

Chapter 1

The impact of arts education: From advocacy to evidence

This chapter sets the context, the research questions and the methodology of the book. We show that policy makers put renewed emphasis on skills for innovation and mobilise arts education as part of this policy agenda. Similarly, arts education advocates sometimes find that arts education is endangered and claim strong impacts of arts education on non-arts skills. The purpose of the book is to show which of these claims are supported by strong research evidence. We present the scope of our report, discuss the concept of transfer, and summarise the goals and methods of the report. We then preview our conclusions.

Most people, including policy makers, believe that arts education fosters creativity and possibly others skills conducive to innovation. In knowledge-based societies, innovation is a key engine of economic growth, and arts education is increasingly considered as a means to foster the skills and attitudes that innovation requires, beyond and above artistic skills and cultural sensitivity. Does arts education really have positive effects on non-arts skills? Does it enhance performance in academic subjects such as mathematics, science or reading, which are also seen as crucial in our knowledge-based societies? Does it strengthen students' academic motivation, self-confidence, and ability to communicate and cooperate effectively? Does it develop the habits of minds, attitudes and social skills that are seen as critical to innovation societies? In this book we will try to answer these questions by examining the state of empirical knowledge about the impact of arts education on these different kinds of skills.

This chapter sets the context, the research question and the methodology of the book. We show that policy makers put renewed emphasis on skills for innovation and mobilise arts education as part of this policy agenda. Similarly, arts education advocates sometimes find that arts education is endangered and claim strong impacts of arts education on non-arts skills. The purpose of the book is to show which of these claims are supported by strong research evidence. We present the scope of our report, discuss the concept of transfer, summarise the goals and methods of the report, and then preview our conclusions.

Context of our study: Education for innovation, arts advocacy and arts education

Education policy – and decision – makers have to continuously revisit curricula to ensure that pupils and students are equipped with the skills needed to drive and adapt to innovation societies (OECD, 2010). How much arts education, if any, should be included in school curricula? What should be the objectives of teaching the arts? Given the peripheral position of arts education in school, arts advocates have long argued that arts education fosters non-arts academic skills. The renewed interest in fostering skills for innovation raises new questions along traditional claims about expected outcomes of arts education.

Arts education and the quest for innovation and creativity

Education and training systems are increasingly seen as instrumental in equipping people with innovation skills. As innovation and knowledge becomes a key source of growth and wellbeing, ministers from 35 countries declared in the conclusions of the 2010 OECD Ministerial Council Meeting that they “will, taking into account country-specific conditions, empower people to innovate by education and training”. A few months later, at another OECD Ministerial Meeting, education ministers from 38 countries discussed the challenges of equipping students with the skills necessary for pursuing a decent life in the 21st century. They agreed to keep a focus on high standards in foundation skills and emphasised the need for an “appropriate balance” between professional skills and generic skills such as entrepreneurship, creativity and communication. In the discussion, several Ministers clearly identified arts education as an important means to achieve these objectives, highlighting notably their motivating character.

Similarly, the *Recommendation of the European Parliament and of the Council on key competences for lifelong learning* (18 December 2006, 2006/962/EC) highlighted eight key competences, including cultural awareness and expression, and noted that “critical thinking, creativity, initiative, problem solving, risk assessment, decision taking, and constructive management of feelings play a role in all eight key competences.”¹

Several international and national task forces and projects sponsored by government and businesses identified different sets of “21st Century skills”, including all strong academic skills, creativity, critical thinking and social and emotional skills.

For example, the Assessment and Teaching of 21st Century Skills (AT21CS) project, sponsored by governments (Australia, Finland, Costa Rica, the Netherlands, Russia, Singapore and the United States,) and information technology (IT) companies (Cisco, Intel and Microsoft), identifies different sets of skills for tomorrow's world, including creativity, critical thinking, problem-solving, decision-making and learning, communication and collaboration. Another example lies in the skills framework developed by the Partnership for 21st Century Skills, a consortium of US government and IT companies that advocates for 21st century readiness in light of the global economic competition (Trilling and Fadel, 2009). The skills framework has four components: core subjects, including arts; learning and innovation skills (creativity and innovation, critical thinking and problem solving, communication and collaboration); information, media and technology skills; life and careers skills (adaptability and flexibility, initiative and self-direction, social and cross-cultural skills, productivity and accountability, leadership and responsibility).

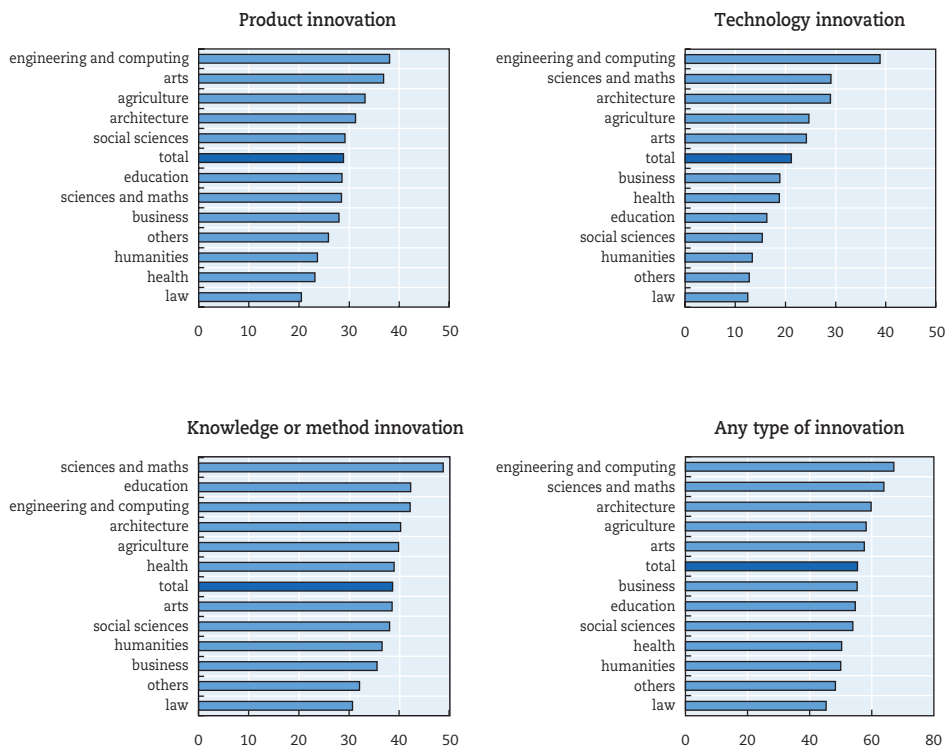
In spite of their differences, these projects share a common willingness to find a balance between different sets of skills, above and beyond content and procedural knowledge in different subjects. They renew recurrent arguments about higher order thinking skills, as well as a quest for a recognition of a variety of valuable learning outcomes that was for example forcefully supported by Gardner's work on "multiple intelligences" and "minds for the future" (Gardner, 1983, 1993, 2006). We build on these projects, ideas and theories to categorise skills or learning outcomes in three broad categories that we will examine in the book: academic or cognitive skills, which encompass know-what and know-how in specific subjects, notably basic skills; skills in thinking and creativity; and social and behavioural skills leading to outcomes such as student motivation, persistence, good communication, emotion regulation and self-confidence.

Even though people may have different views about how to best foster skills for innovation, arts education is clearly one of the avenues that is commonly envisaged to do so – and one that appears as plausible to most people. A 2011 statement by US Secretary of Education Arne Duncan exemplifies how policy talk posits arts education as a means to foster the right set of skills for tomorrow's innovative societies:

Education in the arts is more important than ever. In the global economy, creativity is essential. Today's workers need more than just skills and knowledge to be productive and innovative participants in the workforce. Just look at the inventors of the iPhone and the developers of Google: they are innovative as well as intelligent. Through their combination of knowledge and creativity, they have transformed the way we communicate, socialize, and do business. Creative experiences are part of the daily work life of engineers, business managers, and hundreds of other professionals. To succeed today and in the future, America's children will need to be inventive, resourceful, and imaginative. The best way to foster that creativity is through arts education (PCAH, 2011, p. 1).

Indeed, correlational evidence shows that arts graduates, and probably arts education, play an important role in innovation. Based on an international analysis of tertiary graduates’ job characteristics five years after graduation, Avvisati, Jacotin and Vincent-Lancrin (2013) find that arts graduates are among the most likely to hold a highly innovative job when it comes to product innovation – at par with graduates in engineering and computing. (Highly innovative jobs are defined as those held by people working in an innovative organisation and personally contributing to innovation in their job). While it is possible that arts education programmes attract people with a specific bundle of skills that makes them more likely to hold these kinds of jobs, it is plausible that specialised arts education also strengthens these skills, as self-reported by these tertiary-educated professionals (Figure 1.1).

Figure 1.1. **Percentage of tertiary graduates from specific fields having a highly innovative job**



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Source: Avvisati, Jacotin and Vincent-Lancrin (2013). Based on Reflex and Hegesco.

Arts education initiatives

While they still remain marginal, education policies and initiatives based on arts education are gaining ground as a way to make education more innovative. Typically, these initiatives try to foster an innovative culture in teaching and learning in order to improve students' academic outcomes but also creative dispositions and other social and emotional skills.

In Singapore, for example, the Ministry of information, Communications and the Arts (MICA) established the School of the Arts in 2008 to develop an innovative schooling model allowing students to develop skills above and beyond those necessary to achieve high scores in examinations. This independent high school offers a 6-year education programme in and through the arts to 13 to 18 year old students. Students study their selected art forms for more than 10 hours per week but also learn regular academic subjects. Having adopted the "connected curriculum" (Perkins, 1993) as a vision for its curricular initiatives, the school teaches academic subjects through the arts. For example, students learn about physics principles through sculpture; chemistry principles through glazing and pottery; and mathematical principles through music. Moreover, practising artists work with students in the school setting so that experimentation, expression and discovery are emphasised in the process of making arts. Artistic experience is not only supported as a means of cultivating technical skills, but also as a way of building sensibilities and sensitivities.

In 2013, the first cohort of students of the School of the Arts all passed the International Baccalaureate diploma examination, and almost 44% students obtained a score of 40 or above (which places them in the top 5% students taking the examination). This is a remarkable academic outcome as the school enrolls about 200 students annually through Singapore's Direct School Admission (DSA) scheme from various academic backgrounds, including students who are (statistically) unlikely to enter university given their score at the Primary School Leaving Examination. While based on a selective procedure, the Direct School Admission scheme takes place before the results of the Primary School Leaving Examination, which usually guide admission and tracking decisions in Singapore education system, are known. Research on the school processes and outcomes is still ongoing. In their initial analysis, Tan and Ponnusamy (forthcoming) attribute this success to the deliberate effort of the school to use the connected curriculum and thereby cultivate a culture of teaching and learning in which teachers solve problems collaboratively. The school seems to have fostered teachers' motivation but also to have given them the freedom and time to experiment and refine their curriculum units, as well as to re-examine their classroom practices. In the process, the arts have been reimagined and legitimised as ways of knowing instead of being peripheral activities of formal education.

In the United Kingdom, the not-for-profit organisation Creativity, Culture and Education (CCE), ran an interesting programme: Creative Partnerships. Between 2002 and 2011, Creative Partnerships has worked with over 1 million children and over 90 000 teachers in more than 8 000 projects across over 5 000 schools

in England. The distinctive feature of the programme lay in the training and deployment of “creative agents” in schools to address a specific need or problem that they wished to address. Drawn mainly from the creative and cultural industries, these creative agents were often, though not exclusively artists, but kept a role of visitors (as opposed to teachers) within schools. For example, in 2005 Prudhoe Community High School (Northumberland) started a project called “Anthem for Northumberland” around the theme of film music. After having involved other schools in the city and with the help of musicians, pupils learned to compose and perform new musical pieces for film scenes, which culminated in the composition and public performance of one piece for the whole group.

Independent research on the programme showed that it had positive impacts on students’ wellbeing, attainment and retention, on teachers’ professional development and on school routines (CCE, 2012). The programme included a strong focus on arts education and artistic projects, although research attributes its positive impact to the pedagogy that the creative professionals modelled in the classroom, which were subsequently adopted by the teachers and incorporated in their daily practice, rather than to the study of arts as a subject discipline. Given the nature of its impact on pupils, this approach attracted considerable international interest and, as of 2013, programmes modelled on Creative Partnerships were running in Germany, Lithuania, Norway and Pakistan – and were under consideration in some other countries. For example, a joint project by the German federal government and several Länder (Baden-Württemberg, Nordrhein-Westfalen, Berlin, Thuringia, Hamburg) called “cultural agents” supports the growth of social competencies by strengthening ties between schools and artistic institutions and artists.

It goes beyond the scope of this book to review country policy examples of programmes fostering arts education with the purpose of developing the non-arts skills that we will cover. We can however mention a few. In Chile, an increase in the time devoted to arts education in the curriculum has been announced in 2012, motivated by the belief that arts education could increase the motivation and the social and behavioural skills of pupils. An evaluation of how these skills are developed within arts education is also planned. In Austria, the “dialogue programme” funded by the Ministry of education supports the collaborative work of artists, teachers and students on school arts projects during class time, with the aim of motivating students. An evaluation of the programme was conducted based on students’ perceptions about their learning: the ability to work in team and to express emotions stood out as the stronger perceived learning outcomes (Schober, Schober and Asleithner, 2007). In France, a 2013 reform reorganised the allocation of school time over the week. The government suggests using the freed time for sportive, artistic and cultural activities, claiming that it will enhance pupils’ wellbeing and intellectual curiosity. A more informal annual initiative is the “culture bazaar” that is held annually in Slovenia: it aims to encourage the building of partnerships between schools, pre-schools, and cultural institutions (museums, theatres, etc.) for quality arts education.

Finally, the integration of arts education in the promotion of science, technology, engineering and mathematics (STEM) education is worth mentioning as a new trend. In Korea, a science, technology, engineering, arts and mathematics (STEAM) project was launched in order to leverage on the self-confidence that students (supposedly) develop through arts education for the sake of STEM education and to develop their creativity. In the United States, an up-and-coming movement also advocates the integration of arts and design to the national education agenda. In 2013, a new Congressional Caucus (and the Resolution 51 of the House of Representatives) posits that “adding art and design” to STEM fields “encourages innovation and economic growth in the United States.” Schools often quoted as implementing this approach include the Drew Charter School in Atlanta, the Blue School in New York City and Andover Public Schools outside of Boston.

The arts are relatively peripheral in schools world-wide

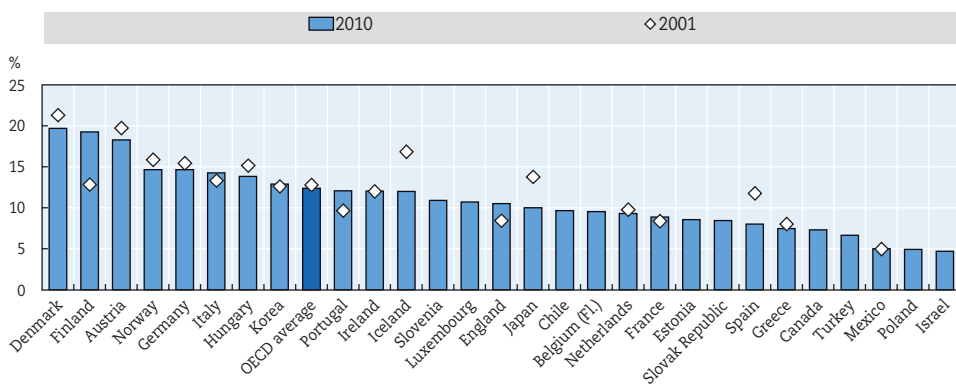
Despite their importance and centrality to human civilisation, despite policy talk on innovation and its role in global economies, and despite a host of interesting initiatives around arts education, the arts play a relatively minor role in most schools all over the world today. By and large, all school systems world-wide, both government-supported and independent, focus far more on training what are considered “academic” skills – primarily reading (and literature in the secondary years), writing, mathematics, science, history and geography (in the secondary years) – and far less on the arts. The opportunity to learn to understand and work in the visual arts, music, dance, and theatre has been grossly neglected. The arts are usually taught minimally in the early grades (e.g. at best students may have music or art class once a week for one period); at older grades, the arts are usually electives and hence only some students gain experience in the arts; and sometimes the arts are relegated to after-school, extra-curricular activities, along with participation in athletic teams. Of course there are exceptions, but we state here the general rule.

What do we know about the state of arts education world-wide? Arts are part of education policy in almost all countries in the world (Bamford, 2006). In all OECD countries, arts education is a part of the curriculum, with a focus on the major arts forms (visual arts, music, theatre, dance) (Table 1.A1.1). In particular, visual arts and music are mandatory in all OECD countries in primary and secondary education. In 2010, in public schools, 9-11 year old and 12-15 year old pupils were taught 99 and 91 hours per year in arts education on average in OECD countries for which information was available, that is, between 2 and 2.5 hours per (school) week. Arts education represented 11% (9-11 year olds) and 8% (12-15 year olds) of their mandatory intended instruction time (Figures 1.2 and 1.3). This is less than reading and literature, science, mathematics, social sciences – but much more than vocational and practical skills, technology or religion.

The lack of assessment criteria worldwide for student learning in the arts is due in part to the perceived difficulty of assessing arts learning. But this lack also reflects a common view of the arts as peripheral and as a form of entertainment rather than

as a form of serious thinking (Table 1.A1.2). In addition, how students perform in arts classes is almost never a decisive factor when it comes to deciding whether a student should repeat a grade or be promoted into academic tracks (in countries which have such tracking), as shown by recent data by the European Commission (Eurydice, 2009).

Figure 1.2. **Instruction time of arts subjects as a percentage of total compulsory instruction time for 9-11 year-olds (2001-2009)**

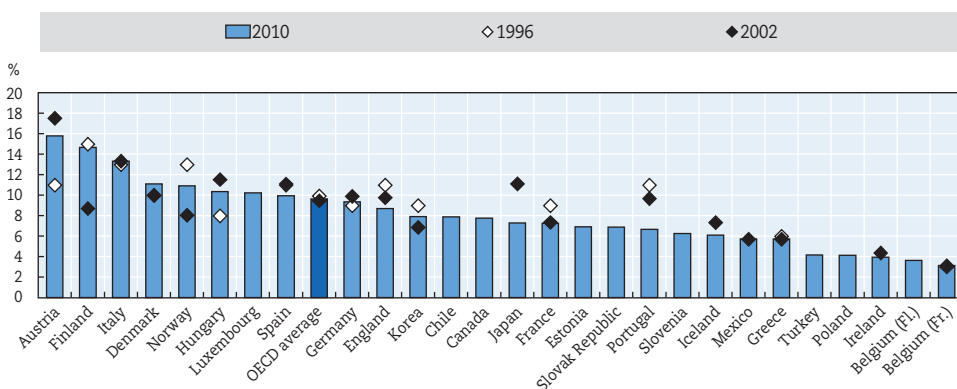


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Note: Countries are ranked in descending order of 2010 instruction time of arts subject as a percentage of total compulsory instruction time. The OECD average presented is based on countries for which information is available in 2001 and 2010.

Source: OECD (Education at a Glance 2003, 2012).

Figure 1.3. **Instruction time of arts subjects as a percentage of total compulsory instruction time for 12-14 year-olds (1996, 2002, 2009)**



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Note: Countries are ranked in descending order of 2010 instruction time of arts subject as a percentage of total compulsory instruction time. The OECD average presented is based on countries for which information is available in 2002 and 2010.

Source: OECD (Education at a Glance 1998, 2004, 2012).

In their arts education curricula, most OECD countries try of course to develop artistic skills. But interestingly, almost all of them also conceive of arts education as a way to develop more overarching skills that are not specific to the arts (Table 1.A1.3). Arts education curricula commonly seek to foster individual expression, creativity, imagination, problem solving, risk-taking, team work, and communication and presentation skills. Thus, the assumption that learning in the arts transfers to skills and behaviours outside of the arts seems to pervade arts education policy in most OECD countries. However, arts education curricula do not generally seek to foster non-arts academic skills such as reading, mathematic or scientific reasoning or problem solving.

Arts advocacy and claims about transfer effects of the arts

In the current educational climate, when education budgets are tight, and when nations compete on student test scores (e.g. Tucker, 2013), the arts risk being seen as peripheral and therefore expendable.

A 2006 report prepared by the National Assembly of State Arts Agencies in the United States stated that “study of the arts is quietly disappearing from our schools. In schools across the country, opportunities for students to participate in high-quality arts instruction and activities are diminishing, the result of shifting priorities and budget cuts” (Ruppert, 2006, p. 1). And a 2004 report from the Council for Basic Education about the role of the arts in US schools from kindergarten through the 12th grade concludes: “our survey uncovered both good news and bad news. The good news: we found strong evidence of growing commitment to mathematics, reading, writing, science, and secondary social studies. The bad news: we also saw ample evidence of waning commitment to the arts, foreign language, and elementary social studies. What’s more, we found that the greatest erosion of the curriculum is occurring in schools with high minority populations – the very populations whose access to such a curriculum has been historically most limited” (von Zastrow, 2004). The 2011 report from the President’s Committee on the Arts and the Humanities sounds the same note: “due to budget constrains and emphasis on the subjects of high stakes testing, arts instruction in schools is on a downward trend” (PCAH, 2011, p. vi).

This perception of a decline of arts education in school instruction time may not be accurate. In the past decade, on average there has been relative stability in the time devoted to arts education in countries’ (intended) instruction time. In 11 out of 18 OECD countries for which we have data for 2001 and 2010, the share of time devoted to arts education has decreased in compulsory instruction time for 9-11 year old children, but the decrease has generally been very small (0.4 percentage points on average). The same is true for 12-14 year-olds with a slight decrease in 8 countries, and a small increase by 0.2 percentage points on average between 2002 and 2010. This recent stability may hide a decrease over a longer period of time, but recent change has been limited on average. A 2012 report by the US Department of Education showed that the offering of dance and theatre in US elementary schools had dramatically decreased in the past decade: in 2010, 3% of schools offered dance,

and 4%, theatre, against 20% in 2000. However, there was no decrease for music and visual arts education, which have always represented the principal forms of arts education in US elementary schools. Thus, even in the United States, the decrease of arts education has been limited. The decline concerns some specific populations though, as the report points to inequities in access with disadvantaged students having suffered the most from the decrease (NCES, 2012).

As a result of this decrease or perceived decrease, arts educators and advocates have attempted to strengthen the position of the arts in the curriculum primarily by arguing that the arts can be used to strengthen core academic skills such as reading and mathematics (Rabkin and Redmond, 2004). Many practical guides for integrating the arts with academics can now be found (e.g. McDonald and Fisher, 2006). We have mentioned the use of the “integrated curriculum” above. In the United States, there is for example a Music in Education National Consortium². Many arts advocates argue that the arts should gain a stronger foothold in school because they help children learn to read, write, do math, and grasp scientific concepts. Another, more recent claim relates to the innovation and creativity agenda that pervades the policy talk about arts education. The US President’s Committee on the Arts and the Humanities provides a clear example of both arguments:

Students who do graduate from high school are increasingly the products of narrowed curricula, lacking the creative and critical thinking skills needed for success in post-secondary education and the workforce. In such a climate, the outcomes associated with arts education – which include increased academic achievement, school engagement, and creative thinking – have become increasingly important. Decades of research show strong and consistent links between high-quality arts education and a wide range of impressive educational outcomes. This is true even though, as in most areas where learning is complex, the research base does not yet establish causal proof (PCAH, 2011, p. v).

Our book examines the strength of the research evidence linking arts education and educational outcomes. In some cases we will display strong results, which establish causal (or close to causal) links; in other cases, we will show that current available evidence, as impressive as it may seem, does not allow making any conclusion yet.

But before presenting the scope and methodology of the book, let us take a closer look at some of these “transfer” claims. According to a 1995 report in the United States by the President’s Committee on the Arts and Humanities, “teaching the arts has a significant effect on overall success in school” (Murfee, 1993, p. 3). The report justifies this claim by noting that both verbal and quantitative SAT scores are higher for high school students who take arts courses than for those who take none. (The SAT is the exam taken for admission to US colleges and universities.) One year later, another report from the President’s Committee on the Arts and Humanities stated: “at-risk youth show increased motivation to learn and improve academically when participating in arts education programs outside of school” (Weitz, 1996).

In 1999, former US Secretary of Education, Richard Riley, stated that “the arts teach young people how to learn by giving them the first step: the desire to learn” (Fiske, 1999, p. vi). In the United States, the most recent and perhaps strongest version of such claims for the power of the arts to “transfer” to other areas beyond the arts (whether cognitive, social, or motivational) can be found in Deasy (2002), Rabkin and Redmond (2004) and Ruppert (2006). Increasingly, these claims also include references to preparing students to an innovative, global economy, establishing links with the policy talk mentioned above (e.g. Ruppert, 2010; Cheney and Jarrett Wagner, 2008, and some of the quotes above). Similar statements can also be found in Europe or the Asia-Pacific region.

The motivation for making these strong claims is clear: schools and education systems under pressure to cut the arts due to budgetary limitations would perhaps keep the arts if the arts were seen as tools to strengthen academic outcomes and other skills for innovation. But though budget cuts have spurred claims for transfer of learning from the arts, such claims in fact have a long history in educational theory (Wakeford, 2004). Given their peripheral status, there has always been a strong felt need to justify the arts in the “common curriculum.” According to Wakeford (2004, p. 85), “the philosophical origins of mass arts education...were imbued with a belief that the arts were not mere ends in themselves, but rather that they were implicated in the development of sophisticated mental faculties with both academic and practical applications.” Wakeford (2004, p. 84) points out that the kindergarten movement in the United States drew support from the theories of Heinrich Pestalozzi and Friedrich Froebel, both of whom believed in the importance of drawing for developing children’s perception and understanding. According to Efland (1990), Horace Mann was strongly influenced by Pestalozzi and believed that drawing should be part of the common curriculum not only because drawing would strengthen perception and design but also because it would develop an emotional appreciation for beauty, provide “moral uplift,” and develop communication skills and music educators defended music for its ability to improve memory and pronunciation (Keene, 1982). Inclusion of the arts in education was part of the progressive education movement’s belief in educating the whole person (Wakeford, 2004).

Along with claims that teaching the arts is a way of actually developing academic skills we find the claim that the arts are important because they motivate children. The arts are said to engage students in school activities and prevent them from dropping out; the arts are said to make school more attractive, more fun, and to help students to express themselves and find their identity. The chairman of the US National Endowment for the Arts, Rocco Landesman, was quoted in a November 2009 article in the *Wall Street Journal* as saying, “we’re going to try to move forward all the kids who were left behind by ‘No Child Left Behind’ – the kids who have talent or a passion or an idiosyncratic perspective. Those kids are important too and they should have a place in society. It is very often the arts that catches them.”³ But in an article in *Education Next*, Mark Baurerlein (2010) critiques this kind of justification for the arts: “Landesman doesn’t defend arts education as a rigorous discipline... Instead, the purpose is salvation. Some students don’t fit the NCLB [No Child Left

Behind] regime and other subjects don't inspire them. Talented but offbeat, they sulk through algebra, act up in the cafeteria, and drop out of school. The arts 'catch' them and pull them back, turning a sinking ego on the margins into a creative citizen with a 'place in society'." This kind of justification would never be made for mathematics or history – disciplines never questioned as serious subjects of study for all students.

Assessing the impact of arts education on non-arts outcomes

Before proceeding further, we discuss briefly the notion of transfer from one field (arts) to other ones, and present different assumptions that could explain the impact of arts education on non-arts outcomes. We emphasise the fact that both causal and correlational reasons could explain this impact and stress that correlation (the fact that two things are associated) should not be equated to causation (the fact that one thing leads to another thing or causes it).

What do we mean by transfer?

A brief discussion of the meaning of transfer is necessary.

A significant share of the research literature on the impact of arts education on different types of skills is based on a transfer paradigm – in line with the arts advocacy claims that we have presented above. This transfer literature represents the bulk of the research that we will review in this book. Instead of asking what skills or outcomes different kinds of arts education may lead to, many studies try to demonstrate that arts education has some impact on non-artistic outcomes measured by scores in mathematics, reading or science on standardised tests. In other cases, it can be creativity as measured by creativity tests such as the Torrance creativity tests, or academic motivation as measured by dropout (or survival) rates in school. These studies often miss measures of proximal (mediating) factors that would allow us to better understand the mechanisms through which different arts forms develop different skills that, subsequently, may have an impact on more generic academic outcomes. Consider this example. If a study finds that an arts-infused curriculum leads to improved academic performance, it would be essential to investigate mediating factors. For example, suppose that an art-infused curriculum leads students to be more motivated to attend school, and also attracts more innovative and engaged teachers. Perhaps it is these mediating factors that cause the higher test scores. This kind of more complex research is called for in the future. Or suppose that a study finds that students trained in theatre become leaders. Perhaps the proximal factor is that they have learned public speaking skills, which fosters self confidence, which in turn helps them to speak out and motivate people in a work setting. These proximal factors would need to be assessed to determine if this hypothesised causal chain is in fact what has happened.

The psychological literature on transfer is controversial, and has been reviewed in Detterman and Sternberg (1993). Transfer is often taken to refer to learning acquired in one domain that generalises to another domain. Thus the

learning of Latin was once assumed to increase general skills of learning and attention. Thorndike and Woodworth (1901) challenged this assumption when they demonstrated specificity rather than generality of learning. They concluded:

The mind is... a machine for making particular reactions to particular situations. It works in great detail, adapting itself to the special data of which it has had experience... Improvements in any single mental function rarely brings about equal improvement in any other function, no matter how similar, for the working of every mental function group is conditioned by the nature of the data of each particular case (Thorndike and Woodworth, 1901, pp. 249-250, cited in Bransford and Schwartz, 1999).

It is important to put the research on arts transfer into the context of other research on transfer. Transfer is always difficult to demonstrate. In a book entitled *Transfer on Trial* (Detterman and Sternberg, 1993), Detterman states in the introductory chapter:

First, most studies fail to find transfer. Second, those studies claiming transfer can only be said to have found transfer by the most generous of criteria and would not meet the classical definition of transfer (defined by Detterman as “the degree to which a behaviour will be repeated in a new situation”, p. 4) [...] In short... transfer is rare and its likelihood of occurrence is directly related to the similarity between two situations (p. 15).

Thus, limitations in rigorous attempts to demonstrate transfer from the arts are in no different a position from attempts to demonstrate other forms of transfer of learning.

While noting that the traditional approach to the study of transfer is to examine whether learning in one domain predicts achievement in a transfer domain, Bransford and Schwartz (1999) suggest that transfer studies should instead examine whether learning in one domain predicts greater *preparation for future learning* in a transfer domain that is a knowledge-rich environment. If we applied this to the arts, we might investigate whether learning in the visual arts makes it easier for students to master geometry concepts when they are later exposed to a geometry class (rather than whether learning in the visual arts predicts higher geometry scores before putting students in a geometry class). Similarly, one might investigate whether learning in music makes it easier for students to master arithmetical concepts when they are later exposed to a class in arithmetic (see also Terwal, van Oers, van Dijk and van den Eeden, 2009; and Greeno, Smith and Moore, 1993). This kind of “process-oriented” research, which has not yet been carried out in the area of the arts, would make a valuable contribution to our understanding of transfer of learning from the arts.

Potential causal mechanisms underlying transfer from the arts

In this book we must rely on the existing studies examining to what extent arts education transfers to other domains. What kind of causal mechanism could account for the arts’ power to percolate beyond the arts and improve cognitive,

social, and motivational aspects of students' lives? Four very different kinds of causal explanation seem possible:

- *Neurological*: learning in an art form might activate brain areas that are also involved in some form of non-arts learning;
- *Cognitive*: learning in an art form might train cognitive skills that are involved in some non-arts area;
- *Social*: learning in an art form might train social skills that are involved in some form of non-arts area;
- *Motivational or behavioural*: learning in an art form might be motivating or develop behaviours or attitudes that might spill over into other areas.

Consider the following ways in which learning in the arts might lead to develop skills or dispositions that could spill over into academic areas (discussed in more length in Winner and Cooper, 2000):

Common skills. Some art forms may develop specific skills that are useful in non-arts contexts and on which some academic domains build. For example, music education may improve the quality of hearing, including in non artistic contexts, and the improvement of this skill might then have a positive impact in other contexts in which hearing matters, for example in the study of language arts. In this case, an academic domain benefits from a skill that has been improved by training in the arts.

Entry points. The arts could serve as motivational entry points into an academic area for otherwise unmotivated or non-academically inclined students. For example, teachers might use music notation as a way into understanding fractions, they might ask students to dramatise a historical event to deepen their understanding of the event, or they might use a visual art project as a way to stimulate students to write – by asking them to write about their reflections on the project.

Self-confidence. Participation in the arts could boost the self-confidence of students – at least of those who discover they can perform well in an art form – and this could then lead to a more positive attitude towards school, and to making a greater effort at academic subjects.

Better working habits. The arts may develop discipline, perseverance, creativity, and high standards as students work on long-term projects which will be publically displayed. These working habits could then spill over into other subject areas. Of course this is only possible if instruction in an art form really does teach the skills of discipline etc. Hetland, Winner, Veenema and Sheridan (2013) analysed the teaching of five visual arts teachers and found that for example they stressed the importance of persistence. Any study testing the hypothesis that arts instruction teaches students to stick to tasks and work hard must first demonstrate that students actually learned to persevere in their art class. The next step would be to test whether this new skill percolates into other areas of the school curriculum.

Stress-reduction. Participation in the arts has been shown to lead to mood elevation (Coleman, Drake and Winner, 2011; Dalebroux, Goldstein and Winner, 2008; DePetrillo and Winner, 2005), and improved mood might allow students to return refreshed and motivated to their academic studies. It is well known that positive arousal states improve performance on cognitive tasks (Nantais and Schellenberg, 1999; Thompson, Schellenberg and Husain, 2001).

It is also important to distinguish the following three possible kinds of transfer from arts to academic outcomes.

First, instruction in an art form could lead to improvement in an academic outcome (though it strains credulity to think that arts instruction could have a stronger effect on an academic outcome than direct training in that outcome).

Second, instruction in an art form could lead to the improvement of artistic skills that also make the achievement of certain academic outcomes more likely (albeit to a lesser extent than direct training in this outcome). Arts education could then have collateral benefits and possibly be a “cost-efficient” educational option in fostering both artistic and academic outcomes.

And third, instruction in an art form when integrated with academic instruction might result in greater academic improvement than does academic instruction minus the arts. If an arts-integrated approach leads to the same level of improvement in an academic subject as does a traditional approach, we need not conclude that the arts integrated approach is a bad method. Rather, we have to conclude that this approach is no more effective than a traditional approach that does not use the arts as a motivator, hook, or entry point. In fact, as highlighted in the second case, it could be considered more effective if it achieves the same outcomes as the traditional approach but also improves arts outcomes (assuming this is not the case of the traditional approach).

It is noteworthy that the impact of different kinds of arts education on some specific skills could not only be transferred to academic domains, but also to real life situations. Let us assume that, for some students, arts education fosters self-confidence. Even if it does not transfer into better scores in mathematics, a certain level of self-confidence is typically an outcome that is valued by education policy makers and would be an interesting finding for education policy making.

Similarly, experience of public performance in an art form may lead students to better regulate their anxiety for other kinds of non-arts public performance, such as public presentations. When it takes the form of a collective practice, dance education or music education might help to foster teamwork skills. Here, transfer does not go from the arts to academic domains, but from the arts to skills that are valuable in every day life, in the labour market, or just valued by education policy makers. A few studies have examined the effects of arts training on general skills such as “attention,” and attention is one kind of general skill that may spill over to performance in the workplace.

Non-causal explanations for arts-academic correlations

It is possible that no direct causal link underlies the association between arts involvement and academic achievement. As pointed out by Winner and Cooper (2000), schools that grant the arts a central role in the curriculum may also make other kinds of reform in the way that academic subjects are taught. Such schools are likely to be ones that value innovative, constructivist, project-based academic work. In the Singaporean and British examples we have presented above, researchers observed a change in teachers' motivation and teaching practices, so that good results could not be attributed to arts education alone. Such schools may also attract the best kinds of teachers of academic subjects as well as students from families that value the arts. And families that value the arts may also value academic achievement. Thus, we cannot make causal inferences from correlational findings showing that students with arts experience are also academically strong. The presence of the arts in a school's curriculum may simply be indicative of other aspects of the school that are themselves directly linked to and causally implicated in academic improvement. Some researchers have attempted to show that putting the arts in a school transforms the entire school culture. Demonstrating transfer not only requires a strong theory of transfer, but also a good understanding of the conditions in which transfer does (or does not) occur.

Transfer claims similar to those made for the arts are also made about chess. For instance, former US Secretary of Education Terrell Bell wrote that chess is a way to develop a pre-schooler's intellect and academic readiness (Bell, 1982). School principals who have instituted chess programmes have claimed that chess improves standardized test scores, increases enthusiasm for learning, boosts self-confidence, increases school attendance rates, and fosters critical thinking and problem solving. For these very reasons, the European Parliament adopted a Written Declaration "Chess in School" in 2012 – and Armenia and Hungary are two country examples that included chess in their mandatory elementary school curriculum. When we see the same kinds of claims made enthusiastically for the arts as well as chess, we might stop and wonder – just what is the evidence base for such claims?

This report examines the existing evidence for causal transfer of learning from arts education to areas beyond the arts. As noted above, transfer of learning is notoriously difficult to demonstrate and has a long and vexed history in psychology (Barnett and Ceci, 2002; Bransford and Schwartz, 1999; Detterman, 1993; Halpern, 1998; Schwartz, Bransford and Sears, 2005). The transfer of skills from one domain to another is generally not thought to be automatic: it needs to be taught (Salomon and Perkins, 1989). Most of the studies investigating transfer from the arts have not been based on explicit teaching for transfer, where students are told to try to apply the skills developed in an art class to work outside of the arts. Thus, it is hardly surprising that in this report we document many failed attempts to demonstrate transfer. Nonetheless, we also found a few robust findings of transfer as well as promising new studies that suggest that there may indeed be certain kinds of causal connections between arts learning and cognitive and social skills.

Methods of this report

How would student learning be affected if the arts were given a more central role in our schools? What do we know about the impact that arts education could have on our children's academic achievement, their capacity to innovate, their social skills, their brain development and functioning? We do not yet have definitive answers to these questions. One reason is that the strongest way to determine whether the association between arts involvement and academic achievement is a causal one is to conduct experimental studies that allow causal inference. Very few such studies have been performed. The bulk of the research on the relationship between arts and non-arts outcomes has been correlational, undoubtedly because of the difficulty of conducting experimental research in school settings.

In 2000, in a special issue of *The Journal of Aesthetic Education*, Winner and Hetland published a set of meta-analytic studies synthesising the state of the evidence about the impact of arts education on non-arts cognition. We refer to this as the Reviewing Education and the Arts Project (REAP). Both published and unpublished studies appearing between 1950 and 1998 were identified, and the topics covered were:

- The impact of “multi-arts” study on academic achievement (grades and test scores in verbal and mathematical areas);
- The impact of “multi-arts” study on creativity;
- The impact of music on spatial skills;
- The impact of music on mathematics skills;
- The impact of music on reading skills;
- The impact of drama (theatre) on verbal skills;
- The impact of visual arts on reading;
- The impact of dance on reading;
- The impact of dance on spatial skills.

In the present book, we summarise the findings of each of these meta-analyses and then review studies on each of these topics that have appeared since 1998. We have also included studies examining cognitive outcomes not considered in the Winner and Hetland report, as well as studies examining the effects of education in specific art forms on creativity, academic motivation, social skills, and the brain.

For each topic meta-analysed by the 2000 Reviewing Education and the Arts Project (REAP) report, we include two major sections: first the conclusions of the relevant meta-analysis, and then a narrative summary of the studies located since 2000 on the outcome in question. For potential outcomes not covered in the REAP report, we provide narrative summaries of relevant studies on each outcome.

Our narrative summaries could lead to a meta-analysis of each group of studies, and we know that meta-analysis is a far better method of synthesising studies than simply tallying positive and negative findings. This is a very large and challenging task, and was therefore beyond the scope of the present project. We have provided the foundation for future meta-analyses by locating and summarising all of the relevant studies.

To identify studies not included in the REAP reports, we searched two English language data bases: Psychological Information Database (PsycINFO) and Educational Resource Information Center (ERIC) for studies (including unpublished studies such as dissertations). We also searched in the following data bases for non-English languages: Dutch, Finnish (Jykdok and Nelli), French (Persée, CAIRN, Revues.org, Erudit, JStor), German (FIS), Italian (RIVI – Banca dati riviste educative), Japanese (CiNii, MAGAZINEPLUS, Journal@rchive), Korean (RISS, KISS, National Assembly Library, DBpia, KEDI, KERIS and Thesis.or.kr), Spanish (DIALNET and SCIELO), Swedish (Libris, Swepub, SND), and Portuguese (B-on, Cienciapt.net, EBSCOhost, INE, SCIELO, Academia.edu, Repositorio of Lisbon University). The search of non-English articles covered the whole time span of the data bases.

For topics not covered by Winner and Hetland (2000) we searched for studies from 1980 to the present; for studies covered by Winner and Hetland we searched for studies from 1998 on. Each search consisted of a pairing of an art form term (visual art, theater, theatre, dance, arts) with one of the following search terms:

- *Academic outcomes:* Math*, Spatial*, Verbal*;
- *Creativity outcomes:* Creativity*, Innovation;
- *Motivational outcomes:* Engagement, Persistence, School Attitude, School Attendance, School Dropout;
- *Social skills outcomes:* Emotion Regulation, Empathy, Perspective Taking, Self Confidence, Self Efficacy, Self Esteem, Social Competence, Theory of Mind;
- *Brain outcomes:* Brain.

For the domain of music, instead of searching in data bases, we identified studies by reading recent comprehensive reviews since REAP (Moreno, Marques, Santos, Santos, Castro and Besson, 2008; Patel, 2010; Rittelmeyer, 2010; Schellenberg, 2001, 2005, 2006; Schellenberg and Moreno, 2010; Schellenberg and Peretz, 2008; Schumacher et al. 2006; Spychiger, 2001). For languages where there was little relevant empirical research, we started the search with broader terms to get more hits.

Searches on topics not covered by REAP (conducted since 1980) yielded close to 350-400 hits each, except for searches using the term “brain,” which yielded only about 50 hits for each search. Searches on topics covered by REAP (since 1998) yielded close to 150-200 hits. Almost all of the studies found were conducted in the United States. We then examined each article and discarded studies according to the following criteria:

- We discarded reports that were not empirical studies.
- We discarded studies that lacked control groups and simply reported that after studying the arts, a group of children improved (or not) on some outcome, since we cannot determine from such a report whether they would have improved even without the arts.
- We did not often include studies of strong arts programmes because these are not studies of the transfer of learning from the arts in which one kind of school (with the arts) is compared to a control school lacking the arts. Many such studies can be found and they showcase what appear to be excellent arts programmes: e.g. *Gaining the Arts Advantage: Lessons from School Districts that Value Arts Education* (Presidents Committee on the Arts and Humanities and Arts Education Partnership, 1999); *Gaining the Arts Advantage: More Lessons from School Districts that Value Arts Education* (Presidents Committee on the Arts and Humanities and Arts Education Partnership, 2000); *The Art of Collaboration: Promising Practices for Integrating the Arts and School Reform* (Arts Education Partnership) (Nelson, 2008); and *Third Space: When Learning Matters* (Arts Education partnership, 2005). Even when these programmes show high academic performance or other positive outcomes, we cannot consider them as evidence of the arts having a causal impact on academic performance. We cannot know whether the arts lead to the academic outcome or whether these programmes attract strong students and strong teachers to begin with. However, we did include these kinds of case studies when they addressed outcomes for which there is little research.
- We discarded the body of literature on the transitory effects of brief music listening (relevant to the claims about the “Mozart effect”), which was covered in detail by Hetland (2000). This decision was made because these studies examine the effects of very brief (e.g. 10 minutes) of music exposure, and we did not consider this sufficient exposure to qualify as “arts education.” While Hetland’s meta-analysis reported a positive causal relationship between music listening and transitory visual-spatial improvement, a more recent meta-analysis reports no relationship (Pietschnig, Voracek and Formann, 2010; see also Bangerter and Heath, 2004; Chabris, 1999). We also do not review here studies on the effectiveness of background music for academic performance, as we do not consider background music listening to be a form of arts education.

We mention as background information correlational (non-experimental, non-causal) studies with adult artists (for example showing that trained musicians excel in memory). We did not include such studies in our tables because our objective was to examine what is known about the effects of arts education on children and adolescents in and out of school.

The full set of studies reviewed here fall into the categories shown in Table 1.1. Table 1.1 also shows the number of studies in each category reviewed in the REAP reports and the number of studies reviewed here that were not part of the REAP reports. One academic article can report results for several categories of outcomes.

Table 1.1. **Studies reviewed in this report: Art form by outcome**

		Number of studies in REAP meta- analyses	Number of studies not in REAP meta-analyses
COGNITIVE OUTCOMES			
MULTI-ARTS	General Academic Achievement	66	35
MUSIC	General Academic Achievement	1	3
	IQ	0	13
	Reading/Speech Perception	16	43
	Non-Native Language Learning	0	1
	Math	26	11
	Visual-Spatial Skill	29	3
	Attention	0	6
	Memory	0	2
VISUAL ARTS	General academic achievement	1	3
	Reading	13	1
	Geometric/Spatial Reasoning	0	33
	Observational Skills	0	2
THEATRE	General Academic Achievement	1	3
	Verbal Skills	80	1
DANCE	General Academic Achievement	1	4
	Reading	4	0
	Visual-Spatial Skill	4	0
CREATIVITY OUTCOMES			
MULTI-ARTS	Creativity	16	3
MUSIC	Creativity	0	0
VISUAL ARTS	Creativity	0	2
THEATRE	Creativity	0	3
DANCE	Creativity	0	4
MOTIVATIONAL OUTCOMES			
MULTI-ARTS	Academic Motivation	23	12
SOCIAL SKILLS OUTCOMES			
MULTI-ARTS	Self-Concept	0	3
MUSIC	Self-Concept	0	1
	Empathy	0	2
VISUAL ARTS	Self-Concept	0	1
	Emotion Regulation	0	2
	Empathy	0	1
THEATRE	Social Behaviour	0	5
	Self-Concept	0	4
	Emotion Regulation	0	3
	Empathy	0	2
	Perspective Taking	0	6
DANCE	Self-Concept	0	3
	Social Skills	0	5

Arts as stand-alone classes vs. Arts integrated classes

Some of the studies discussed in this report examine “stand-alone” arts classes taught by specialists. Some studies examine the effects of arts integration – when art lessons are infused into an academic area to enrich and enhance learning of that topic (as for example when the visual arts are used to help children interpret a historical era). The idea of arts integration has been in the air for a long time – first advanced as a concept by Winslow (1939), who felt that all school subjects, including the arts, should be interwoven. The argument for arts integration has always been that such integration will lead to deeper and enriched academic learning (Hilpert, 1941; Wakeford, 2004). Arts integration is typically accomplished with a partnership between a school and an arts organisation that supplies visiting artists to work directly with teachers to develop arts-academic units. Such partnerships are quite common in the United States, and are increasing in number in the United States, the United Kingdom and Australia (Aprill and Burnaford, 2006). Finally some studies examine the arts as experienced in after-school programmes. Unfortunately, we found no studies that directly compare the effects of these different types of arts experience.

Preview of our conclusions

Our review leads us to the conclusion that in certain areas, there is suggestive evidence for transfer. The strongest research is in the area of music. Music education appears to strengthen Intelligence Quotient (IQ), academic performance, and phonological awareness and word decoding skills. Also strong is research on theatre. Theatre education strengthens verbal skills and may also strengthen perspective taking, empathy, and emotion regulation.

However, the claims for the transformative effects of the arts on non-arts outcomes often exceed the evidence. This does not mean that the claims are false. Rather, they have not yet been shown to be true. In some cases, the extant positive evidence is not strong or numerous enough yet to allow us to make firm conclusions. In others, the claims are not plausible as there is no good theory that could explain why arts education should have the expected effect (or there are many other plausible explanations). In some other cases, there is just no research.

We did not find support for the kinds of claims that we typically hear made about the arts – that infusing the arts in our schools improves academic performance in the form of higher verbal and mathematical test scores and better grades and makes children more innovative thinkers. It is here that we have to conclude: not yet proven! Moreover, even in the areas where we report suggestive promising evidence, we stress the need for experimental studies where causality can be concluded.

Conceptual issues

Research on the impact of arts education needs to begin with a strong analysis of the habits of mind engendered by a particular art form. Such an analysis then leads to clear hypotheses about what is learned in that art form, and what kinds of learning may be broad enough to spill over into non-arts areas of the curriculum. Some studies that we review (e.g. examining the effect of music instruction on language, and drama instruction on social-cognitive skills) have followed this approach: they have investigated other outcomes besides test scores, and have yielded promising insights into the power that the arts can have in our schools.

Methodological issues

As mentioned, one reason for the weakness of the evidence thus far is due to the difficulty of doing experimental work in schools. As described in Box 1.1, to really determine whether the arts are having a causal impact on some hypothesised outcome, it is generally necessary to carry out a true experiment, using the kind of “medical” randomised controlled trial model used to test the effectiveness of a drug. Students would need to be randomly assigned to either an arts education “treatment” or to another kind of “treatment.” Without random assignment, the arts and control groups may not in fact be comparable. For example, those in the arts group may be stronger to begin with (or have a different cognitive profile from those in the non-arts group); or those in the art group may have more effective and innovative teachers. With a few exceptions (e.g. Schellenberg, 2004), these kinds of true experiments have not been carried out to test the impact of the arts on non-arts outcomes. Most of the studies conducted on transfer from the arts have been correlational (the majority) or quasi-experimental (without random assignment of participants, and hence subject to the criticism that students who self-select into an art form have pre-existing superior skills in some area, rather than having skills that are developed into superior form by training in an art form).

In a correlational study, students are not tested on an outcome before and after an arts education experience. Rather, students with much arts exposure are compared to those with little arts exposure on some outcome. Often (but not always), those with arts exposure score higher on the outcome(s) assessed. The problem with correlational studies, of course, is that we cannot infer any causality. For example, a study by Catterall (1998) (featured in Box 2.2) reported that students involved in the arts do better in school and also spend less time watching television than do students with low arts involvement. It is tempting to conclude that the strong academic achievement of these students is due to the arts education they received. But of course their achievement might equally be due to spending less time with television, or to any other of the many differences distinguishing the high vs. the low arts-involved students.

Box 1.1. **Methodological issues in the study of transfer of learning from the arts**

We sought in this report to keep the following methodological issues in mind, issues that were discussed at length by Winner and Hetland (2000). A few other resources discussing different methods to demonstrate causal inference and assessing the strength of different kinds of evidence in educational settings can also be mentioned: National Research Council (2002, 2004); Schneider, Carnoy, Kilpatrick, Schmidt and Shavelson (2007); OECD (2007).

Only studies with a true experimental design, with random assignment of students and teachers to arts vs. non-arts groups, can allow a causal inference. True experimental research means random assignment of students and teachers to arts vs. control classrooms. However, this is nearly impossible to carry out in the real and messy world of schools. Researchers must therefore adopt quasi-experimental methods. This can be done by assigning classrooms to an arts vs. a non-arts focus, but this requires the schools to cooperate. More often, researchers are forced simply to evaluate an existing arts programme by comparing it to an appropriate comparison programme that does not stress the arts. The key issue here is the nature of the comparison group. In order for clear conclusions to be drawn, the two programmes need to have students matched at pretest on the outcome in question, and need to have teachers of similar quality. Matching teachers is extremely difficult because schools that are strong in the arts are likely to attract a different kind of teacher (more progressive, probably) than do schools that give short shrift to the arts. It is also important to insure that the teaching in the two programmes does not differ in other respects besides the role given to the arts. If the arts oriented programme has more project learning and stresses more critical thinking than does the comparison classroom, we cannot know whether differences in outcome that favor the arts programme are due to the arts emphasis or to the project/critical thinking emphasis.

To evaluate the effects of a new arts programme, the ideal comparison group is one in which some other new kind of programme has been instituted (e.g. an arts programme vs. a chess programme). This is because any new programme is likely to have positive initial effects. The inspirational/energising effect of a new programme is called the “Hawthorne effect” (Cook and Campbell, 1979).

Most studies examining the relationship between arts instruction and some other non-arts outcome are correlational in design, demonstrating that students who have chosen to study the arts score higher on some non-arts outcome than are those who do not study the arts. However, such a result tells us nothing about whether or how arts learning caused the improved outcome. Studying an art form could indeed causally strengthen other areas of behaviour due to habits of learning developed in excellent arts courses (e.g. persistence, reflection, observation), which could then transfer to other areas of the curriculum. And arts instruction could cause improved behaviour in other areas because students who study the arts become more motivated and engaged in school. But it is equally possible that correlational findings are due to no causal relationship at all. Students who are academic achievers may attend schools strong in both academics and the arts; they may come from families that value both academics and the arts; they may be strong enough academically to have time left over for the arts (and have parents and teachers who therefore encourage them to study the arts); or they may simply be students who are strong in both academics and the arts. The fact that they are strong academically means they would have more free time for the arts, and might lead parents to encourage them to use their extra time by studying one or more art forms.

Dangers of instrumental claims

The studies we review in this report all focused on some hypothesised extrinsic effects of arts education, probably because of the felt need to justify the arts in the basic curriculum by something other than the intrinsic benefits of the arts. But instrumental justifications for the arts can be self-defeating, as we point out in our conclusions. Instrumental arguments can lead to weakening the role of the arts in schools if, for example, the arts are not shown to lead to higher academic achievement, or if they are shown to do so less effectively than direct academic instruction. Some researchers have begun to veer away from instrumental justifications, arguing that we must think carefully about the intrinsic effects of arts education, effects which are unique to the arts. A cogent case for a refocus on arts education's intrinsic value has been made by McCarthy et al. (2004), and we return to this point in the conclusion to this report.

Notes

1. Competences are defined as the combination of knowledge, skills and attitudes appropriate to the context. The eight key competences are: 1) communication in the mother tongue; 2) communication in foreign languages; 3) mathematical competence and basic competences in science and technology; 4) digital competence; 5) learning to learn; 6) social and civic competence; 7) sense of initiative and entrepreneurship; and 8) cultural awareness and expression. The Recommendation notes that “the key competences are all considered as equally important, because each of them can contribute to a successful life in a knowledge society”.
2. <http://music-in-education.org/2010/03/4th-graders-study-music-math-and-composition>.
3. <http://online.wsj.com/article/SB10001424052748703932904574511320338376750.html>.

References

- Aprill, A. and G. Burnaford (2006), “Long term arts education partnerships as an effective strategy for systemic school improvement”, presented at World Conference on Arts Education, UNESCO, Lisbon, March, http://portal.unesco.org/culture/en/files/29792/11380325291Arnold_Aprill_and_Gail_Burnaford.htm/Arnold%2BAprill%2BAnd%2BGail%2BBurnaford.htm.
- Avvisati, F., G. Jacotin and S. Vincent-Lancrin (2013), “Educating higher education students for innovative economies: What international data tell us”, *Tuning Journal for Higher Education*, Vol. 1/1.
- Bamford, A. (2006), *The Wow Factor: The Global Research Compendium on the Impact of Arts in Education*, Waxmann Münster, Berlin.

- Bangerter, A. and C. Heath (2004), "The Mozart effect: Tracking the evolution of a scientific legend", *British Journal of Social Psychology*, Vol. 43/4, pp. 605-623.
- Barnett, S.M. and S.J. Ceci (2002), "When and where do we apply what we learn? A taxonomy for far transfer", *Psychological Bulletin*, Vol. 128/4, pp. 612-637.
- Bauerlein, M. (2010), "Advocating for arts in the classroom: Academic discipline or instrument of personal change?", *Education Next*, Vol. 10/4, <http://educationnext.org/advocating-for-arts-in-the-classroom/>.
- Bell, T. (1982), *Your Child's Intellect*, Prentice Hall, Englewood Cliffs, NJ, pp. 178-179.
- Bransford, J.D. and D.L. Schwartz (1999), "Rethinking transfer: A simple proposal with multiple implications", *Review of Research in Education*, Vol. 24/2, pp. 61-100.
- Carey, N., B. Kleiner, R. Porch, E. Farris and S. Burns (2002), *Arts Education in Public Elementary Schools 1999-2000*, NCES 2002-131, US Department of Education.
- Catterall, J. and L. Waldorf (1999), "Chicago Arts Partnerships in Education: Summary evaluation" in E.B. Fiske (ed.), *Champions of Change: The Impact of the Arts on Learning*, Washington, DC, pp. 47-62, available from the Arts Education Partnership, www.aep-arts.org/PDF%20Files/ChampsReport.pdf.
- Catterall, J., R. Chappleau and J. Iwanaga (1999), "Involvement in the arts and human development: General involvement and intensive involvement in music and theatre arts" in E. Fiske (ed.), *Champions of Change: The Impact of the Arts on Learning*, The Arts Education Partnership and The President's Committee on the Arts and the Humanities, Washington, DC, pp. 1-18.
- Catterall, J.S. (1998), "Involvement in the arts and success in secondary school", *Americans for the Arts Monographs*, Vol. 1/9, Washington, DC.
- Chabris, C. (1999), "Prelude or requiem for the Mozart effect?", *Nature*, Vol. 400, pp. 826-827.
- Cheney, S. and S. Jarrett Wagner (2008), "Getting past either-or. A feasibility study: arts, innovation, and the role of business champions", *The Manufacturing Institute and National Center for the American Workforce*, Washington, DC.
- Coleman, K., J. Drake and E. Winner (in press), "Short-term mood repair through art: Effects of medium, and strategy", *Journal of the American Art Therapy Association*, Art Therapy.
- Cook, T. and D. Campbell (1979), *Quasi-Experimentation: Design and Analysis Issues for Field Settings*, Houghton Mifflin, Boston.
- Creativity, Culture and Education (CCE) (2012), *Research Digest: 2006-2012*, Newcastle www.creativitycultureeducation.org/wp-content/uploads/Changing-Young-Lives-Research-Digest-2012.pdf.

- Dalebroux, A., T. Goldstein and E. Winner (2008), "Short-term mood repair through art-making: Positive emotion is more effective than venting", *Motivation and Emotion*, Vol.32/4, pp. 288-295.
- De Petrillo, L and E. Winner (2005), "Does art improve mood? A test of a key assumption underlying art therapy", *Journal of the American Art Therapy Association*, Vol. 22/4, Art Therapy.
- Deasy, R.J. (ed.) (2002), *Critical links: Learning in the arts and student academic and social development*, Arts Education Partnership, Washington, DC.
- Detterman, D.K. (1993). "The case for the prosecution: Transfer as an epiphenomenon" in D.K. Detterman and R.J. Sternberg (eds.), *Transfer on Trial: Intelligence, Cognition, and Instruction*, Ablex, Norwood, NJ, pp. 1-24.
- Detterman, D.K. and R.J. Sternberg (eds.) (1993), *Transfer on Trial: Intelligence, Cognition, and Instruction*. Ablex, Norwood, NJ.
- Drake, J.E., K. Coleman and E. Winner (2011), "Short-term mood repair through art: Effects of medium, and strategy", *Art Therapy: Journal of the American Art Therapy Association*, Vol. 28/1, pp. 26-30.
- Efland, A.D. (1990), *A History of Art Education: Intellectual and Social Currents in Teaching the Visual Arts*, Teachers College Press, New York.
- Eurydice (2009), *Arts and Cultural Education at School in Europe*, Brussels.
- Fiske, E.B. (ed.) (1999), *Champions of Change: The Impact of Arts on Learning*, The Arts Education Partnership and The President's Committee on the Arts and the Humanities, Washington, DC.
- Gardner, H. (1983), *Frames of minds*, Basic Books, New York.
- Gardner, H. (1993), *Multiple Intelligences*, Basic Books, New York.
- Gardner, H. (2006), *Five Minds for the Future*, Harvard Business School Press, Cambridge, MA.
- Greeno, J.G., D.R. Smith and J.L. Moore (1993), "Transfer of situated learning" in D.K. Detterman and R.J. Sternberg (eds.), *Transfer on Trial: Intelligence, Cognition, and Instruction*, pp. 99-167, Norwood, NJ, Ablex.
- Halpern, D.F. (1998). "Teaching critical thinking for transfer across domains", *American Psychologist*, Vol. 53/4, pp. 449-455.
- Hetland L. (2000), "Learning to make music enhance spatial reasoning", *Journal of Aesthetic Education*, Vol. 34/3-4, pp. 179-238.
- Hetland, L. and E. Winner (2001), "The arts and academic achievement: What the evidence shows", *Arts Education Policy Review*, Vol. 102/5, pp. 3-6.

- Hetland, L. and E. Winner (2004), "Cognitive transfer from arts education to non-arts outcomes: Research evidence and policy implications" in E. Eisner and M. Day (eds.), *Handbook of Research and Policy in Art Education*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 135-161.
- Hetland, L., E. Winner, S. Veenema and K. Sheridan (2013), *Studio thinking 2: The real benefits of visual arts education*, 2nd edition, Teachers College Press, New York City. First edition: 2007.
- Hilpert, R.S. (1941), "Changing emphasis in school art programs", *Fortieth Yearbook of the National Society for the Study of Education: Art in American Life and Education*, Public School Publishing Company, Bloomington, IL.
- Keene, J.A. (1982), *A History of Music Education in the United States*, University Press of New England, Hanover, NH.
- McCarthy, K.F., E.H. Ondaatje, L. Zakaras and A. Brooks (2004), *Gifts of the Muse: Reframing the Debate about the Benefits of the Arts*, RAND Corporation, Santa Monica, CA.
- McDonald, N.L and D. Fisher (2006), *Teaching Literacy Through the Arts*, Guilford Press.
- Moreno S., C. Marques, A. Santos, M. Santos, S.L. Castro and M. Besson (2009), "Musical training influences linguistic abilities in 8-year-old children: More evidence for brain plasticity". *Cerebral Cortex*, Vol. 19/3, pp. 712-723.
- Murfee, E. (1993), *The Value of the Arts*, President's Committee on the Arts and the Humanities, National Endowment for the Arts, Washington DC.
- Nantais, K.M. and E.G. Schellenberg (1999), "The Mozart effect: An artifact of preference", *Psychological Science*, Vol. 10/4, pp. 370-373.
- National Center for Education Statistics (NCES) (2012), *Arts Education in Public Elementary and Secondary Schools: 1999-2000 and 2009-10*, Washington DC.
- National Research Council (2002), *Scientific Research in Education*, National Academy Press, Washington, DC.
- National Research Council (2004), *Advancing Scientific Research in Education*, National Academy Press, Washington, DC.
- Nelson, A. (2008), *The Art of Collaboration: Promising Practices for Integrating the Arts and School Reform*, Arts Education Partnership Policy Brief, Washington, DC.
- OECD (2007), *Evidence in Education: Linking Research and Policy*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264033672-en>.
- OECD (2010), *The OECD Innovation Strategy: Getting a Head Start on Tomorrow*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264083479-en>.

- OECD (2012), *Education at a Glance 2012: OECD Indicators*, OECD Publishing, <http://dx.doi.org/10.1787/eag-2012-en>.
- Patel, A.D. (2010), "Music, biological evolution, and the brain" in M. Bailar (ed.), *Emerging Disciplines*. pp. 91-144, Rice University Press, Houston, TX.
- President's Committee on the Arts and the Humanities (PCAH) (2011), *Reinvesting in Arts Education: Winning America's Future Through Creative Schools*, Washington, DC.
- Perkins, D.N. (1993), "The connected curriculum", *Educational Leadership*, Vol. 51/2, pp. 90-91.
- Pietschnig, J., M. Voracek, M. and A.K. Formann (2010), "Mozart effect: A meta-analysis", *Intelligence*, Vol. 38/3, pp. 314-323.
- President's Committee on the Arts and the Humanities (2011). *Reinvesting in Arts Education: Winning America's Future Through Creative Schools*, Washington, DC, www.pcah.gov.
- Rabkin, N. and R. Redmond (eds.) (2004), *Putting the Arts in the Picture: Reframing Education in the 21st Century*, Columbia College, Chicago.
- Rittelmeyer, C. (2010), *Warum und wozu ästhetische Bildung? Über transferwirkungen künstlerischer Tätigkeiten. Ein Forschungsüberblick*, Athena Verlag, Oberhausen.
- Rosenthal, R. (1991), *Meta-Analytic Procedures for Social Research*, Sage Publication, Newbury Park, CA.
- Ruppert, S. (2006), *Critical Evidence: How the Arts Benefit Student Achievement*, National Assembly of State Arts Agencies.
- Ruppert, S. (2010), "Creativity, innovation and arts learning. Preparing all students for success in a global economy", *Arts Education Partnerships*, www.aep-arts.org/wp-content/uploads/2011/12/CreativityCommentary_02-03-10.pdf.
- Salomon, G. and D.N. Perkins (1989), "Rocky roads to transfer: Rethinking mechanisms of a neglected phenomenon", *Educational Psychologist*, Vol. 24/2, pp. 113-142.
- Schellenberg, E.G. (2001), "Music and nonmusical abilities", *Annals of the New York Academy of Science*, Vol. 930, pp. 355-371.
- Schellenberg, E.G. (2004), "Music Lessons Enhance IQ", *Psychological Science*, Vol. 15/8, pp. 511-514.
- Schellenberg, E.G. (2005), "Music and cognitive abilities", *Current Directions in Psychological Science*, Vol. 14/6, pp. 322-325.
- Schellenberg, E.G. (2006), "Long-term positive associations between music lessons and IQ", *Journal of Education Psychology*, Vol. 98/2, pp. 457-468.

- Schellenberg, E.G. and S. Moreno (2010), "Music lessons, pitch processing, and g", *Psychology of Music*, Vol. 38/2, pp. 209-221.
- Schellenberg, E.G. and I. Peretz (2008), "Music, language, and cognition: Unresolved issues", *Trends in Cognitive Sciences*, Vol. 12/2, pp. 45-46.
- Schneider, B., M. Carnoy, J. Kilpatrick, W.H. Schmidt and R.J. Shavelson (2007), *Estimating Causal Effects Using Experimental and Observational Designs*, American Educational Research Association, Washington, DC.
- Schober, D., C. Schober and F. Astleithner (2007), "Evaluation über die Förderungstätigkeit von Kulturkontakt Austria im Rahmen der "Dialogveranstaltungen"", NPO-Institute, Vienna.
- Schumacher, R with E. Altenmüller, W. Deutsch, L. Jäncke, A.C. Neubauer, A. Fink, G. Schwarzer, M. Spychiger, E. Stern and O. Vitouch (2006), *Macht Mozart schlau? Die förderung kognitiver kompetenzen durch music*, Bundesministerium für Bildung und Forschung (BMBF), Bonn, Germany, www.bmbf.de/pub/macht_mozart_schlau.pdf.
- Schwartz, D.L., J.D. Bransford and D. Sears (2005), "Efficiency and innovation in transfer" in J.P. Mestre (ed.), *Transfer of Learning from a Modern Multidisciplinary Perspective*, Information Age Publishing, pp. 1-51.
- Spychiger, M. (2001), "Was bewirkt Musik? Probleme der Validität, der Präsentation und der Interpretation bei Studien über außermusikalische Wirkungen musikalischer Aktivität" in H. Gembris, R.-D. Kraemer and G. Maas (eds.), *Musikpädagogische Forschungsberichte*, Bd. 8, Wißner, Augsburg, pp. 13-37.
- Tan, L.S. and L.D. Ponnusamy (forthcoming), "Weaving and anchoring the arts into curriculum: The evolving curriculum processes" in C. H. Lum (ed.), *Contextualised Practices on Arts education: An International Dialogue on Singapore Arts Education*, Springer, Dordrecht.
- Terwal, J., B. van Oers, I. van Dijk and P. van den Eeden (2009), "Are representations to be provided or generated in primary mathematics education? Effects on transfer", *Educational Research and Evaluation*, Vol. 15/1, pp. 25-44.
- Thompson, W.F., E.G. Schellenberg and G. Husain (2001), "Arousal, mood, and the Mozart effect", *Psychological Science*, Vol. 12/3, pp. 248-251.
- Trilling, B. and C. Fadel (2009), *21st Century Skills. Learning for Life in Our Times*, Jossey-Bass, San Francisco.
- Tucker, M.S. (ed.) (2013), *Surpassing Shanghai. An Agenda for American Education Built on the World's Leading Systems*, Harvard Education Press, Cambridge, MA.
- UNESCO Institute for Statistics: UNESCO Institute for Statistics, <http://www.uis.unesco.org/Pages/default.aspx> (accessed March 2013).

- Von Zastrow, C. with H. Janc (2004), *Academic Atrophy: The Condition of the Liberal Arts in America's Public Schools*, Council for Basic Education.
- Wakeford, M. (2004), "A short look at a long past" in N. Rabkin and R. Redmond (eds.), *Putting the Arts in the Picture: Reframing Education in the 21st Century*, Columbia College Chicago. pp. 81-102.
- Weitz, J.H. (1996), *Coming Up Taller: Arts and Humanities Programs for Children and Youth at Risk*, President's Committee on the Arts and Humanities, Washington, DC.
- Winner, E. and L. Hetland (2000), "Beyond the Soundbite: Arts Education and Academic Outcomes", *Conference Proceedings from "Beyond the Soundbite: What the Research Actually Shows About Arts Education and Academic Outcomes"*, J. Paul Getty Trust, Los Angeles www.getty.edu/foundation/pdfs/soundbite.pdf.
- Winner, E. and M. Cooper (2000), "Mute those claims: No evidence (yet) for a causal link between arts study and academic achievement", *Journal of Aesthetic Education*, Vol. 34/3-4, pp. 11-75.
- Winner, E. and L. Hetland (2000a). "Introduction. The arts in education: Evaluating the evidence for a causal link", *Journal of Aesthetic Education*, Vol. 34/3-4, pp. 3-10.
- Winner, E. and L. Hetland (2000b), "Does studying the arts enhance academic achievement? A mixed picture emerges. Commentary", *Education Week*, November 1, pp. 64-46.
- Winslow, L.L. (1939), *The Integrated School Art Program*, McGraw Hill, New York City.

ANNEX 1.A1

Supplementary tables and figures

Table 1.A1.1. Status of arts classes in the national curriculum, ISCED 1 and 2 (2013)

	Visual arts		Music		Drama		Dance		Craft		Media arts		Architecture	
	1	2	1	2	1	2	1	2	1	2	1	2	1	2
ISCED														
Australia	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		
Austria	▲	▲	▲	▲	▲	Δ	Δ	-	-	▲	▲	Δ	Δ	
Belgium (De.)	▲	▲	▲	▲			-	-						
Belgium (Fr.)	▲	▲	▲	▲	Δ	Δ			Δ	Δ				
Belgium (Fl.)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		▲
Canada (Ontario)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲				
Canada (Québec)	▲	▲	▲	▲	▲	▲	▲	▲						
Chile	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Czech Republic	▲	▲	▲	▲	▲	Δ	Δ	Δ	Δ	Δ	▲	▲		
Denmark	▲	Δ	▲	Δ	Δ				▲	Δ	Δ			
Finland	▲	▲	▲	▲	-	-	-	-	▲	▲	▲	▲	▲	▲
France	▲	▲	▲	▲	-	-	-	-	▲	▲	▲			
Germany	▲	▲	▲	▲	Δ	Δ	Δ	Δ	▲	▲				
Greece	▲	▲	▲	▲	▲	▲	-	-	▲	▲			▲	▲
Hungary	▲	▲	▲	▲	▲	▲	▲	▲			▲			
Iceland	▲	Δ	▲	Δ	▲	Δ	▲	Δ	▲	Δ				
Ireland	▲	Δ	▲	Δ	▲	Δ	-	Δ	Δ		-			
Israel	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Italy	▲	▲	▲	▲					▲	▲				
Japan	▲	▲	▲	▲			-	-	▲	▲				
Korea	▲	▲	▲	▲			-	-	▲	▲				
Luxembourg	▲	▲	▲	▲					▲	▲				
Mexico	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Netherlands	O	O	O	O	O	O	O	O	O	O	O	O	O	O
New Zealand	▲	▲	▲	▲	▲	▲	▲	▲						
Norway	▲	▲	▲	▲	▲	▲	-	-	▲	▲	-	-	▲	▲
Poland	▲	▲	▲	▲	-	-	-	-			-	-		
Portugal	▲	▲	▲	Δ	Δ	Δ	Δ	Δ						
Slovak Republic	▲	▲	▲	▲	Δ	Δ	Δ	Δ						
Slovenia	▲	▲	▲	▲	-	-	-	-	-	-	Δ	Δ		
Spain	▲	▲	▲	▲	▲	Δ	-	-	Δ	▲	▲	▲		
Sweden	▲	▲	▲	▲	-	-	-	-	▲	▲	-	-	-	-
Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Turkey	m	m	m	m	m	m	m	m	m	m	m	m	m	m
UK -England	▲	▲	▲	▲	-	-	-	-	▲	▲				
UK -Northern Ireland	▲	▲	▲	▲	-	-	-	-	▲	▲				
UK -Scotland	▲	▲	▲	▲	▲	▲	-	-						
UK -Wales	▲	▲	▲	▲	-	-	-	-	▲	▲				
United States	▲	▲	▲	▲	▲	▲	▲	▲						
Partner countries														
Bulgaria	▲	▲	▲	▲	-	-	▲	Δ	▲	▲	Δ	▲	Δ	Δ
Estonia	▲	▲	▲	▲			-	-	▲	▲	-	-	▲	▲
Latvia	▲	▲	▲	▲			-	-	-	-	-	-		
Liechtenstein	▲	▲	▲	▲	Δ	Δ	-	-	▲	▲				
Lithuania	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲				
Malta	▲	▲	▲	▲	▲	▲	-	-	▲	▲				
Romania	▲	▲	▲	▲										

Notes: ▲ : Compulsory arts subject or part of the compulsory arts curriculum; Δ : Optional arts subject; - : Part of another compulsory non-arts subject; O : Institutional autonomy; m = missing data; Empty cell: not included in the curriculum.

Source: Extended and updated by OECD countries. Based on Eurydice for European countries and government policy papers for non-European countries.

Table 1.A1.2. **Assessment criteria for arts subjects, ISCED Levels 1 and 2 (2013)**

		ISCED1 and 2
OECD countries	Australia	-
	Austria	-
	Belgium (De.)	-
	Belgium (Fr.)	-
	Belgium (Fl.)	-
	Canada (Ontario)	▲
	Canada (Québec)	▲
	Chile	m
	Czech Republic	-
	Denmark	▲
	Finland	▲
	France	▲
	Germany	-
	Greece	-
	Hungary	-
	Iceland	-
	Ireland	m
	Israel	-
	Italy	-
	Japan	-
	Korea	-
	Luxembourg	-
	Mexico	m
	Netherlands	-
	New Zealand	▲
	Norway	-
	Poland	-
	Portugal	▲
	Slovak Republic	-
	Slovenia	▲
	Spain	-
	Sweden	▲
	Switzerland	m
Turkey	m	
UK -England	▲	
UK -Northern Ireland	-	
UK -Scotland	▲	
UK -Wales	▲	
United States	▲	
Partner countries	Bulgaria	▲
	Estonia	-
	Latvia	-
	Liechtenstein	-
	Lithuania	-
	Malta	▲
Romania	▲	

Note: ▲: Existence of assessment criteria for arts subjects; -: No criteria for arts subjects; m = missing data; Sweden: assessment criteria were defined for grades 6 and 9 in 2011-12, and assessment per se with grades started in 2012-13 in grade 6.

Source: Extended and updated by OECD countries. Based on Eurydice for European countries and government policy papers for non-European countries.

Table 1.A1.3. **Aims and objectives of arts education, ISCED 1 and 2 (2013)**

		Artistic perspective												Ability Development																	
		Artistic skills, knowledge and understanding		Critical appreciation (aesthetic judgement)		Cultural heritage (national identity)		Cultural diversity (European identity/world awareness)		Enjoyment/pleasure/satisfaction/joy		Variety and diversity of arts: engaging with a variety of art forms/ media		Art and lifelong learning/interest		Identifying artistic potential (aptitude/talent)		Individual expression/identity/ development		Creativity (imagination, problem solving, risk-taking)		Social skills/group working/ socialisation/ cooperative working		Communication skills		Performing/presenting (sharing pupils' own artistic work)		Environmental awareness/ conservation/sustainability/ecology		Self-confidence/esteem	
ISCED		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
	Australia	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Austria	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Belgium (De.)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Belgium (Fr.)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Belgium (Fl.)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Canada (Ontario)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Canada (Québec)																														
	Chile	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	
	Czech Republic	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	Denmark	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	Finland	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	France	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	Germany	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Greece	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	Hungary	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Iceland	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Ireland	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Israel	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	
	Italy	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Japan	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Korea	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Luxembourg	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Mexico	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	
	Netherlands	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	New Zealand	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Norway	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	Poland	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Portugal	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Slovak Republic	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Slovenia	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	

Note: m = missing data; Empty cell: not a specified objective of arts education.

Source: OECD, based on Eurydice framework.

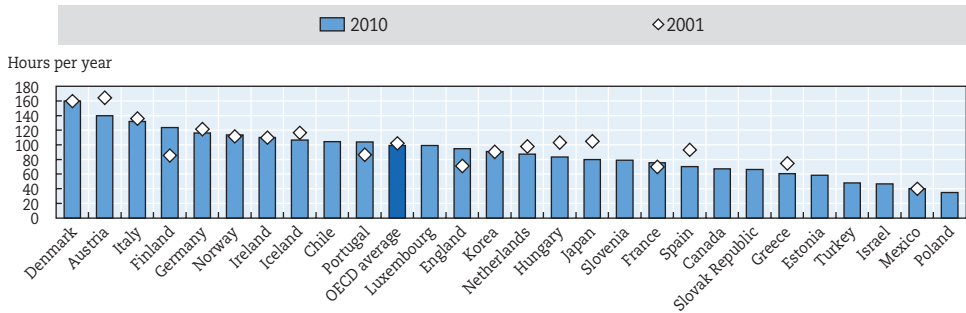
Table 1.A1.3. **Aims and objectives of arts education, ISCED 1 and 2 (2012)** (continued)

		Artistic perspective												Ability Development																	
		Artistic skills, knowledge and understanding		Critical appreciation (aesthetic judgement)		Cultural heritage (national identity)		Cultural diversity (European identity/world awareness)		Enjoyment/pleasure/satisfaction/joy		Variety and diversity of arts; engaging with a variety of art forms/ media		Art and life long learning/interest		Identifying artistic potential (aptitude/talent)		Individual expression/identity/ development		Creativity (imagination, problem solving, risk-taking)		Social skills/group working/ socialisation/ cooperative working		Communication skills		Performing/presenting (sharing pupils' own artistic work)		Environmental awareness/ conservation/sustainability/ecology		Self-confidence/esteem	
ISCED		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
OECD countries	Spain	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	Sweden	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Turkey	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	UK - England	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	UK - N. Ireland	▲	▲	▲	▲	▲	▲	▲	▲			▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	UK - Scotland	▲	▲	▲	▲	▲	▲			▲	▲	▲	▲			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	UK - Wales	▲	▲	▲	▲	▲	▲	▲	▲			▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲		▲	▲		
	United States	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Partner countries	Bulgaria	▲	▲			▲	▲	▲	▲					▲	▲			▲	▲			▲	▲	▲	▲			▲	▲		
	Estonia	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲							▲	▲	▲	▲					▲	▲				
	Latvia	▲	▲	▲	▲	▲	▲	▲	▲			▲	▲			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	Liechtenstein	▲	▲	▲	▲	▲	▲	▲	▲			▲	▲					▲	▲							▲	▲				
	Lithuania	▲	▲												▲	▲			▲	▲					▲	▲					
	Malta	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲							▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	Romania	▲	▲	▲	▲	▲	▲	▲	▲									▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲

Note: m = missing data; Empty cell: not a specified objective of arts education.

Source: Extended and updated by OECD countries. Based on Eurydice for European countries and government policy papers for non-European countries.

Figure 1.A1.1. **Number of hours per year of arts subject in compulsory instruction for 9-11 year-olds in the OECD area (2001, 2010)**

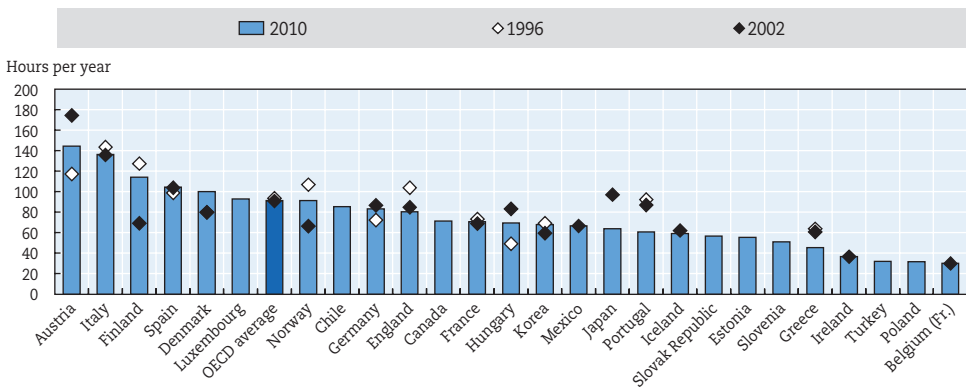


StatLink <http://dx.doi.org/10.1787/888932832934>

Note: Countries are ranked in descending order of 2010 instruction time of arts subject as a percentage of total compulsory instruction time. The OECD average presented is based on countries for which information is available in 2001 and 2010.

Source: OECD (Education at a Glance 2003, 2012).

Figure 1.A1.2. **Number of hours per year of arts subject in compulsory instruction for 12-14 year-olds in the OECD area (1996, 2002, 2010)**

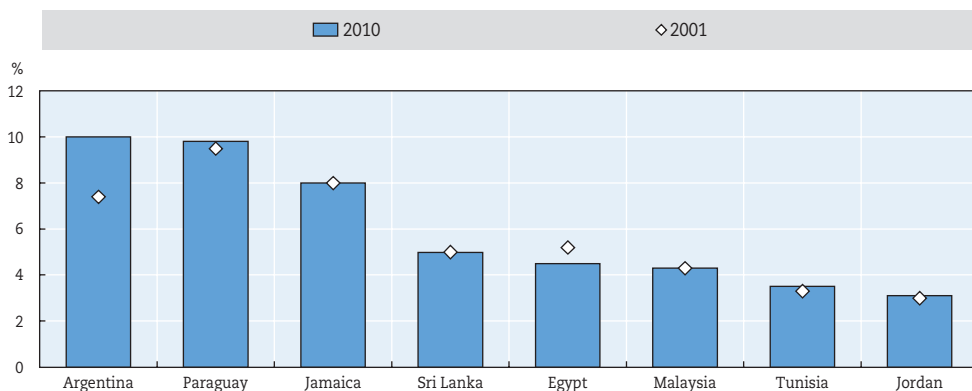


StatLink <http://dx.doi.org/10.1787/888932832953>

Note: Countries are ranked in descending order of 2010 instruction time of arts subject as a percentage of total compulsory instruction time. The OECD average presented is based on countries for which information is available in 2002 and 2010.

Source: OECD (Education at a Glance 1998, 2004, 2012).

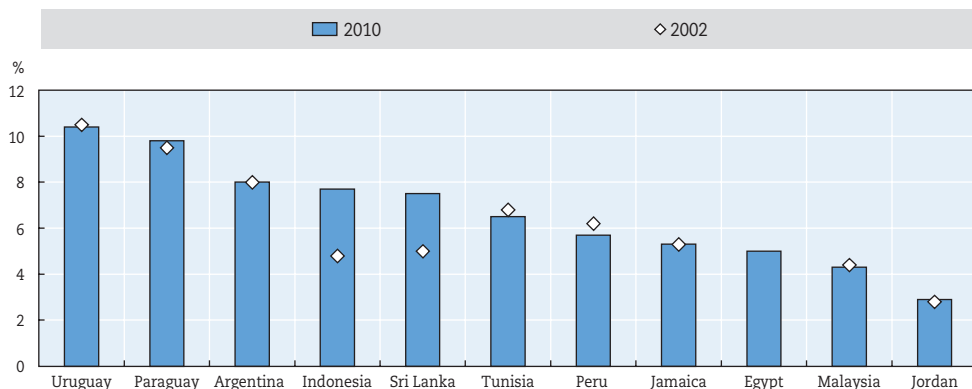
Figure 1.A1.3. **Instruction time of arts subject as a percentage of total compulsory instruction time for 9-11 year-olds in partner countries (2001, 2010)**



StatLink <http://dx.doi.org/10.1787/888932832972>

Source: Unesco Institute of Statistics.

Figure 1.A1.4. **Instruction time of arts subject as a percentage of total compulsory instruction time for 12-14 year-olds in partner countries (2002, 2010)**



StatLink <http://dx.doi.org/10.1787/888932832991>

Source: Unesco Institute of Statistics.



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