulation is what separates the determined—and the successful—from the insecure, the distractible, and the easily discouraged.

38. Self-regulation and the traits it influences, like determination, comprise one of the strongest predictors of many different types of success: achievement in school, success at work, more satisfying friendships and romantic relationships, and better physical and mental health. People who score high on measures of self-regulation complete more years of school, earn more money and have higher-status jobs, and are more likely to stay happily married. People who score low on these measures are more likely to get into trouble with the law and to suffer from a range of medical and psychological problems, including heart disease, obesity, depression, anxiety, and substance abuse.

39. People who can control their feelings also are less likely to fly off the handle, which makes them less inclined to get into fights and arguments, less prone to emotional meltdowns, and easier to get along with—all good qualities to have in school, on the job, and at home. This, in turn, gets them better grades, bigger promotions, and more smiles from family members. Good self-regulators are also less likely to give in to temptation, and are therefore less likely to overeat, develop addictions, commit crimes, and spend beyond their means. As a consequence, they are less likely to become ill, be arrested, or fall into financial difficulty. And they’re better at resisting distraction, focusing attention, and stopping themselves from obsessing over things they can’t do anything about. This allows them to be more productive, more able to make and carry out plans, and less likely to fall into a funk they can’t pull themselves out of.

40. The teenage years are a crucial time for developing self-regulation and for putting it into practice, since secondary schooling demands more independence, initiative, and self-reliance—when students are expected to work by themselves on assignments that take a long time to complete, like a term paper that’s due at the end of a semester. In the primary grades, teachers and parents often help students who have weaker self-control stay focused. This support wanes as students get older, because we expect older children to be more independent.

3.3. Balancing “Taking Responsibility” with Other Transformative Competencies

41. In the current 2030 Framework, “Taking Responsibility” is one of three transformative competencies, along with “Creating New Value” and “Coping With Tensions, Dilemmas, Tradeoffs, and Contradictions.” I see no conflict among these three competencies nor any reason to be concerned about their balance or relative importance. Indeed, in my view, the development of responsibility is a prerequisite to both of the other two competencies. Rather than asking how these competencies might be best balanced, educators should be encouraged to consider how they interact with and facilitate each other.

42. With respect to “Creating New Value,” because elements of personal responsibility such as self-regulation or perseverance are essential for success in school and in the labour force (more important, for instance, than intelligence), it is hard to see how a young person could develop the potential to create new value without having a strong sense of personal responsibility, because without capacities like perseverance and determination, it would not be possible for the individual to acquire the necessary knowledge and skills to be creative and innovative; in today’s world, much of this knowledge and many of these skills take a long time to acquire, which increases the importance of self-regulation. Additionally, the capacity to consider the future consequences of one’s actions, to evaluate risk and reward, and to accept responsibility for the quality of one’s work products, among other aspects of personal responsibility, are essential to creativity and problem solving.

43. Developing responsibility is also essential for “Coping With Tensions, Dilemmas, Trade-offs, and Contradictions,” especially with respect to the development of self-regulation. One common response to confronting tensions, dilemmas, trade-offs, and contradictions is to react impulsively in order to avoid dealing with the challenge inherent in reconciling conflicting points of view or especially complicated findings. One important by-product of improved self-control is a strengthening of one’s ability to resist making impulsive decisions, prematurely terminating debate and discussion, or casting a nuanced problem in black and white terms. Encouraging the development of perseverance, especially in the face of obstacles, will ultimately help young people cope with the challenges inherent in thinking through the sorts of complex problems likely to arise over time.

3.4. Concepts in EDU EDPC (2016) Closely Related to “Taking Responsibility”

44. The five most closely related constructs, in my view, are as follows:

1. **Self-control.** At the core of personal responsibility is the capacity for self-regulation, which is the ability to exert control over one’s thoughts, feelings, and actions.

2. **Self-efficacy.** Part of becoming a responsible person is acquiring the willingness to be held accountable for one’s actions, which, during adolescence, often involves being resistant to peer pressure. Being able to resist peer pressure requires confidence, or a sense of self-efficacy, as well as the ability to regulate one’s emotions.
3. **Responsibility.** It isn’t entirely clear what is meant by this in the report (indeed, it is confusing to have an underlying phenomenon that has the same label as one of the transformative competencies), but to the extent that the use of the word here refers to locus of control, it is very close to self-efficacy, and related to “Taking Responsibility” for the same reasons.
4. **Problem Solving.** One aspect of the development of responsibility is the ability to distinguish between short-term and long-term consequences, and to take both sets into account when making decisions or solving problems. Self-regulation is critical for resisting temptations inherent in easy, short-term solutions.
5. **Adaptability.** Being flexible, especially in the face of obstacles, is part of acting responsibly, because it depends on the ability to step back from the moment, assess one’s situation, and develop a new course of action. This requires a good deal of self-control.

3.5. Conclusion

45. Overall, the OECD conceptual framework is consistent with recent developments in the scientific study of adolescence. This is especially reflected in two of the framework’s emphases. First, the centrality of well-being as part of the “growth narrative” aligns well with the shift among scholars of adolescence from a focus on problem prevention to one on the facilitation of positive development. From a public policy perspective, this change in focus logically shifts the central question from “How can we prevent young people from developing problems?” to “How can we encourage the development of positive psychological functioning?”

46. Second, the recognition that the mission of educational institutions must be broadened to include competencies and skills beyond those conventionally viewed as falling within schools’ bailiwick, which traditionally has been limited to conveying knowledge and imparting specific skills across well-known academic areas (e.g., science, mathematics, language arts, etc.). Fortunately, in addition to developing students’ knowledge, the Learning Compass includes the facilitation of a variety of cognitive, socioemotional, and physical skills as well as the cultivation of a constellation of positive attitudes and values. This expanded vision of the role of educational institutions is consistent with the view that academic development and socioemotional development are inextricably linked, and that one cannot successfully facilitate the former without simultaneously attending to the latter.

47. I believe it would be helpful to reconsider some of the distinctions that are used in describing and drawing the Learning Compass, however. In general, I think the framework is a little too focused on terminological distinctions that are tedious and that, in all likelihood, are not important to the practitioners and policymakers who comprise a large part of the document’s intended audience. Both the distinction between knowledge and skills, and that between knowledge and attitudes/values, strike me as sensible and easy to grasp, but the distinction between what the framework labels “skills” and what it labels “attitudes and values” is often murky. “Self-efficacy” and “responsibility” for example, are

located in the “attitudes and values” cluster, whereas most developmental psychologists view them as noncognitive skills (or, as I prefer to call them, non-academic capacities). It does not make sense, for instance, to classify “self control” as a skill (as is now the case) but “self-efficacy” as an attitude or value. In addition, I think there is a good deal of conceptual overlap among the traits listed in the skills and attitudes/values constellations that would be clarified by simplifying the model. It is also confusing to list “responsibility” as an attitude or value that facilitates “taking responsibility,” since it sounds tautological. Finally, many of the constructs currently labelled attitudes or values are more accurately characterised as beliefs.

48. My recommendation is that you try to narrow the list of constructs in the Learning Compass and that you merge self-efficacy, self-control, and responsibility into one specific skill labelled “self-regulation.” I believe that this would be consistent with current thinking among those who study and write about non-academic capacities that should be of concern to educational institutions. This would then leave four core attitudes/values: curiosity, adaptability, open mind-set, and growth mind-set.

References

- Casey, B. J., N. Tottenham, C. Liston and S. Durston (2005), “Imaging the developing brain: What have we learned about cognitive development?”, *Trends in Cognitive Science*, Vol. 9, pp. 104–110.
- Greenberger, E., and A. Sorensen (1974), “Toward a concept of psychosocial maturity”, *Journal of Youth and Adolescence*, Vol. 3, pp. 329-358.
- Fickel, L. (2015, May 1), “What’s in a terrible name?”, U.S. News and World Report. www.usnews.com/opinion/knowledge-bank/2015/05/01/non-cognitive-skills-are-important-but-have-a-terrible-name, (accessed online on April 28, 2016).
- Hedman A., N. van Haren, H. Schnack, R. Kahn and H. Hulshoff Pol (2012), “Human brain changes across the life span: A review of 56 longitudinal magnetic resonance imaging studies”, *Human Brain Mapping*, Vol. 33, pp. 1987-2002.
- Leshem, R. (ed.) (2016), “The adolescent brain: Its role in impulsivity and risky decision making”, *Developmental Neuropsychology*, Vol. 41/1-2 (whole issue).
- Lillard, A. and A. Erisir (2011), “Old dogs learning new tricks: Neuroplasticity beyond the juvenile period”, *Developmental Review*, Vol. 31, pp. 207–239.
- Spear, L. and M. Silveri (2016), “Special issue on the adolescent brain”, *Neuroscience and Biobehavioral Reviews*, Vol. 70, pp. 1-346.
- Steinberg, L. (2014), *Age of opportunity: Lessons from the new science of adolescence*, New York: Houghton Mifflin Harcourt.

4. Learning to thrive amidst interdependence

Coping with tensions, dilemmas and trade-offs - Transformative competencies for Education 2030

4.1. Tom Bentley

4.2. Dealing with conflict and uncertainty: importance for better lives and well-being in 2030

49. For a young person approaching adulthood in 2030, coping with tensions, dilemmas and trade-offs will be critical to their ability to survive and flourish, for several main reasons. In the world that is now emerging.

50. The world now emerging around those young people, and its global systems - economic, social, political, natural and physical - are going through an extended period of deep transition and re-orientation.

51. Many of the economic, institutional and cultural value systems that dominated different parts of the globe at the beginning of the 21st century are now facing various forms of crisis. These crises overlap and intersect with each other, provoking a wide range of possible responses and outcomes across different fields.

52. Across much of the world, there is growing consensus about the need for a long term pattern of global development which achieves social and environmental goals alongside economic growth. This dialogue fuels the search for ways to address the crises of climate change, water and biodiversity, alongside equity and sustainability within nations and across the global population. It encourages a policy focus on long term goals and structures which are integrated and holistic, supporting social, ethical and cultural values alongside material and economic outcomes.

53. However, how to achieve those goals in practice and through policy is not subject to anything like a consensus. During the same period, it has become clear that the world of the early 21st century is characterised, not by uniformity of thinking or predictability of geopolitical and institutional control, but by growing heterodoxy, uncertainty, conflict and instability in the distribution of power, opportunity and growth.

54. This is a world in which new technologies, urbanisation, education and mobility all contribute to new possibilities and qualities of life for more of the world's people. Simultaneously, however, the global structure of identities, nation-states and institutional order is fraying under the linked pressures of competition for resources and control, crises of finance, climate, unemployment, poverty, and conflicts over identity and political legitimacy.

4.2.1. Conflict and uncertainty

55. In this global macro-environment, more and more people will more frequently encounter smaller-scale situations of uncertainty, transition and conflict, across the domains of everyday life.

56. In people's lives, this plays out when work, learning, income, retirement security, health and wellbeing become more subject to volatility and disruption.

57. It plays out in crises of housing affordability and household credit, undermining the certainty and predictability of people's strategies to secure long-term housing, build their lives and raise children from decade to decade.

58. It plays out in the form of regional conflicts and people movements, which exert a more direct and visible impact on the economies and politics of countries and regions all around the world.

59. It plays out in the reality of continuous restructuring of enterprises and employers, and movement of workers and investments, along with periodic financial shocks.

60. It plays out in the recurring crises of political volatility, falling citizen participation in democracy, instability of governments, growth of identity-based movement politics, struggle and conflict over regional and national independence.

61. All of these developments are real across the contemporary world, and across the OECD, even where they are extremely diverse in their specific causes and consequences. There is a wide range of possible responses to them, governed by different historical, cultural and governance contexts.

4.2.2. Mobility and Connection

62. Contemporary life is also characterised, for more and more people, increasingly by mobility and connection.

63. This is a result of the ongoing, long-term growth of information-based connections, falling costs of communication, and the emergence of economic and social organisational patterns shaped by networks.

64. These connections have manifold forms and impacts – again, the outcomes are not pre-determined or predicted by simple linear models. But the overall result is that people, information, goods, services, ideas and cultures will continue to move around the world, through increasingly complex and interconnected network infrastructures, even amidst the conditions of transition and conflict described above.

65. Combining connections and mobility with global diversity and transition dramatically increases the likelihood of complexity and uncertainty.

66. As a result, any person can expect to be more often in situations where they face simultaneously conflicting pressures, claims and needs – meaning that they will have to deal with tension, dilemmas and trade-offs.

67. This likelihood is exacerbated by the fact that those situations faced by individuals and families - as workers, citizens, students, carers - are less likely to fit predictably within a stable institutional or socio-economic structure.

68. Occupational hierarchies and socio-economic class structures are being rapidly changed by the impact of new technologies and global trade patterns on different industries. The labour market value and international prestige of different educational credentials is changing equally rapidly. Life expectancies are changing for different age cohorts and cultural groups, dramatically impacted by the changing distributions of wealth, freedom and connections.

69. It is reasonable to expect, therefore, that over the next 10-15 years people's everyday lives will be even less characterised by stable routines and incremental change, and that more and more people, in every society, will feel the manifold, though unpredictable, effects of greater interdependence.

70. For any individual personal progress, success and wellbeing will depend on being able to navigate and address these conflicts successfully.

71. For any learner, the ability to understand, respond to and influence the possibilities that these conflicts create will be fundamental to their own life-chances and their prospects of influencing the world taking shape around them.

4.3. Defining a transformative competency for coping with tensions, dilemmas and trade-offs

72. The goal of a 'transversal competency' in this domain could be seen as: Building a lifelong capability, which can deepen over time, by continuously using experiences to integrate knowledge and skills with values and attitudes (or dispositions) that are fundamental to living a balanced and successful life amidst circumstances of flux, diversity and transition.

73. This competency would involve knowledge, skills and attitudes that are learned and developed through formal education: it necessarily interacts with areas of knowledge and learning in the curriculum, and is practiced through the ways in which those curriculum areas are learned.

74. However, such a competency must also involve situations, decisions and outcomes beyond formal education – including those brought to schooling by very young children and families, and those which are developed through norms, relationships and experiences outside of formal lessons and curriculum structures.

75. In other words, these competences are about interpreting, managing and shaping a wide range of situations. Over time – perhaps over a life-course - they are about connecting and applying what is learned through education and life-experience, to new situations as they emerge.

4.3.1. Unpacking 'tensions, dilemmas and trade-offs'

76. In order to clearly identify and articulate the elements of this competency, we should clarify the range of situations in which it might be applied, and the types of knowledge and skill which may be relevant to it.

77. As the Education 2030 framework makes clear, a 'competency' combines knowledge, skills and attitudes and values to effectively apply understanding and purpose, through action and learning, to achieve outcomes.

78. This competency is framed by the realistic expectation that everyone will encounter situations where different goals, claims, interests and values conflict with each other, as they pass through life, and that such conflicts will be an increasingly common experience for learners, for the reasons set out above.

79. Nonetheless these types of situation are very diverse: they will occur at different levels, and cause different kinds of pressure.

80. Everyday situations which might cause tensions, dilemmas and trade-offs include:

- Directly competing interpersonal and social pressures, i.e. claims made simultaneously on a learner by different members of their social network – friends, relatives, teachers for attention, support, effort.
- Competing objectives and program goals, for example, the rigours and preparation schedules of different learning areas
- Conflicting cultural values demanding a focus for loyalty and identity; for example, the conflict between within-school-hours cognitive development and after-school hours religious and cultural education
- Ethical dilemmas in which opportunity or temptation may conflict with other moral principles
- Time-based conflicts between immediate desires and wants, in tension with the longer time horizons required to develop skills, earn status or acquire the income needed to access particular goods.
- Conflicting time pressures arising from participating in and being committed to overlapping projects and social groups, for example participating in music, drama, sport and computer coding.
- Cognitive and social pressures arising from participating in social and organisational networks through digitally-enabled technologies, creating ‘always on’ communications feeds and overlapping claims for time and attention.
- New dilemmas and trade-offs arising from team-based organisation and collaborative sharing of effort in work and learning; how develop and respect collaborative relationships, while maintain ethical boundaries and protocols.
- Distributional conflicts over who gets access to scarce educational opportunities or to limited financial support; how to determine the distribution of such resources equitably.
- Claims of justice, for example over the treatment and rights of different people and how to interpret or mediate competing claims for the truth.
- Life goals and their relationship to economic circumstances and to prevailing cultural norms and expectations: how girls and boys should value education and learning in relation to the roles that they expect to take up as adults. How the roles of parent and worker can be balanced and combined at different life stages.

81. Like all competencies, developing the ability to deal with such situations successfully (that is with fluency, understanding and eventually with mastery) involves cognitive, pre-cognitive, meta-cognitive, emotional and interpersonal skills.

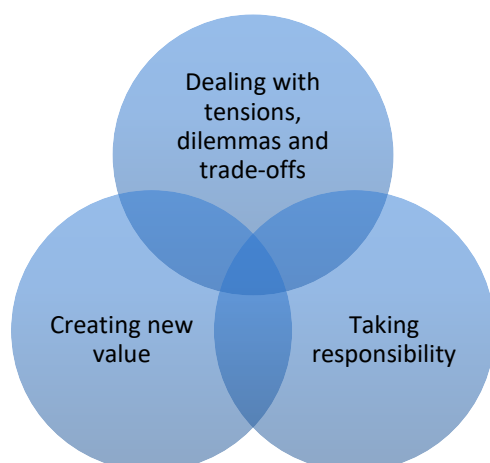
82. If we recognise that these many types of conflicts will arise across the full range of everyday experience and situations, as well as within the framework of formal education, we can also begin to distinguish dimensions of such conflicts that might be especially important.

83. These could include:

- Disciplinary conflicts, in which learners confront a decision-point or challenge while working within a discipline, which needs to be addressed using particular concepts, methods and processes.
- Interpersonal tensions, in which the needs or claims of different persons create tension and demand resolution in a social context.
- Institutional conflicts, in which shared problem leads to competing or overlapping claims of different institutional roles and identities are asserted through a formal organisational routine and hierarchy.
- Ethical dilemmas, where learners must decide the right way to act in the facing of complex or uncertain moral consequences
- *Adaptive* problems, in which the situation confronting the learners and actors is one for which a standard, technical solution is not available, and a creative or innovative response is needed.

4.4. Balancing a ‘handling tensions’ competency with taking responsibility and creating new value

84. Clarifying these important dimensions also makes more transparent how the competency of ‘dealing with tensions, dilemmas and trade-offs’ interacts and balances with the two other transformative competencies which are emerging in the Education 2030 framework: taking responsibility and creating new value.



4.4.1. Taking responsibility

85. Taking responsibility is arguably about the ability to accept obligations created through a person’s membership of various communities and institutions, and performance of different roles in those communities.

86. As a competency, it relies fundamentally on the ability to recognise multiple forms of value which go beyond immediate individual preferences, and to accept and internalise the validity of claims or obligations arising from others. Hence, as the paper (Annex 2) outlines, the ability to differentiate between oneself and one's surrounding context, is essential to the capacity to identify one's own responsibility, in relation to some goal or value that goes beyond oneself.

87. Taking responsibility therefore rests on understanding and acceptance of one's own role, combined with the belief that personal actions and choices can influence events and outcomes.

4.4.2. Creating new value

88. A competency for creating new value is necessarily about dealing with novel challenges and unfamiliar situations, and about going beyond established routines and patterns to generate perspectives and practical approaches which achieve something beyond the status quo.

89. The knowledge, skills and attitudes required for this competency are therefore centrally about the ability to recognise, tolerate and navigate the unfamiliar, to interpret different kinds of problem, and to construct and develop new methods and approaches.

90. As a result, central concepts and constructs involve curiosity, imagination, openness to varying interpretations and perspectives, ability to transfer across varied contexts, problem definition, understanding and engagement with different cultures, and collaboration and sharing.

91. If we consider these two competencies alongside the wide range of situations already described, it becomes clearer that the central concepts and constructs of the 'dealing with tensions' competency should be those which help to connect and mediate between those of taking responsibility and creating new value, by supporting the processes of conflict and adaptation through which conflicting imperatives, including the tensions between new demands and established norms or obligations, are addressed and reconciled. These processes will be analytical, affective, interpersonal, and institutional in nature.

92. The competencies involve recognising, framing and interpreting different kinds of problem; relating immediate situations and decisions to more enduring goals and values; identifying and selecting appropriate methods and processes for working through problems; forming and articulating personal and shared goals, values and priorities; recognising and respecting the perspectives of others and using them effectively to resolve tensions, dilemmas and trade-offs; appropriately undertaking both deconstruction and synthesis of complex situations and problems, according to the context.

93. How these concepts are prioritised, related to each other, and applied, is explored in more detail in the next section.

4.5. Prioritising specific constructs

4.5.1. Clarifying what is involved in coping with tensions, dilemmas and trade-offs

94. The review and synthesis of evidence from literature, and from selected curriculum frameworks around the world, has so far generated a rich range of constructs relevant to the competences we are discussing.

95. As the earlier papers note, the relationships between these constructs across various disciplines and contexts is highly varied. It is not necessarily fruitful to try to reduce and fix them all to specific levels and locations, in isolation from the settings or contexts in which they might be applied.

96. However, the analysis so far also shows why it is worth pursuing greater clarity and simplicity where possible: because the perception and interpretation of these constructs, and the situations in which they will occur, will vary widely. This apparent subjectivity is one factor which contributes to the lack of ‘bite’ in policy discussion of curriculum, driving the focus of policy, implementation and assessment back towards ‘hard’, or quantifiable units of measured learning and disciplinary content.

97. So there are good reasons for seeking clarification, rigour and simplification of the range of constructs, and the concepts which underpin them, in order to clarify in turn how they should relate to each other, in theory and in practice.

98. It is important to keep in mind that the ‘transversal competencies’ are never applied in the abstract – they can only be used in specific situations, solving particular problems by using specific kinds of knowledge and skill. That is, these competences will be developed and exercised in combination with other kinds of knowledge, skill and understanding. They are not ‘free-standing’ or free-floating, operating in abstract, decontextualised forms.

99. The full range of initial constructs outlined in the papers for the November 2016 meeting, with those that might be particularly relevant for the competence of dealing with tensions, trade-offs and dilemmas, is as follows:

a) Cognitive and meta-cognitive skills for 2030

Basic cognitive/general cognitive skills; Critical thinking skills; **Creative thinking**; Problem-solving skills; Reflective thinking/meta-learning skills; **Responsible decision-making**; Self-awareness; **Perspective-taking and cognitive flexibility**; Other executive functions.

b) Social and emotional skills for 2030

Engagement (communicate, cooperate, and collaborate); **Self-regulation/self-control**; self-efficacy/positive self-orientation; Entrepreneurship/enterprising/initiative-taking; Mindfulness; **Empathy**; Compassion; Aesthetic engagement; Conflict resolution; Motivation (e.g. to learn, to contribute to others, to contribute to society etc.); Leadership; Resilience/stress resistance; Goal orientation (including grit, persistence, self-orientation); Risk management (risk-taking and assessment).

c) Physical and practical skills towards 2030

General kinaesthetic skills/motor skills (the ability to coordinate movement); Manual dexterity and skills related to classroom skills or learning strategies (e.g. general ICT skills); Manual dexterity and skills related to arts, music and physical education for 2030 (e.g. crafting, drawing, performing drama, playing music instruments, singing, playing sports, physical exercises); Manual dexterity skills related to certain professions and sectors in the changing context (e.g. operating new machines, dentistry or giving remote operations with technology); Manual dexterity and skills related to use advanced tools for everyday life (e.g. riding a bike, giving first aid skills).

d) Attitudes and values

Adaptability/Flexibility/Adjustment/Agility; Open mind-set (to others, new ideas, new experiences); Curiosity; Global mind-set; Growth mind-set; Hope (related to optimism, self-efficacy); Pro-activeness; Gratitude; Identity/spiritual identity; Respect for self, others (including cultural diversity); **Trust** (in self, others, institutions); **Responsibility** (including locus of control); Benevolence/altruism/motivation to contribute to others and common goods; Ecological sustainability; Justice; Integrity; Equality/equity

4.5.2. The challenge of integration

100. One key to understanding the competency (of ‘coping with tensions, dilemmas and trade-offs’), in order to successfully resolve a tension or conflict, the actor must bring together key elements in a particular situation.

101. These elements will involve the individual, a domain of knowledge relevant to the situation or problem to be solved, and a social field of people who make up the field of participants and experts, whose judgments and evaluations matter to the outcome. Resolving conflicts successfully is not just a matter of identifying the ‘correct answer’ and making it happen, but rather of successfully aligning and integrating these disparate components, using an appropriate process of analysis and resolution, into an outcome or decision.

102. When these different elements in question are diverse or disparate, then the complexity and difficulty of bringing them together is greater. However, a more diverse and disparate collection of components also increases the potential value of an outcome in a given context.

103. Understanding these simultaneous imperatives and pressures – of alignment and convergence amidst continuous differentiation and divergence – underscores the critical mediating role of this competency. To integrate knowledge, skills and attitudes in the development of such a competence, involves bringing together and reconciling different elements: the goals and perceptions of oneself, the claims and perspectives of other people, and the expertise, information and tools that make up a specific knowledge domain, in which the problem or conflict is situated.

104. In the rest of this section we consider arguments for privileging and prioritising specific constructs in the definition and development of this capability.

4.5.3. Creativity

105. Creativity fundamentally involves developing a novel insight or approach, and can be articulated in terms that the learner and others can come to appreciate and understand.

106. As the earlier meeting papers make clear, definitions of creativity vary between emphasising the articulation of an original perspective, as in putting forward ideas in a form not seen or heard before; and the application of novel approaches in ways that are socially valued.

107. Many celebrated examples of creative thought and expression are highly individual, and emphasise internal and introspective processes. But all creative processes, even those of individual thought arising from solitude, are nonetheless socially embedded, reflecting the multiple possibilities and constraints of culture and experience.

108. Young children do not find it especially difficult to find and adopt creative approaches to their encounters with the world, playing and experimenting with different ways of seeing, representing and describing their experience and using techniques of imaginative expression, enquiry and exchange as part of their own social growth and development as learners.

109. As children mature move towards adulthood, they increasingly encounter the struggle to reconcile creative possibilities with the structures, pressures, routines and preconceptions through which adult institutions, especially those of education and work, are organised.

110. In conditions of complexity and interdependence, the value of creativity increases.

111. Creative learning and problem-solving offer ways in which to resolve tensions between components which can seem apparently irreconcilable.

112. Indeed, tension and conflict are often the spur to creativity. Innovation arising from creative learning and problem-solving can be understood as a process of combining diverse elements within particular constraints – whether finding new ways to combine technology components within smaller units of scale, new ways to reconcile the growth of human population with the constraints of carbon emissions required to stabilise global climate change.

113. However, this last point also helps to make clear the case for seeing creativity as a fundamental to creating new values as a competency, in a way that is closely connected, and complementary to coping with tensions, dilemmas and trade-offs.

4.5.4. Responsibility

114. Acting responsibly requires the ability to understand oneself as an actor in a given situation – an actor capable of accepting an obligation because he or she is able to recognise an ethical imperative, and because they believe that taking action will result in outcomes that can be valued.

115. Responsibility arises from membership of a community; from understanding oneself as capable of making choices and taking actions – i.e., from the combination of individual agency and social interdependence.

116. Acting responsibly also involves accepting that different situations will require delineating and taking different roles according to the social and organisational contexts that we encounter.

117. Learning to act responsibly therefore involves weaving together analysis of different situations from a practical perspective, from an ethical perspective, and from an individual perspective, and determining the right course of action in the circumstances.

118. For an individual facing a conflict, dilemma or trade-off, the importance of responsibility is obvious.

119. For example, if a student finds themselves caught in an interpersonal conflict with other members of his or peer group, should she respond by mimicking and escalating the conflictual social behaviour? Or, by considering the likely risks and consequences, and making an effort to change the dynamic of the conflict? Under what circumstances should a student refer an interpersonal conflict to adults in a school, or a worker do the same to managers? How should members of a residential community respond to growing instances of poverty and homelessness in their local area?

120. The development of social and organisational roles also reflects the importance of responsibility-taking. Roles involve taking on special power or status related to some larger value or need across a social group. With increased levels of decision-making power – power to decide, to interpret, to mediate, to rule on particular kinds of matter – comes the responsibility to act in the interests of that larger group, to observe ethical principles when carrying out one’s role, and to respect other established limits to that role.

121. Acting responsibly clearly also requires a capacity for self-regulation – the ability to differentiate between immediate personal goals and desires, and both the achievement of longer term goals and the fulfilment of ethical principles or imperatives that might subsume immediate individual desires. The capacity for self-regulation is clearly also required by other constructs included adaptability and trust. It also seems increasingly clear that creative and responsible decision-making are combined in practice through constructs such as perspective-taking and cognitive flexibility.

4.5.5. Empathy

122. Empathy demands a combination of the ability to see from the perspective of others.

123. As the papers explain, Adam Smith’s definition of empathy combines “the ability to understand another’s perspective and to have a visceral or emotional reaction”.

124. This definition neatly illustrates the combination of intellectual and emotional process in response to a particular situation, and the importance of perspective in the ability to resolve tensions, conflicts and dilemmas successfully.

125. Empathy is a naturally occurring human quality, and also one that can be deliberately learned and developed.

126. Given the advanced over the last two decades in understanding the nature and influence of emotional and social processes in the brain and mind, it may be more possible for us to understand why and how empathy fits into a repertoire of social engagement which supports our ability to coordinate ourselves in social groups and solve problems and conflicts arising from social interaction.

127. In networked, twenty-first century societies, empathy is needed more, not less, than in the past.

128. We can reasonably expect that young people entering adulthood in 2030 will be more likely to meet, communicate, exchange, socialise, work and learn with a growing range of people who they do not know, who come from backgrounds and cultures which are different from their own.

129. Empathy does not demand that we feel the same regard for every person we encounter or every story we will hear. Indeed, how to value the needs and claims of others, to understand and act on layers of differentiated obligation and responsibility, is one of the great moral challenges of every age, including this one.

130. However, developing our capacity for empathy – for understanding the perspective of others and the experience they are likely to be going through - and responding in ways that will affect our own motivations, is fundamentally important for our capacity to resolve conflicts appropriately and ethical choices and sound decisions.

131. As the papers also make clear, empathy is distinct from sympathy, where we might feel a sense of distress or regret for other people. Empathy is about the capacity to imagine ourselves ‘in the shoes of others’, and to respond appropriately in situations of interdependence.

4.5.6. Trust

132. Trust is another basic ingredient of successful societies, an emergent property of social interactions and human relationships.

133. Trust acts as a lubricant for transactions and exchange, a buffer for shocks and uncertainty, and an essential support for the functioning of complex, large-scale activities as well as intimate personal relationships.

134. It is a fundamental contributor to the resilience of institutions, communities and societies – but it is also a determinant of personal wellbeing and effectiveness over a life-course, because acts as a deep influence on self-perception, personal identity, reputation and social networks.

135. Learning to trust others, and on what basis to trust others, is therefore another indispensable element of personal development, a learning process that occurs from its earliest points within families, and then expands outwards through the social and educational universe, into the wider realms of the market, the web, and the global network.

136. Trust is intertwined with the norms and networks of informal communication and collaboration which also contribute to social capital. Trust may be understood as a ‘shared social and cultural resource’, which has ethical and normative elements as well as interpersonal and social network components. Trust can be exclusive and limiting, as well as enabling and enriching, depending on the way it is used in different situations. If trust is based, for example, only on exclusive forms of kinship tie, on past associations in exclusive ‘clubs’ or restrictive institutions, then its wider value will be limited.

137. Once again, in the context of more networked societies in which people from a wider range of cultures will be exposed to a new range of shared problems and challenges, the skills and competences in building, sustaining and renewing trust are essential for achieving resilience, innovation and sustainability – for thriving in a ‘structurally imbalanced world’.

4.5.7. Engagement (communicate, cooperate, and collaborate)

138. There is also a strong case to say that engagement should be a priority construct for this competence, given its presence in every process through which tensions, dilemmas and trade-offs are dealt with in practice.

139. The work so far on competences for 2030 reinforces that, in order to visualise and realise a deeper and more integrated set of goals for individuals and society, we need to acknowledge the ways in which social, ethical and emotional learning are intertwined and interspersed with more formal cognitive, technical and institutional learning processes ‘throughout the life-course’.

140. The processes of learning communication, cooperation and collaboration have often, in the past, been treated as part of informal socialisation - the province of family and cultural choice, but not subject to intentional, evidence-informed, policy action.

141. Yet there is mounting evidence to show that the ability to engage is crucial to surviving and thriving in contemporary societies, giving their centrality to:

- Working in teams and networks
- Forming multiple, positive and overlapping group identities
- Conducting commerce and building a positive reputation in a networked economy
- Developing norms and habits of sharing, fairness and ethical fluency
- Creating and deepening trust
- Creating novel responses to problems and challenges

142. Arguably, the knowledge, skills and attitudes involved in engagement contribute to a repertoire of methods and processes for engagement which can be understood as part of a broad and rich spectrum, informed by cultural diversity and history, as well as by organisational innovation and by scientific evidence.

4.5.8. Adaptability/Flexibility/Adjustment/Agility

143. Adaptability is a vital construct, making possible pragmatism and learning in the face of variations that cannot be controlled. It requires the ability to form goals, to synthesise complex situations and claims, to engage with others, and to update one's perspective in the light of all these different sources of information and example.

144. This construct is concerned with the capacity to absorb and act on new information and insight. The ability to deal with and acknowledge other people, responding to what others say and do and working for outcomes and solutions that reflect shared effort and shared ownership. Adaptability also involves the ability to update and alter one's practices and decisions in the light of fresh experience, new information and additional insight.

145. In a world characterised by interconnections and instability, the ability to adjust is obviously crucial.

146. However, for individuals, communities and societies, too much flexibility and adjustment can be a bad thing. If our environment is characterised by constant flows of information and initiative, by a babel of conflicting and overlapping voices, then changing our approach every day, or every hour, in response to new stimulus or new demand, could lead to inaction, exhaustion and frustration. Inequality also has a huge influence on the impact and distribution of flexibility. Many of us may want and seek some kinds of flexibility and personal autonomy, but a state of continuous adjustment is more likely to be experienced by those with less power and fewer decision rights.

147. So how should we understand the value, and the use, of adaptability?

148. Perhaps it is in combination with other qualities and competences, and in the context of other goals, that adaptability is valuable and necessary.

149. This implies a 'developmental' perspective, in which forming, maintaining and mediating between long term goals is an essential backdrop to adjustment and adaptability.

150. A range of early experiences which enable those goals to be formed, and for the foundations of self-understanding to be built, might also be important.

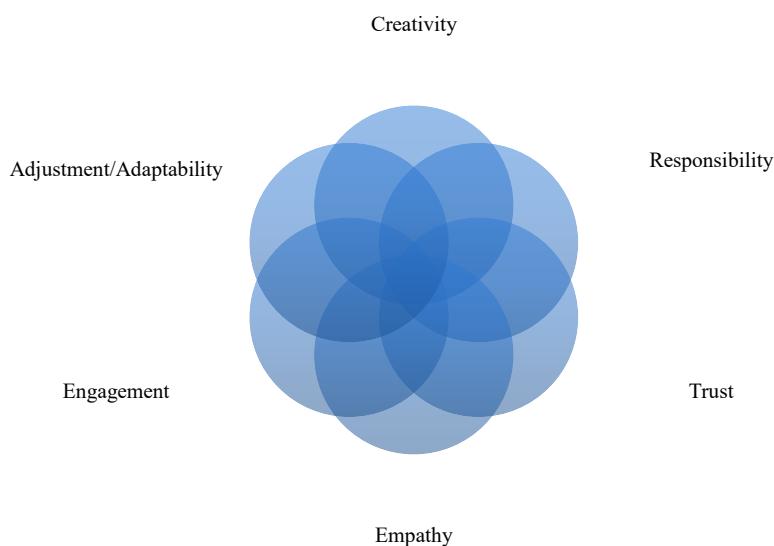
151. Many philosophical traditions have articulated and emphasised the value of adjusting in the light of changing experience and circumstances, including pragmatism in western philosophy and psychology, and Confucian and Buddhist traditions.

152. The emphasis is often on achieving harmony, or balance, over time, using the passage of events and the flickering of experience to illuminate and deepen understanding over time.

153. Specific traits, skills and techniques help individuals to adjust in specific situations.

154. But overall, an orientation towards adjustment – the ability to see learning, work and life in terms of episodes, cycles and projects, with multiple opportunities to reflect and adjust.

155. This is also consistent with a view of diversity as a shared resource which enables learning, and can support the achievement of a widening array of differentiated learning goals.



4.6. Conclusion: towards a developmental, experimental, perspective.

156. How are these competences developed and integrated with formal education into a life-course?

157. The perspective that is emerging suggests that we need a framework capable of integrating the short-term with long-term, the formal with the informal, and the personal with the institutional.

158. The earlier papers and Education 2030 framework suggest a model of learning based on a cycle of anticipation, action and reflection. This is an essential part of the framework – but in itself, this cycle does not clarify how to deal with issues of time and scale – how to incorporate the cycle of learning into the contexts of the life-course and of larger systems in which individuals will participate.

159. The emerging analysis and competency construction suggest we need a framework that can reflecting specific evidence about learning at different development stages of the life-course, while also reflecting crucial social, cultural and policy choices in different systems and societies.

160. This suggests that a possible way to structure these stages, and to further develop a priority focus for developing and assessing key competences, might use a schema like the following:

| Early years | Primary | Secondary | Tertiary |
|---|--|---|--|
| <p>Immersion, encouragement, Diagnosis.</p> <p>Strong focus on quality of early experiences and relationships, valuing social, emotional and pre-cognitive alongside cognitive functions. Sophisticated assessment of dispositions, early strengths and vulnerabilities</p> | <p>Self-awareness, knowledge, action. Basic concepts and habits, expression of goals and articulation of ethical values.</p> <p>Building awareness and familiarity with goal-setting, social norms and group processes for addressing and mediating conflict, along with essential cognitive, content knowledge and skill areas.</p> | <p>Knowledge for understanding, Learning from different perspectives, engaging in wider communities, diversity of experience, Working in teams to solve novel problems</p> <p>Deepening knowledge and experience towards understanding and mastery. Locating each learner in active communities connected through networks and shared norms. Taking on team roles and structures. Engaging with messy problems.</p> | <p>Towards fluency and mastery, Inter-disciplinary exploration, creative problem solving. Deepening engagement, aligning learning with long term goals for work and life.</p> <p>Internalising ethical responses to different types of conflict. Participating in structured approaches to innovation and problem solving across disciplines and locations. Developing mastery of essential competences and portfolios of relevant experiences and project work.</p> |

4.7. About the author

Tom Bentley is a writer and policy adviser based in Melbourne. He is principal adviser to the Vice Chancellor at RMIT, where leads the Policy and Impact Team. He is an honorary senior fellow at Melbourne University's Graduate School of Education.

From 2007-13 he was Deputy Chief of Staff and senior policy adviser to Julia Gillard, Prime Minister of Australia 2010-13 and Education Minister 2007-2010. From 1999-2006 he was Director of Demos, an independent think tank based in London.

He has worked with institutions around the world including The Gates Foundation, the OECD and the Copenhagen Business School. Publications include *Educating Australia: Challenges for the Decade Ahead* (with Glenn Clifton Savage, MUP 2017), *The shared work of learning: using collaboration to lift educational achievement* (with Ciannon Cazaly, Mitchell Institute, 2015) and *Time for a new consensus: fostering Australia's comparative advantages* (with Jonathan West, Griffith Review 2016), *Learning beyond the classroom: education for a changing world* (Routledge, 1998) and *The Creative Age: knowledge and skills for a new economy* (Demos, 1999).