



Art for Art's Sake?

OVERVIEW



Centre for Educational Research and Innovation

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by

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This overview is a slightly modified version of the conclusive chapter of *Art for Art's Sake? The Impact of Arts Education*.

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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? By examining the state of empirical knowledge about the impact of arts education on these different kinds of skills, these are the questions that we try to answer in *Art for Arts's Sake? The Impact of Arts Education* (Winner, Goldstein and Vincent-Lancrin, 2013).

In this overview of the book, we summarise its methodology and main findings, propose an agenda for future research and explore some policy implications of our findings. We begin by setting the policy context and providing a brief overview of the skills needed in innovation-driven societies. We then summarise the main findings of our review of the impact of arts education. Next we propose an agenda for future research on arts education, followed by a policy agenda. A key argument we make is that the main contribution of arts education to innovation societies lies in its development of broad and important habits of mind. We conclude by arguing that the value of the arts for human experience is a sufficient reason to justify its presence in school curricula whether or not transfer results from arts education.

Skills and education for innovation

A shared feeling across countries that education systems are not delivering the skills needed for the post-industrial and globalised economies of the 21st century has led several groups and initiatives to seek to identify these skills. The European Commission has identified eight “key competences” for tomorrow’s world. Initiatives such as the New Commission on The Skills of the American Workforce, the Partnership for 21st Century Skills and the Assessment & Teaching of 21st Century Skills (AT21CS) have also done the same under the label of “21st century skills”. Finally, the OECD Skills Strategy (OECD, 2012) and the OECD Innovation Strategy (OECD, 2010) have emphasised, among other things, the importance of fostering individual skills that allow countries to compete in an increasingly knowledge-based society, in which innovation is critical to future growth and wellbeing.

The study of innovation in the economy has allowed us to identify some skill requirements for innovation societies. Some of the main findings are the following. First, innovation requires a more intense use of all skills in the workplace at the individual level. Recent innovation has also led to more demand for tertiary educated graduates in most OECD countries. Second, innovation requires a good framework of lifelong learning and continuous training. As innovation incurs “creative destruction,” people have to retrain, and we know that a certain level of initial education and basic skills is important for this to happen. Moreover, there is evidence that companies offering more training and learning opportunities to their employees are more strongly associated with lead innovation than are companies offering fewer such opportunities.

A close look at the composition of the workforce involved in innovation reveals that innovation relies on a broad mix of skills, as measured by professional and academic qualifications. Keeping in mind the variety of innovation processes and sectors that we have in all countries, this is not surprising. Several types of people drive innovation: scientists and developers, entrepreneurs, practitioners, and users. Moreover, innovation takes several forms, typically categorised as innovation in product, process, organisation, and marketing method. Finally, and perhaps more importantly, innovation in different sectors and activities requires different mixes of skills: thus for example, innovation in the financial market requires a different set of qualifications and skills than does innovation in the mobile phone market.

While we know we may need *more* skills in the future, we cannot define precisely what kind of skill mix is required for more innovation at the country level. As education policy makers reconsider the mission of our education systems, the objective of equipping every individual with “skills for innovation” appears as a conservative approach. We define these skills as three sets of overlapping skills: technical skills (content and procedural knowledge); skills in thinking and creativity (questioning ideas, finding problems, understanding the limits of knowledge, making connections, imagining); and behavioural and social skills (persistence, self-confidence, collaboration, communication). One aim of teaching is to develop these three sets of skills simultaneously, and thus to go beyond the technical skills in some disciplines which are generally emphasised in school examinations and tests.

How to do it in practice? Education stakeholders face this important question when redesigning school curricula and reviewing the teaching and learning that will best prepare students for tomorrow’s life. Because great scientists, artists and entrepreneurs represent role models for innovation, arts education, science education and entrepreneurship education are often presented as privileged vehicles to foster these skills. What does the research evidence tell us about the impact of arts education on various kinds of non-arts skills?

A new review on the impact of arts education

Arts education is often said to be a means of developing critical and creative thinking. It has also been argued to develop skills that enhance performance in non-arts academic subjects such as mathematics, science, reading and writing,

and to strengthen students' academic motivation, self-confidence, and ability to communicate and cooperate effectively. Arts education has thus often been assumed to have a positive impact on the three subsets of skills that we define as "skills for innovation": technical skills, including in some non-arts subjects; skills in thinking and creativity; and behavioural and social skills (or character).

In *Arts for Art's Sake?*, we have examined in detail the state of empirical knowledge about the impact of arts education on these kinds of outcomes. The kinds of arts education examined include arts classes in school (classes in music, visual arts, theatre, and dance), arts integrated classes (where the arts are taught as a support for an academic subject), and arts study undertaken outside of school (e.g. private, individualised instrumental music lessons; out of school classes in theatre, visual arts, and dance). The book does not deal with education about the arts or cultural education.

Our report updates and extends to behavioural and social skills the meta-analyses published in 2000 by the "Reviewing Education and the Arts Project" (REAP) directed by Hetland and Winner (2000). In addition to studies already reviewed in the REAP project, this new enquiry involves the systematic investigation of research databases in education and psychology in the following languages: Dutch, English, Finnish, French, German, Italian, Japanese, Korean, Portuguese, Spanish and Swedish. It attempts to cover all empirical studies published at least since the 1980s, and makes fresh use of studies unearthed in former meta-analyses (from 1950 on). Using these international data bases, we have reviewed what is known about the possible impact of the main forms of arts education on the three categories of skills for innovation presented above. We examine verbal, mathematical and spatial skills; creativity; academic motivation; and social skills including self-confidence, empathy, perspective taking, emotion regulation. Neuroscientific literature relating to arts education was also examined.

While our interest is mainly in the skills developed by school-based arts education, our review builds on research approaching the question from a "transfer" perspective. Many reviewed studies investigate whether arts education has an impact on test scores or school marks in other academic subjects. Some of these studies also try to identify the skills that lead to "transfer" and allow us to assess more directly the non-arts skills developed by various forms of arts education. The studies reviewed also include those assessing the impact of arts education on creativity, social skills or behavioural skills, even though the measures of these outcomes could still be improved.

Our report distinguishes firmly between correlational studies (from which one can make no causal conclusions), quasi-experimental studies (which do not rely on random assignment, and thus their causal inferences can generally not be conclusive), and the few true experimental studies on these topics (which randomly assign students to arts vs. no-arts "treatments," and from which causal inferences can be drawn). The report also distinguishes between cross-sectional and longitudinal

studies (following the same students over time), the latter often producing stronger evidence than the former.

The main results to emerge from this study are summarised below.

Arts education and academic skills in non-arts subjects

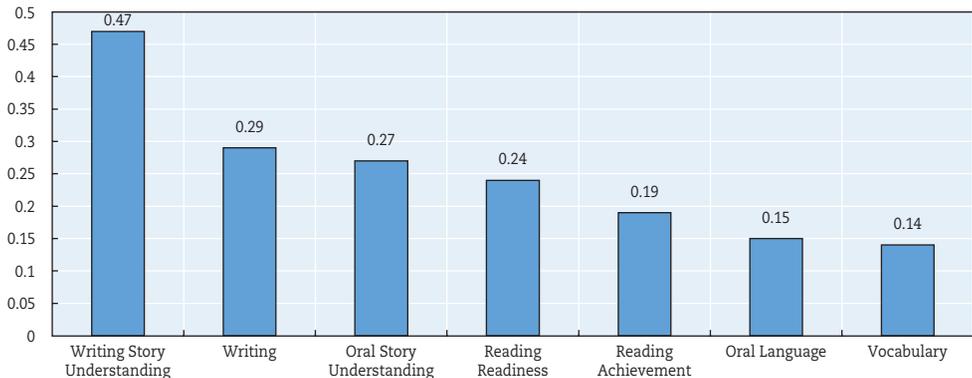
Multi-arts education. An extensive body of correlational data in the United States reveals that students who participate in a large number of arts courses (these studies do not specify type of arts courses and are likely to be a mixture of kinds of arts courses) have higher educational attainment levels (as measured by grades in school and scores on verbal and mathematical standardised tests) than do those who take fewer or no arts courses, and one study showed that this relationship exists for students at both the high and low ends of the socio-economic spectrum. These correlational findings should not be taken as showing that the arts courses cause the higher educational attainment. Plausible non-causal explanations cannot be ruled out: students who excel academically and who study the arts may come from families that value both academics and the arts, or attend schools that stress both; and good scores or educational ability no doubt have a positive influence on whether students receive arts education because, for example, those proficient at school may have more time to spend on the arts activities, or may be more encouraged to study the arts by their teachers or parents. It is notable that a study in the United Kingdom found the reverse: students in the arts track performed less well on their national exams than did those in the academic track – pointing to the importance of considering the kinds of students who self-select into the arts (Harland, Kinder, Haynes and Schagen, 1998). A handful of multi-arts experimental (non-correlational) studies examining the causal effect of arts classes on educational attainment do not show a significant causal impact, and there is no clear theoretical reason to expect future studies to do so.

Music. Music education strengthens IQ (intelligence quotient), academic performance, phonological skills, and the ability to hear speech in a noisy environment, and there is preliminary evidence that music education might facilitate foreign language learning. There are at least two mechanisms at play which could explain these results. Music may improve verbal skills (including reading, writing, and foreign language learning) via its facilitation of auditory skills. And music may stimulate IQ and academic performance because music education is a school-like activity and thus may train school-like skills of concentration and reading of notation, which in turn could elevate IQ.

While there are a number of studies showing a positive impact of music education on visual-spatial reasoning, the sole longitudinal study on this question detected no persistent influence after three years of music, which suggests the need for caution. There is also no evidence yet that music education has any causal impact on mathematics scores, even though music has an underlying mathematical structure.

Theatre. Strong evidence shows that theatre education in the form of enacting stories in the classroom (classroom drama) strengthens verbal skills (Figure 1), but there is no evidence for a link between theatre training and general academic skills.

Figure 1. **Strengthening verbal skills through theatre education: A clear link**



Note: All results are statistically significant, except for “vocabulary”.

Source: Podlozny (2000).

Visual arts. While there is no evidence that training in visual arts improves verbal or mathematical academic skills, two new correlational studies reveal that students who study the visual arts are stronger in geometrical reasoning than students who do not study the visual arts. However, causality has yet to be established. And one experimental study found that learning to look closely at works of visual art seems to improve skills in observing scientific images – a typical instance of close skills transfer.

Dance. Some studies show that instruction in dance improves visual-spatial skills as measured by paper and pencil tests, but such studies are still too few in number to be conclusive. We found no evidence that dance education improves verbal or mathematical academic skills.

Arts education and skills in thinking and creativity

Everyone associates art with creativity. There are a few studies linking enhanced creativity with theatre and dance education, but the limited number of studies and statistical power of the positive evidence does not allow us to generalise this finding. Research on multi-arts education has not clearly demonstrated a causal impact on student creativity and problem solving.

One possible reason for the weak evidence on this question is the limited way in which creativity has been measured – using “domain-general” tests such as the Torrance Tests of Creativity (in which students must for example come up with

original uses for common objects, or title pictures in unusual ways). Another reason for the lack of a strong demonstrated link between arts education and creativity is that anything can be taught so as to stimulate creativity and imagination, and anything can also be taught in a deadening way. Thus, a science class – indeed, a class in any subject – can teach creativity and imagination if well-taught; and an art class can leave creativity and imagination untouched if poorly taught. It is possible that, even in art, these skills are only developed very deliberately. It is also possible that students who gain expertise in an art form develop creative abilities in that art form but that this new creativity does not spill over into other domains. Studies assessing domain-specific creativity (i.e. creative thinking in music as a function of music instruction) remain to be carried out.

Though we did not find any empirical study that aimed to assess the impact of arts education on critical thinking, such a study is called for in light of the fact that Hetland, Winner, Veenema and Sheridan (2013) showed that visual arts teachers at their best aim to promote reflection and meta-cognition. It seems highly plausible that other forms of arts education do the same if teachers expect students to evaluate their own works and those of their peers and to talk about their working process.

Arts education and social and behavioural skills

Arts education is often viewed by public policy-makers and educators as a means of getting students to enjoy school and motivate them for learning in other academic subjects. Empirical studies show that students enrolled in arts education courses display a more ambitious attitude to academic work as well as higher levels of commitment and motivation. Commitment and motivation are generally measured by higher school attendance, lower dropout rates, and observed or self-reported attitudes such as persistence, being “on task”, interest, etc. However, these studies are correlational and thus do not allow the conclusion that arts education is what motivates students. Possible non-causal explanations exist: for example, students taking the arts may attend schools that are better all around and thus more motivating; or students who self-select into the arts may be more motivated to begin with. Experimental studies are called for.

There is also no more than tentative evidence regarding the impact of arts education in its various forms on other behavioural and social skills, such as self-confidence, self-concept, skills in communication and cooperation, empathy, perspective taking and the ability to regulate one’s emotions by expressing rather than suppressing them. Initial evidence concerned with education in dramatic art appears the most promising, with a few studies revealing that drama classes enhance empathy, perspective taking, and emotion regulation – plausible findings given the nature of such education.

Because motivation can have so many different drivers, and is often measured by indicators such as dropout rates or absenteeism that are distant from the arts education exposure, we must be cautious in making causal links from arts education to motivation. We do not suggest that arts education has no causal impact on student

motivation. Rather, our research frameworks are too broad as of now to capture this causal impact if it exists. Moreover, it is difficult to imagine why arts education *per se* would motivate students more than would other subjects. It seems more likely that students are motivated by what they enjoy, and what they enjoy differs across individuals. To the extent that arts education might be particularly motivating for all students, this effect may come from factors *associated* with arts education. For example, particularly engaging pedagogies may be more often used in arts classes than in other subjects; infusing the arts might change the school culture and make the culture more inquiry based, which in turn could lead to better motivational outcomes; students might enjoy arts courses more than other courses because they are “low stakes,” or because they do not have right and wrong answers, and this enjoyment might eventually change their relation to schooling and school learning; or finally, students might notice that their peers value the arts, which could then raise their own engagement.

All of these assumptions would be consistent with the possibility that arts education leads to heightened student motivation. One would simply have to argue that arts education is motivating as a function of the complex bundle of factors associated with such education. Researchers will then need to unpack the complex factors and conditions under which arts education has this causal effect so that they can better understand the variability of its outcomes under different circumstances. Should a causal link between arts education and motivation be ascertained in a given historical and socio-cultural context, decision makers could make use of this information, noting all the while that there are likely numerous factors mediating the relationship between arts education and student motivation. In short, arts education is a complex “treatment” and it is useful to know whether it leads to positive outcomes even if we do not know which of its ingredients, or which mediating factors, are actually causing the outcomes.

Conclusions

This systematic overview of the research provides the basis for a clear and qualified response to the initial research questions. The report shows that learning certain forms of arts instruction does indeed have an impact on the development of very specific skills, as summarised above. The body of empirical research does not cover all skills of interest though – far from it. The kinds of learning that occur in particular art forms shape the kinds of skills that spill over into other areas. Thus, music learning involves auditory training, and music learning “spills over” into skill in speech perception; music learning is highly school-like, involving discipline and practice and notation reading, and spills over into the domain of academic performance; theatre involves character analysis and spills over into skill in understanding the perspectives of others.

Evidence of any impact of arts learning on creativity and critical thinking, or on behavioural and social skills, remains largely inconclusive, partly because of an insufficient volume of experimental research on these matters and also because of the difficulty of adequately measuring these skills.

An agenda for further research

Based on our systematic overview of the extant empirical research since 1950, we have identified some methodological and theoretical weaknesses that need to be addressed in order to improve our knowledge of the development of skills for innovation through arts education. It is noteworthy that the relative quantity of empirical studies on arts education is limited: we found about 510 results for 39 types of outcomes monitored, which means about 13 studies per outcome on average. Considering the scope of our review, this is not much. For many outcomes, there are no more than 2 or 3 studies available. Research on arts education represents only a tiny share of educational research.

Beyond a call for more empirical research on arts education, our state of the art of existing research nonetheless allows us to suggest some research priorities for the coming decade. One priority is to use and to develop better methodologies for impact studies. The second priority, even more important, is to develop sound and testable theories about why and how arts education would have an impact on various outcomes of interest.

Methodological improvements

Some methodological caveats in the arts education transfer studies thus far would need to be addressed in future research. While there are many correlational findings showing that children who study the arts do better in school than those who do not, there are few true experimental studies (with random assignment to an arts intervention vs. some kind of non-arts intervention) testing whether studying the arts actually causes some non-arts outcome to improve. There are some quasi-experimental studies (with a control group but without any random assignment) showing that students self-selecting into an arts infused kind of school improve more on some academic measure than do students selecting into a non-arts infused school. But then we are comparing schools that differ on a whole host of dimensions, not just on the presence of the arts. In addition, we have the problem of self-selection, leading to the likelihood of students in the two schools differing from the start. These concerns limit our ability to conclude anything about the causal impact of arts education.

The most convincing way to demonstrate that the arts cause academic improvement is to randomly assign children to an arts infused school vs. another identical school without arts infusion, and to track their progress over time. Moreover, to avoid confusing an effect of the arts with the so called Hawthorne effect (i.e. the effect of any kind of intervention, equivalent to the placebo effect in medical science), the students assigned to the non-arts school need to be assigned to a school that provides another kind of special treatment (e.g. a focus on globalisation, sports, chess, or technology, etc.) so that we can disentangle effects due to the arts vs. due to any kind of new programme. This kind of study is exceedingly difficult to do, which is perhaps why it has not been done.

Box 1. Suggested areas of research focus on the impact of arts education

Based on our review of the research literature on the impact of arts education on a variety of non-arts skills, we recommend developing further research projects on studies that:

- Examine the kinds of habits of mind developed in the arts. Such research is really the first step towards good research on transfer.
- Search for plausible links between specific arts and specific non-arts skills and subject matters. It may be more reasonable to expect transfer from the arts to higher-order cognition (reflection, critical thinking, creative thinking, ability to tolerate ambiguity) than to more basic skills such as verbal and mathematical performance on standardised tests (Perkins, 2001; Tishman, MacGillivray, and Palmer, 1999). The differential effect of different arts forms on these different types of skills should be better understood. Even within an art form, for example music, we may expect different kinds of learning outcomes from different types of activities, such as learning to compose fugue, playing violin, singing in a choir, or playing jazz, classical or pop music (Vuust, Brattico, Seppänen, Näätänen, Tervaniemi, 2012). We may also expect different relations with different dimensions of an academic subject: for example, an art form may have an impact on geometry but no impact on arithmetic (which could balance out in general maths tests).
- Measure learning in the art form itself and compare that to learning in the hypothesised transfer domain. Higher levels of learning in the art form should correlate with higher levels of achievement in the transfer domain (Bransford and Schwartz, 1999).
- Investigate transfer by asking whether learning in an art form results not in higher achievement in a transfer domain, but rather, in greater ease of learning in that transfer domain.
- Examine the effects of explicit teaching for transfer in the arts. Perhaps it is only when teachers make clear that the skills being taught in arts classes can be used in other subject areas, can help students see how they might do so, and/or can work with students to reflect on and practice making such connections, that students become able to transfer skills learned in the arts.
- Explore whether using the arts as entry points to academic subjects is particularly useful to certain kinds of students. For example, it is possible that music serves as a strong entry point for maths but only for those students who have difficulties in maths but who are strong in music. It is also possible that children with special needs may be helped to learn through the arts: perhaps dyslexic children can be helped by music since music improves phonological skills; perhaps autistic children can be helped by theatre training since theatre training improves the very kinds of social skills lacked by children with autism (especially understanding others' mental states).
- Investigate how other subject areas can learn about good teaching and deep learning by looking at arts classes. Would students in mathematics or English classes benefit from greater proportions of class-time being devoted to working on projects while teachers offer individual consultations of ongoing work, similar to the way studio art courses are run? Or would science, history, or language classes benefit from the kind of regular, mid-project critiques that are common in studio arts courses? We believe that they would.
- Study the effects of the arts over time to find out whether effects, if found, last, and to find out whether such effects have an impact on non-test measures – i.e. on real life.
- Study the relative effectiveness of different kinds of pedagogies, assessments and curricula in fostering various kinds of learning outcomes in the arts and, possibly, the simultaneous development of skills and habits of minds that can be used in other domains.

Another approach that is more feasible that also meets the requirements of random assignment is to randomly assign classrooms to treatments. Thus, one might find 30 schools, each of which have two classes of students at the same age which show no systematic differences in the distribution of student IQ or academic achievement. One could then assign arts instruction to one class and some kind of non-arts instruction to the other class. Each class would be assessed on the outcome of interest at pre-test (e.g. beginning of the year) and post-test (e.g. end of year). Ideally there should be no systematic difference in the distribution of scores between treatment and control classes at pre-test. If the classes assigned to the arts show significantly greater improvement on the outcome of interest, we can conclude that the arts instruction is causing the change in outcome. Because these kinds of random assignment experimental studies have been carried out very minimally, the question of the impact of arts education on different subsets of skills for innovation has not yet been adequately tested.

A third approach that is even more feasible is to continue to conduct correlational studies but to rigorously control for all possible confounding variables such as initial IQ, socio-economic status, academic achievement, and family valuing of arts and of academic achievement. None of the identified correlational studies controlled for all such variables.

A fourth approach that can yield robust evidence lies in longitudinal studies following individual students (those involved and those not involved in the arts) over a long period of time. This type of study allows for controlling all time-invariant characteristics mentioned above at once by comparing skill growth trajectories rather than levels at one point of time.

This report allows us to identify an agenda for empirical research on the links between arts education and skills development and contains all of the elements for an up-to-date meta-analysis, which we have been unable to undertake for practical reasons. However, given the paucity of true experimental work, we recommend that instead of meta-analysing the extant work, researchers should rather conduct the kind of rigorous controlled research suggested above. Given the wide variety of causal questions that could be tested (there are many forms of arts instruction and many forms of outcomes of interest), we recommend developing a prioritised research agenda and inviting research teams to collaborate on specific research questions so that multiple, converging studies on specific questions can be carried out. Box 11.1 summarises some of our research agenda recommendations.

Theoretical improvements

Methodological weaknesses often indicate a lack of theoretical reflection about why and how desired effects of arts education would be achieved. The extant empirical research does not always build on strong theoretical frameworks. Very few studies of skill development and transfer have been based on an analysis of the habits of mind learned in the art domain from which transfer is expected. This kind of analysis was carried out by Hetland et al. (2013) and could be used as a basis for transfer research. Researchers need to build stronger theoretical frameworks on why

and how arts education can be hypothesised to develop certain skills which then transfer to other academic subjects. The first step is to develop a clear understanding of the kinds of skills developed by different forms of arts education, and then to determine whether these skills are specific to the arts or may also spill over to other fields. As in other fields of education, it is also important to study how different ways of teaching the arts foster different mixes of skills.

Any study of transfer should first analyse the kinds of habits of mind taught in the art domain and then develop a plausible hypothesis about the kinds of transfer outcomes one might expect. Thus it is not sufficient to test the hypothesis that infusing many kinds of arts into the academic curriculum will lead to higher test scores. What is needed is a theory of what infusing the arts will do to learning and why that kind of learning should be reflected in the kinds of test scores examined. Studies must identify one or more habits of mind hypothesised to be learned from some kind of arts instruction and then assess the level of learning of that kind of habit of mind in the art form itself. Logically, if there is to be transfer from arts learning to some non-arts kind of learning, there must first be arts learning. As Bransford and Schwartz (1999) point out, many educational studies reporting failure of transfer can be traced to limited learning in the original domain. Future studies on this question should measure learning in the “parent” art domain and in the transfer domain. In addition, a finding of transfer should rest on a strong correlation between level of learning in the art domain and level of learning in the transfer domain (Schwartz et al., 2005).

None of the transfer studies we reviewed were based on any kind of explicit teaching for transfer, in which the teacher helps the student see parallels between what was learned in an art form and how that might be applied to a non-arts area of learning. A hypothetical example of this kind of teaching for transfer might be a teacher pointing out the observational skills learned in the visual arts and reminding students to use these same kinds of skills when peering through a microscope in biology class. One is far more likely to get transfer when there is explicit teaching for transfer than when transfer is expected to occur on its own (Salomon and Perkins, 1989; Terwal, van Oers, van Dijk and van den Eeden, 2009).

Bransford and Schwartz (1999) suggest going beyond the traditional approach to the study of transfer in which we examine whether learning in one domain predicts achievement in a transfer domain. They suggest that transfer studies should instead examine whether learning in one domain predicts greater *preparation for future learning* in a transfer domain environment. If we applied this to the arts, we might investigate not whether students coming out of an arts class now score higher on geometry, but rather whether students who have completed an arts class are now more able to learn geometry than those who have not taken such a 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. This kind of research – looking for greater ease of learning in a non-arts domain after studying an arts form – has yet to be carried out.

Finally, transfer studies are just one kind of research in the area arts education. Better understanding the relative effectiveness of different kinds of pedagogies in different arts forms on the acquisition of artistic skills themselves is another key area for research on arts education. This kind of research is much more developed in academic areas than in arts education. Studies on the skills and dispositions developed by arts education, and on the different impact of various pedagogies in the arts should contribute to the improvement of arts education.

Conclusions

In sum, we believe that more empirical research on arts education should be carried out to investigate the impact of arts education on the development of a variety of skills, including artistic skills themselves. This research should also focus on the quality and effectiveness of different types of teaching in arts education, as is commonly done in other areas. In order to allow some level of causal inference, we recommend longitudinal studies, with an experimental or quasi-experimental design. However, empirical research should only come after the development of a strong theory about the skills and outcomes that quality arts education should foster. Given the scarcity of funding for research on arts education, we also suggest that research teams collaborate to examine some specific questions and replicate findings in different contexts. We suggest that a high priority area of study would be to investigate the effect of arts education on skills important to innovation, such as creativity, metacognition, and skills supporting good communication.

A policy agenda

Understanding the impact of arts education on skills for innovation can help education decision makers to design or give incentives for the design of appropriate curricula. What should be the place of the arts in school curricula? What kinds of skills can one expect arts education to develop, and with what kind of pedagogy? Does arts education simultaneously foster academic achievement, creativity, critical thinking, as well as valued behavioural and social skills? Policy reports and advocates of arts education often claim that this is the case in order to justify the arts in today's curricula. Our report brings together research evidence on this issue and summarises what we know (and do not know). In this respect, our report helps to clarify why arts education should remain an integral part of every child's education.

We argue that the main justification for arts education is clearly the acquisition of artistic skills – the current priority objective of arts education in the curricula of OECD countries. By artistic skills, we mean not only the technical skills developed in different arts forms (playing an instrument, composing a piece, dancing, choreographing, painting and drawing, acting, etc.) but also the habits of mind and behaviour that are developed in the arts. Arts education matters because people trained in the arts play a significant role in the innovation process in OECD countries: the arts should

undoubtedly be one dimension of a country's innovation strategy. Ultimately, however, the arts are an essential part of human heritage and of what makes us human, and it is difficult to imagine an education for better lives without arts education.

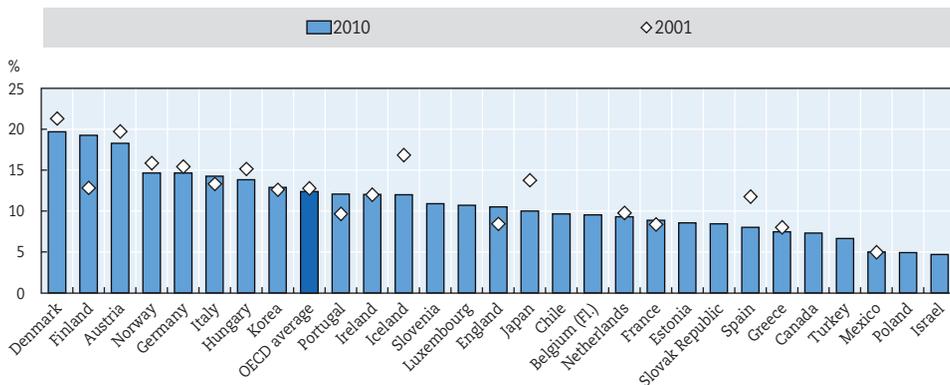
Advocacy and transfer effects

Much of the research findings showing positive impacts of arts education on all sorts of achievements and competences in other subjects and activities have been used for advocacy purposes. Claims about the impact of arts education on academic achievement and motivation tend to reflect the view that the arts are important not in themselves, but only for how they can support other aspects of the curriculum. These kinds of claims may well have developed pragmatically – as a way to save the arts because the arts are perceived as endangered.

While the arts were never given as much weight in the school curriculum as traditional academic subjects, instructional time in the arts has not decreased as much as concerned advocates tend to think. In the past decade, on average there has been relative stability in the time devoted to arts education in countries' (intended) instruction time. In 10 out of 18 OECD countries, the share of time devoted to arts education has decreased in compulsory instruction time for 9-11 year old children between 2001 and 2010, but the decrease has generally been very small (Figures 1 and 2). 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, to reiterate, the decrease of arts education in US schools has been limited. The report also points to inequities in access as disadvantaged students are those who have suffered the most from the decrease (NCES, 2012).

This decrease (or perceived decrease) has led arts advocates to promote arts education on the basis of their transfer effects on other, more established disciplines. If learning in the arts has “collateral benefits” in other areas, so much the better. However, we do not believe that the existence of arts education should be justified in terms of skills in other, traditional academic subjects: if one seeks first and foremost to develop skills in geometry, studying geometry – rather than music or dance – is always likely to be more effective. Indeed, as mentioned above, one can raise the question of why training in the arts *should* improve skills in reading or mathematics or science. What is the underlying mechanism? Even if one could show that arts training has some effect on reading, writing and arithmetic (the so-called three Rs), it should be obvious that improvement in these basic subjects is more likely to come about if they are the direct focus of the curriculum. The primary justification of arts education should remain the intrinsic importance of the arts and the related skills that they develop.

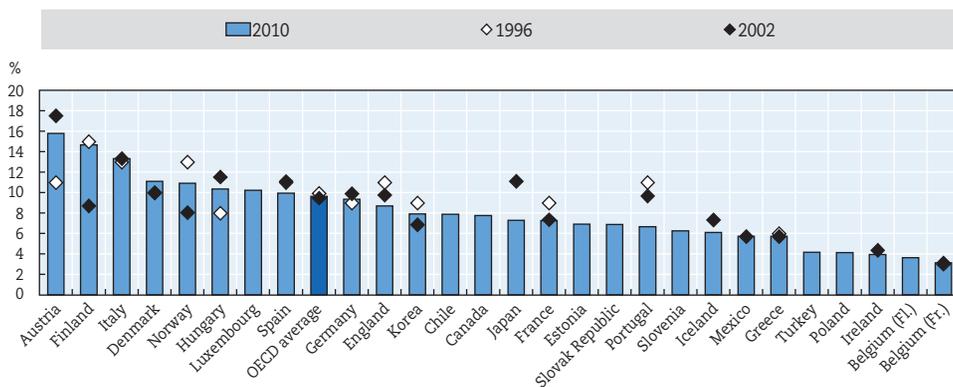
Figure 2. **Instruction time of arts subjects as a percentage of total compulsory instruction time for 9-11 year-olds (2001-2009)**



Source: 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 3. **Instruction time of arts subjects as a percentage of total compulsory instruction time for 12-14 year-olds (1996, 2002, 2009)**



Source: 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).

Moreover, in any domain, transfer is always difficult to demonstrate. In a book entitled *Transfer on Trial*, 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]” (Detterman and Sternberg, 1993). Research shows that transfer is rare and that its likelihood of occurrence is directly related to the similarity between two situations. Thus, limitations in rigorous attempts to demonstrate transfer from the arts are in no different a position than attempts to demonstrate other forms of transfer of learning. Arts advocates should thus not be surprised that so limited strong evidence of transfer from arts education to other, more socially valued school subjects, exists.

Arts education in innovation-driven societies

Another instrumental justification is that the artistic skills (rather than non-artistic skills) developed in arts education are increasingly important in our societies. Hence the importance of arts education for the innovation and skills strategies of OECD countries.

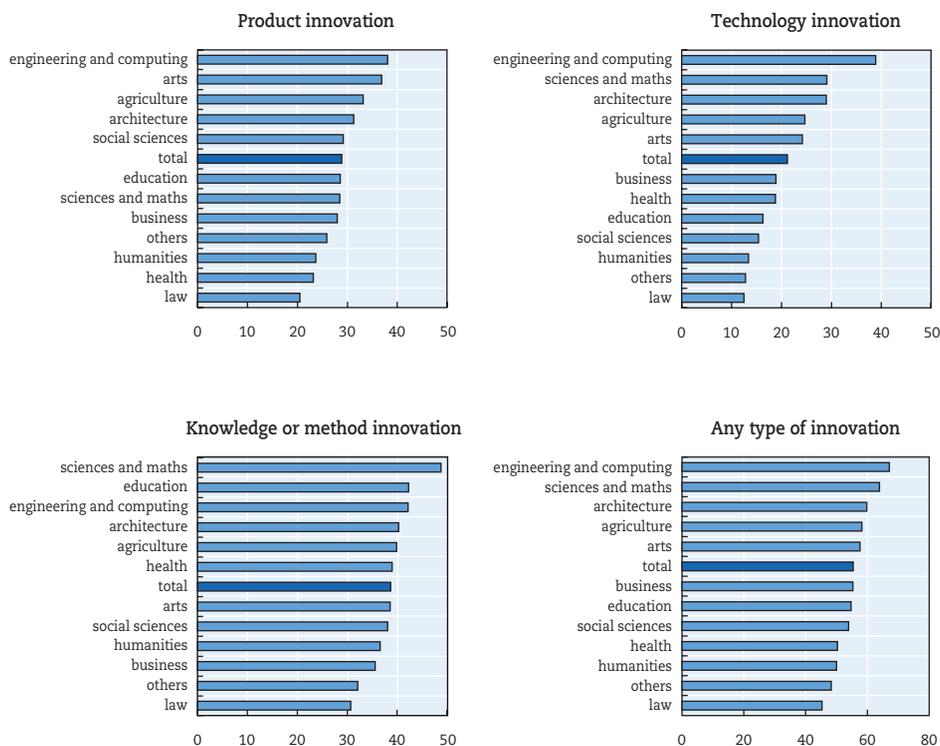
First, arts education is important for vocational reasons. There will always be students with strong potential in an art form who may or may not also be strong academically. If these students are not exposed to arts education in school, they may never discover their strengths in the arts. Discovering artistic strengths can lead to self-confidence and well-being. In addition, such discovery can lead students to choose careers in arts-related fields: graphic design, industrial design, lighting design, the music industry, as well as the more challenging path of choosing a career in the fine and performing arts. The economy of culture and “creative industries” play a key role in the economy and growth of many OECD countries. The relative share of cultural industries in the gross domestic product of five countries (Australia, Canada, France, the United Kingdom and the United States) has been estimated at 3-6% of GDP.

Second, arts education is important from a user (or “consumer”) perspective. On average, in 2011, cultural and recreational goods and services were the fifth item of household expenditure in OECD countries. Literacy in the arts thus needs to be developed so that people make the best of these cultural and artistic activities, and there continues to be a vibrant demand for and innovative supply of them.

Finally, despite the lack of evidence thus far for arts education strengthening creativity as measured by domain-generic creativity tests, it seems that arts graduates are likely to have the complex set of skills that are useful in highly innovative occupations. When concerned with human resources, policies for innovation usually tend to focus on skills in science and engineering. However, artistic skills are often involved in the innovation process. The analysis of two international databases of tertiary educated professionals (Reflex and Hegesco) by Avvisati, Jacotin and Vincent-Lancrin (2013) shows that art graduates are among the most likely to have a highly innovative job five years after graduation. Fifty-four percent of arts graduates have a highly innovative job dealing with some type of innovation. They rank second for product innovation, and they come fifth and seventh for innovation of technology and innovation of knowledge (Figure 4).

While people with more innovative skills may self-select in arts studies, it is also plausible that arts education develop a bundle of skills that matter for innovation. Professional artists certainly contribute to a country's innovation culture through their artistic production. However, most art graduates are not professional artists: they work in all sectors of the economy. In fact, arts graduates are distributed across economic sectors along the same pattern as other graduates, except that more of them work in education and services, and fewer work in the health sector.

Figure 4. **Percentage of tertiary graduates from specific fields having a highly innovative job**



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

One simple explanation for the above findings is that the importance given to design and marketing in devising products have led companies to form multidisciplinary teams for innovation, and these teams include staff with artistic skills. After all, it is because Apple devised and delivered the design of the iPod (and not because it invented its technology) that it has secured an estimated 36% profit margin on sale of the product. But again, we should keep in mind that most people who receive arts education will not work as artists or use their technical artistic skills in their

occupation, as is the case for most scientists and engineers. It may rather be some less visible skills that are developed in their training (or that they had prior to their education) that make them more likely to hold innovative jobs in the workplace.

Recognising the value of arts education for innovation, an increasing number of universities are developing new types of inter-disciplinary curricula or institutions that try to take advantage of the skills developed in arts education. An interesting and inspiring example is the newly established Aalto University in Finland, which was created from the merger of three Finnish universities (Helsinki School of Economics, University of Art and Design Helsinki, and Helsinki University of Technology) in order to bring together art, engineering and business and nurture a stronger spirit of innovation and entrepreneurship among students.

Concluding remarks

While future societies may or may not need more people trained in the arts than today, they probably will not need fewer such people. As in other subjects, notably science and mathematics, arts education in elementary and secondary school plays a twofold role: arts education gives students some literacy and some level of technical skills in the arts, and also provides them with some understanding of and interest in the domain so that they may consider studying it in higher education.

People's lives are infused with the arts as they listen to music on their iPods, read fiction, attend museums, watch TV dramas, dance, etc. We believe that the well-being and happiness of individuals will be higher in countries where the arts are given a prominent role in our schools, because of the inherent pleasure gained from the arts. A study showing that this is the case remains to be carried out.

Ultimately, even though we find some evidence of the impact of arts education on skills outside of the arts, the impact of arts education on other non-arts skills and on innovation in the labour market is not necessarily the most important justification for arts education in today's curricula. The arts have been in existence since the earliest humans, are parts of all cultures, and are a major domain of human experience, just like science, technology, mathematics, and humanities. In that respect, they are important in their own rights for education. Students who gain mastery in an art form may discover their life's work or their life's passion. But for all children, the arts allow a different way of understanding than the sciences and other academic subjects. Because they are an arena without right and wrong answers, they free students to explore and experiment. They are also a place to introspect and find personal meaning.

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Art for Art's Sake?

OVERVIEW

Artists, alongside scientists and entrepreneurs, are role models for innovation in our societies. Not surprisingly, arts education is commonly said to be a means of developing skills considered as critical for innovation: critical and creative thinking, motivation, self-confidence, and ability to communicate and co-operate effectively, but also skills in non-arts academic subjects such as mathematics, science, reading and writing. Does arts education really have a positive impact on the three subsets of skills that we define as “skills for innovation”: technical skills, skills in thinking and creativity, and character (behavioural and social skills)?

Art for Art's Sake? The Impact of Arts Education examines the state of empirical knowledge about the impact of arts education on these kinds of outcomes. The kinds of arts education examined include arts classes in school (classes in music, visual arts, theatre, and dance), arts-integrated classes (where the arts are taught as a support for an academic subject), and arts study undertaken outside of school (e.g. private music lessons; out-of-school classes in theatre, visual arts, and dance). The report does not deal with education *about* the arts or cultural education, which may be included in all kinds of subjects.

Consult the full book on line at <http://dx.doi.org/10.1787/9789264180789-en>.

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- Chapter 6. Cognitive outcomes of dance education
- Chapter 7. Creativity outcomes of arts education
- Chapter 8. Motivational outcomes of arts education
- Chapter 9. Social skills outcomes of arts education
- Chapter 10. Brain outcomes of arts education
- Chapter 11. Why arts education? Summary and conclusions

“Ellen Winner, Thalia Goldstein, and Stéphan Vincent-Lancrin have unraveled the most potent reason for arts education, the development of ‘artistic habits of mind’ such as observation and exploration which benefit all students no matter their level of artistic talent. Their meticulous research is invaluable in understanding how the arts are an essential part of every child’s education.”

Heather Watts and Damian Woetzel, former principal dancers, New York City Ballet