



Assessing creative thinking to empower learners



ASSESSOR

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Short Bio: Andreas Schleicher is Director for the Directorate of Education and Skills, OECD. He initiated and oversees the Programme for International Student Assessment (PISA) and other international instruments which create a global platform for policy-makers, researchers and educators to innovate and transform educational policies and practices. He has worked for over 20 years with Ministers and educational leaders around the world to improve quality and equity in education. U.S. Education Secretary Arne Duncan said about Andreas in *The Atlantic* (7/2011) that “He understands the global issues and challenges as well as or better than anyone I’ve met, and he tells me the truth”. Andreas is the recipient of numerous honours and awards, including the “Theodor Heuss” prize, awarded for “exemplary democratic engagement” in the name of the first president of the Federal Republic of Germany. He holds an honorary professorship at the University of Heidelberg.

The world is rapidly changing. Today’s youngsters will likely be employed in roles that do not currently exist, responding to societal challenges that we cannot possibly anticipate and using technologies that we cannot yet imagine. It is likely that future work will pair computer intelligence with humans’ cognitive, social and emotional skills, attitudes and values. It will then be our capacity for innovation, our awareness and our sense of responsibility that will enable us to harness the power of artificial intelligence to shape the world for the better. This will enable humans to create new value, which involves processes of creating, making, bringing into being and formulating, and can generate outcomes that are innovative, fresh and original, contributing something of intrinsic positive worth. It suggests entrepreneurialism in the broadest sense – of being ready to try, without being afraid of failing. In this light, it is not surprising that employment in Europe’s creative industries, that is, industries that specialise in the use of talent for commercial purposes, grew at 3.6% during the crucial period between 2011 and 2013, a time when many European sectors were shedding jobs or showing stagnant employment rates, at best. In several leading European countries, the growth of creative jobs outpaced job creation in other sectors, including manufacturing.

This poses a dilemma for educators. The kinds of skill that are now easiest to automate are also those that are easiest to teach. We can solve this dilemma by teaching ways of thinking, including thinking creatively and outside the box.

For many people, the concept of creative thinking conjures images of the famed Geniuses, such as Leonardo or Mozart, whose ground-breaking masterpieces defined

the cultural or social Zeitgeist. However, the ability to think creatively is far more common than that: we have all been creative thinkers in one way or another. Creative thinking does not only apply in contexts that centre on the expression of one’s inner world or imagination, such as the written, visual or performance arts. It also applies to other areas of life where the generation of new and different ideas is functional to the resolution of problems – including everyday problems such as cooking a tasty meal using leftovers or solving a scheduling problem – or society-wide concerns.

In more general terms, creative thinking enables us to break out of routine performance scripts and search for new, different solutions; to try something counter-intuitive when all else fails; to look at problems from different angles or starting points; and to construct new methods rather than following pre-determined recipes of action. Crucially, it allows us to generate answers that we may have never considered before, and indeed also new questions. Creative thinking is thus more than simply coming up with random ideas. It is a tangible competence that can be developed and that supports individuals to achieve better outcomes, not only by solving problems in constrained environments, but also by pushing the boundaries of what has come before.

Perhaps just as importantly, creative thinking can provide a key source of engagement for young people at school, as it can help them to discover, define and develop their talents, particularly so for those who might otherwise be considered ‘low-achievers’ in traditional subject areas. That is not to say that creative thinking and content knowledge must develop separately or in discrete contexts. In fact, knowledge and creative thinking support each other and can be nurtured simultaneously in all subjects by using pedagogic approaches that encourage exploration, problem finding and discovery, rather than rote learning.

I met several teachers who have put creative thinking at the front and centre of their education mission. For example at Kosen schools in Japan, I observed learning

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that was both cross-curricular and student-centred, and teachers were mainly coaches, mentors and facilitators of hands-on, project-based learning. Kosen students typically work for several years on bringing to life their big ideas. Yet this is still an isolated example.



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However, a major challenge to teachers’ and education systems’ ability to foster and monitor progress in their students’ creative thinking is the lack of understanding about what exactly it is, why it is important, and how it can be nurtured within school and at different ages. This is why we need to develop new and valid ways to assess creative thinking.

For the first time in 2021, PISA will assess students’ proficiency in creative thinking. This innovative assessment will encourage a wider policy debate on the importance of supporting this crucial competence to unleash young people’s potential to think outside the box, discover their talents and make a difference in their worlds.

The 2021 assessment of creative thinking represents a natural progression for PISA, which has always focused on measuring young people’s ability to apply their knowledge to novel situations. The major innovation of this new assessment lies in the open-ended nature of the tasks. Instead of asking students to solve a given problem that has one ‘right’ answer, students will be encouraged to express their imagination and suggest creative solutions in a variety of open contexts. Their capacity to think flexibly and generate original answers will be rewarded in the assessment.

In 2017, the OECD assembled a group of international experts who together have mapped existing work and developed a conceptual framework for the assessment of creative thinking in PISA. Over 80 countries and jurisdictions have actively supported this process. This wealth of perspectives and expertise from all over the world brings strength to our work, raising the confidence that we are developing definitions, learning targets, tasks and questions, that are meaningful across different cultures.

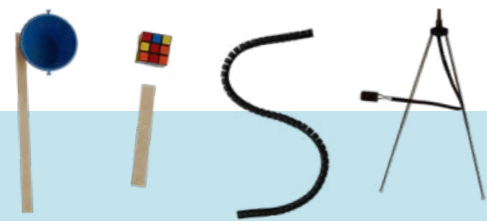
So how does PISA conceptualise creative thinking? Creative thinking is defined as the competence to engage productively in an iterative process involving the generation, evaluation and improvement of ideas that can result in novel and effective solutions, advances in knowledge and impactful expressions of imagination. This competence is enabled by domain knowledge, cognitive skills, curiosity, confidence, goal orientation and task motivation, as well as by social conditions, and can be exercised individually or as part of a group.

PISA will primarily measure the extent to which students can generate diverse and creative ideas when working on open, real-life tasks, and the extent to which they can evaluate and improve upon those ideas. Students will have an opportunity to play with their ideas in four different 'domains': written expression, visual expression, scientific and mathematical problem solving, and social and interpersonal problem solving. They will thus engage in different playful activities such as writing short stories, creating a catchy logo, finding multiple methods to solve an engineering problem, or exploring innovative solutions to complex social issues. The inclusion of multiple domains in the assessment will enable a more comprehensive overview of the relative creative strengths and weaknesses of students in PISA countries, and will let us investigate how these are related to the values, curriculum and pedagogies of education systems. The questionnaire that follows these creative

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tasks will gather information about students' openness to new ideas and other socio-emotional enablers of creative thinking, as well as about students' opportunities and social incentives to think creatively in their life inside and outside school.

Education used to be about giving people access to pre-digested knowledge. Now, it should be about helping students develop a reliable compass and the navigation skills to find their own way through an increasingly uncertain, volatile and ambiguous world. By including creative thinking in PISA, we are sending a clear message that all students should learn how to think autonomously, believe in their creative potential, and express their ideas with confidence and openness to feedback. The democratisation of creative thinking through education will lead to more innovation and will make school more relevant and enjoyable to the next generations. We can no longer afford the alternative. Without creative thinking, we are less inventive, less interested in collaborating with others, less aware of ourselves and the world around us, and ultimately less human.



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