

Cultural and creative activities at school are far more than an enjoyable break from learning. They encourage pupils to develop key skills that can help them later on. Children and teenagers from lower-income and less well-educated families have the most to gain from these activities, science journalist Mark Mieras discovers in this literature review. He brings together the scholarly research on how arts and cultural education can help build an equal opportunities society.

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# Hopeful education

## How art creates equal opportunities

The circumstances into which you are born have a major impact on your future. Where will life take you? How socially fulfilled and happy will you be? Pupils from families that have a high socioeconomic status – high income and a high level of education – do better at school. In grade eight, they have an average learning advantage of 0.8 school years compared to pupils from low-income families whose parents are less well-educated.<sup>1</sup> On average, they gain access to a higher level of secondary education and are less likely to drop to a lower level. These advantages are not primarily a matter of intelligence. They arise mainly because these pupils have learned to be hopeful, to believe in themselves, to be creative, to regulate their emotions and to steer themselves in the right direction.

There is considerable evidence to suggest that cultural activities such as music, theatre, dance and drawing can help these ‘metacognitive’ skills to develop and enable disadvantaged pupils to catch up. This literature review describes how that process works and provides an overview of the scientific insights in this area. How can cultural activities promote equal opportunities, at school and in later life?

### Catching up

Growing up involves so much more than acquiring knowledge. Children also need to develop all kinds of essential skills, and research shows that cultural and creative activities can help them achieve this. In one study, a large group of primary school pupils in Amsterdam was randomly divided into a music and an art group. The music group’s activities largely

consisted of practising on musical instruments. All of the pupils were followed for two and a half years. The art group developed better visual and spatial skills, while those in the music group gained a perceptible advantage in skills such as planning and impulse control.<sup>2</sup> In other words, each art discipline offers different opportunities. Dance makes a difference to motor skills, which improve by leaps and bounds.<sup>3</sup> Drawing and painting challenge pupils to learn to look more acutely.<sup>4</sup> Music helps them improve their listening skills and filter out distracting noises. This last effect can still be measured decades later: on average, adults who played a musical instrument for a number of years as a child are twice as good at correctly identifying words in a noisy environment.<sup>5</sup>

This literature review shows that cultural and creative activities help children develop. It is striking to note that these effects are often greatest amongst disadvantaged pupils. For example, children from families with low socioeconomic status make the fastest progress in musical activities.<sup>6,7</sup> Researchers believe that this is because they have less opportunity to learn to listen at home, where the environment is often noisy and they are less frequently engaged in conversation. Cultural activities also help children with congenital developmental delays such as dyslexia catch up.<sup>8</sup>

One helpful aspect of arts activities is that children experience less frustration as a result of their disadvantaged position when engaging in these activities. When dancing, acting and making music, they develop along with the rest of the group.

Art also appears to stimulate essential basic functions in the brain. This may explain why young children who are behind in school readiness develop more effectively in a developmental programme that includes art. This effect is robust, regardless of skin colour and cultural background.<sup>9</sup>

Children from families with a low socioeconomic status who attend a school with a broad range of arts activities are more likely to have a professional career by the age of thirty (49%) than their peers at other schools (21%).<sup>10</sup> That said, the researchers cannot say with certainty whether the home situations of the two groups of pupils are entirely comparable. It could be that some parents already had an affinity with the arts and made a conscious decision to send their children to a school with a broad range of arts activities. However, the effect is large enough to suggest a causal link. Art does actually appear to help this group of pupils make the most of opportunities in later life. Researchers have an explanation for how this process works.

### Self-directed skills

Children have to learn everything, even the skill of learning itself. In order to learn, you need to harness brain functions such as focused attention and a sound working memory. You need to be flexible and rein yourself in every now and then, for instance to resist distractions. These self-directed skills (also known as executive functions) are what drive learning. They help children achieve literacy and numeracy at primary school<sup>11</sup> and constitute the most important factor for success at secondary school.<sup>12</sup> Highly developed self-directed skills help children participate in classwork, do homework at home and resist temptation as a teenager. They also help people continue learning later in life.<sup>13,14</sup> Self-directed skills also determine how well people do on the job market, even more so than intelligence and motivation.<sup>15</sup>

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**‘Through imaginative play, drama, dance and music, young children can improve their self-directed learning abilities’**

In light of all this, excellent self-directed skills are something you would wish for every child. Unfortunately, these skills are not evenly distributed. Children from families with a low socioeconomic status often draw the short straw in this respect. At home, they are less challenged to focus their attention, use their working memory, exercise self-control and solve problems flexibly. From an early age, their self-directed learning skills lag behind.<sup>16,17</sup>

As a result, these children and teenagers are less able to ignore distractions, resist temptation and step back from events that make them anxious and aggressive.<sup>18</sup> In addition, their lack of self-directed skills often makes them socially awkward<sup>19</sup> and more likely to exhibit behavioural problems.<sup>20</sup> They have more conflict at school and fewer friends. As a result, they receive less support, they are lonelier and experience higher levels of stress.<sup>21</sup>

They are more likely to be on the wrong side of the law and experience more difficulties in later life, both socially and cognitively.<sup>22</sup> Even when these figures are corrected for intelligence and social class, this painful distinction remains squarely in place.

### Shortfall in self-directed learning can be measured

Children who experience higher levels of stress in the home are less readily challenged to develop their self-directed learning skills. This can be measured directly: a key connection in their brains – the cingulate cortex – tends to be less well-developed.<sup>104</sup> As a result, their brains show aberrant behaviour in response to cognitive tasks, such as attention-switching and focusing. If you ask these pupils to focus on a sound or concentrate on ignoring that sound, you will see far less difference in their brain activity than in children from higher-income families whose parents have a higher level of education.<sup>105,106</sup>

The good news is that self-directed learning can be practised, especially at a young age. It can be stimulated through challenging activities that offer children plenty of scope to show initiative. These activities include imaginative play<sup>23</sup>, drama<sup>24</sup>, dance<sup>25</sup> and music<sup>26</sup>. In one study, children aged 7 or 8 were given music lessons for 45 minutes a week for 18 months. A control group was taught about the natural world for the same amount of time.

On average, the working memory of pupils who learned to play a musical instrument was 16 per cent better than the control group when tested at the end of this period.<sup>27</sup> Another study measured a 16 per cent improvement in self-control after only twenty days of music tuition.<sup>28</sup> It is worth putting in the effort to effect this change, as even a limited improvement in self-control can bring about a major improvement in health and well-being, and curb criminal behaviour.<sup>29</sup>

### Inquiring minds

Children from families with a low socioeconomic status are also less curious about the world around them. Compared to other children, they ask fewer why questions on average and are less inquisitive.<sup>30</sup> This is detrimental because curiosity is an aid to development.<sup>31</sup> Children with inquiring minds are better able to focus their attention on learning experiences and achieve deeper understanding. This makes curiosity a good predictor of learning achievement.<sup>32</sup> Research shows that curiosity can be as helpful to a pre-school child's development as doing their best. And for children from families with a low socioeconomic status, curiosity is even more important.<sup>33</sup> This is probably because they are often less challenged at home, and therefore have to draw on their own resources more than other children. It is hopeful to note that an enthusiastic and open attitude from caregivers and teachers has a relatively strong stimulating effect on this group of children.<sup>34</sup>

On the whole, curiosity grows in an environment where questioning and experimentation are valued and encouraged.<sup>35</sup> And in connection with adults who are curious about children.<sup>36</sup> Conversely, children ask far fewer questions of teachers who are focused on predetermined outcomes.<sup>37</sup> This makes sense, as curiosity only tends to thrive in settings where children experience autonomy.<sup>38</sup> Cultural subjects, along with science and technology, are islands of autonomy within the often tightly managed learning environment of the school, and this can make them a source of curiosity.

Curiosity is also important for later life. Adults with inquiring minds are more eager to learn and show greater initiative at work.<sup>39</sup> They demonstrate an open attitude towards their own emotions and social environment<sup>40</sup> and react less aggressively when frustrated or offended. They are also less likely to feel threatened when other people behave differ-

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**‘Creativity is unfairly distributed. Children who are less well-equipped due to their home environment have difficulty setting creative goals or hit barriers and give up quickly.’**

ently than they expected.<sup>41</sup> And they are more adept at handling new and conflicting experiences in general.<sup>42</sup> This quality helps curious people be creative.<sup>43</sup> They pay more attention to the incongruous, show greater perseverance and also derive greater enjoyment from creative challenges.

### Creative self-confidence

A creative mind helps you achieve much more than practical aptitude alone. Creativity has a positive impact on all your achievements.<sup>44</sup> Unfortunately, this is another skill that is unfairly distributed. The higher the socioeconomic status of their family, the higher children score on creative tasks.<sup>45,46</sup> They come up with new ideas more easily, they handle unfamiliar situations more adeptly and are better at dealing with dilemmas and problems.<sup>47</sup> These qualities give them an edge in life. Contrary to popular belief, creative thinking is not primarily a matter of talent. The most important factor is creative self-confidence, also known as creative self-efficacy.<sup>48</sup> Children from families with a low socioeconomic status often lack the confidence to set themselves creative goals. And when they do, they are more likely to hit a barrier.<sup>49</sup> They give up quickly and are reluctant to try again. Their creative self-doubt becomes a self-fulfilling prophecy.

### How do you learn to be creative?

First and foremost, creativity is a skill. A skill that anyone can learn. Researchers brought together findings from approximately ninety studies on creativity training and discovered the following common denominator: teachers give their pupils challenging and open-ended assignments and encourage them to follow their own ideas, to experiment and to dare to make mistakes.<sup>107</sup> Enjoyment and the intrinsic motivation of pupils are important contributing factors. Leisure activities and after-school activities also play a part.

Practising creativity can break this negative spiral. Pupils who were challenged to be creative with a pencil and brush over a twelve-month period subsequently scored higher in creative thinking.<sup>50</sup> Dance and music are also conducive to increasing creative skills.<sup>51</sup> The same applies to museum visits<sup>52</sup> and lessons in which pupils experiment with science, technology, engineering and mathematics.<sup>53</sup>

### Being hopeful

It is essential to ask why, on average, children and teenagers from families with a low socioeconomic status lack self-directed learning skills and have less creativity and creative self-confidence. Researchers believe they have found the underlying cause in lack of hope. On average, children from these families are significantly less hopeful than children from economically prosperous families.<sup>54</sup> This is significant, because children who do have hope show more creativity and<sup>55</sup> creative self-confidence<sup>56</sup> and develop better self-directed learning skills.<sup>57</sup> In addition, they are happier and more contented,<sup>58</sup> show more energy and less anxiety and stress, have more ideas about their own future, achieve more through their own efforts<sup>59</sup> and also have better academic results.<sup>60,61</sup> This should not come as a surprise when you consider that hopeful people are better able to work out ways of achieving their goals and more likely to see obstacles as challenges to be met. They have alternative routes at their disposal: if they can't do it one way, they will find another.<sup>62</sup>

All this makes being hopeful a key trait for making the most of your life. Conversely, those who do not have much hope feel that they have less influence over their own destiny, and lack a sense of control at school. These pupils put in less effort and are more likely to disengage. This often leads to disappointing results and leaves them feeling more pressured, and this in turn seems to confirm and reinforce their sense of hopelessness.<sup>63</sup> Lack of hope is amongst the main reasons why young people drop out of education.

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**‘Hope can be created by encouraging pupils to be curious. Arts and culture help make that happen.’**

Hope can be created by encouraging pupils to be curious<sup>64</sup> and getting them to practise implementing their own plans. Existing programmes geared towards hopefulness aim to create an upward spiral of positive emotions.<sup>65</sup> Joyful activities such as sports and the arts play an important part in making this happen.

Cultural and creative activities are an important source of hope. Children's literature is full of characters such as Pippi Longstocking who resiliently achieve their own goals and offer a role model for hope.

Music can also put the brain in a hopeful mode. Subjects who were given the opportunity to listen to positive music after a setback were subsequently more hopeful than subjects who were not given that opportunity.<sup>66</sup>

### Centre for hope

Our brains have a centre for hope: the left supplementary motor area.<sup>108</sup> This is located between networks that relate to imagination, identity and dreams of the future on the one hand, and the area of the brain that controls motion – its headquarters of action – on the other hand. Hope can be said to bridge the two and play a key role in all our voluntary and purposeful behaviour. This hope centre creates a sense of agency, a deep-seated realisation that you yourself can make things happen. This is a strong stimulus for development in children and teenagers.

### Positive social relationships

Hope is practised by being hopeful. Social support is a key factor in this regard. One study looked at a large group of Chinese adolescents over the course of one year. They gained hope when they were given more support. If that support fell away, their hope ebbed away too.<sup>67</sup> Support from friends and classmates is also important.<sup>68</sup>

Unfortunately, young people from families with a low socioeconomic status have less positive social relationships on average. They establish less contact with classmates, have fewer friends and are less adept at building good relationships with their teachers.<sup>69</sup> Feelings of loneliness can adversely

affect their learning by eating into their attention and working memory.<sup>70</sup>

A sociable school climate fosters positive social relationships and therefore gives hope. Arts education helps to create such a climate. After engaging in acting and role play, pupils feel more connected and therefore less lonely.<sup>71,72</sup> Music also increases the sense of connection.<sup>73</sup> After engaging in musical activities, children find it easier to collaborate<sup>74</sup> and make social contact.<sup>75,76</sup> They are better able to develop empathy and social skills.<sup>77</sup>

In one experiment, children from families with a low socioeconomic status were randomly assigned to either dance classes or attention training. Their social behaviour was then assessed by adults who did not know which group they had been assigned to. The assessors only observed a reduction in problem behaviour and increase in social ability amongst the dancers.<sup>78</sup>

### Positive identity

Pupils also develop hope after gaining in confidence (self-efficacy)<sup>79</sup> and self-esteem.<sup>80</sup> US researchers note that experiencing success in a classroom environment “can initiate a cycle of hope and academic success”.<sup>81</sup> This makes playing music, dancing, acting or participating in sports together a doubly powerful exercise in hope: not only strengthening social support but also a sense of identity.

## ‘The hidden talents of disadvantaged children are usually overlooked within the school system’

People with a low opinion of themselves are less hopeful and less self-reliant. They are also less adept at handling the stress they experience,<sup>82</sup> to the point where negative beliefs can easily block their thinking.<sup>83</sup> Believing you cannot achieve something can very easily become a self-fulfilling prophecy.

School plays a key role in developing identity by giving pupils the opportunity to discover their talents and forge friendships.<sup>84</sup> Arts activities help give that identity a positive colour.<sup>85</sup> Dance and

drama classes, for example, help pupils build self-confidence and develop a meaningful and positive sense of self.<sup>86</sup> Going to the theatre also contributes to these processes.<sup>87</sup> As do talking and writing about yourself.<sup>88</sup> On average, this is even more important for pupils in the lower streams of Dutch secondary education (vmbo) and special education than for pupils in higher streams (havo, vwo).

Telling a positive story about yourself helps you to be hopeful, and therefore creative and self-directed. This means that a positive identity not only contributes to good school performance,<sup>89</sup> but also helps pupils commit to their goals,<sup>90</sup> think and act flexibly, and be resilient.<sup>91</sup>

### Expressing what you cannot say

Cultural activities offer children and teenagers the chance to express what they cannot normally communicate. More than any other emotion, shame is the most disruptive when it comes to processing events and most often leads to trauma and depression.<sup>109</sup> People who are ashamed usually do not want to talk about it, but drawing or writing often provides an outlet. Researchers also see this as an explanation for why people who keep a diary tend to experience less anxiety and stress.<sup>110</sup> During a writing experiment, 120 adolescents were found to be less upset by the disturbing events they had written about and less inclined to shove them aside.<sup>111</sup>

### Hidden talents

Developing a positive identity is therefore an important element. One way to help achieve this is by giving pupils the chance to discover what they are good at. Unfortunately, our school system tends to confront pupils from families with a low socioeconomic status with what they are not good at. This includes self-directed learning, creative self-confidence and social resilience. Researchers believe that these could be three key elements in a wide-ranging brain system of self-regulation. In addition to thinking, this system also controls emotions, behaviour and bodily processes.<sup>92</sup> It works differently for everyone and childhood circumstances determine how it works. Regulation develops differently in children who grow up experiencing poverty, stress and uncertainty. This means that they develop different skills from

children with a safe, stable, social and stimulating home environment. While the first group are poor in self-directed learning, creative confidence and social resilience, they are more highly developed in other skills. Researchers talk about ‘hidden talents’ because they are usually overlooked within the school system, and are not assessed in tests.<sup>93</sup> Drama, literature, music and other cultural activities draw out these hidden talents, creating a school culture that better suits pupils from families with a low socioeconomic status. After-school care can also contribute in this area.

For example, children and teenagers from families with a low socio-economic status are often good at recognising deceit and insincerity, and have a keen eye for sincerity.<sup>94</sup> They are better able to gauge the thoughts and feelings of others (a skill known as empathic accuracy). As a result, they often show greater compassion, consideration and attention to others. On average, they also have a better understanding of interdependence and social class.<sup>95</sup> As a result, they feel uncomfortable in a performance culture where pupils compete with each other for the highest grades.<sup>96</sup> If a school puts the focus on individual pupil development, this unease becomes less of an issue.<sup>97</sup> Lesson formats in which pupils work together towards a common goal also have this positive effect. Pupils whose parents have a lower level of education often achieve the highest marks under those conditions.<sup>98</sup>

Researchers therefore argue in favour of teaching methods that create more scope for the skills in which these pupils excel.<sup>99</sup> They advise connecting with these pupils’ hidden talents: empathy and working together towards a common goal. Making an appeal to cultural subjects is a clear option in this regard, not least because these children and teenagers often have specific narrative and sensory talents. On average, they tend to be more gifted observers and better storytellers, and have a better understanding of stories.<sup>100,101</sup> Generally speaking, they often possess better pattern recognition skills, both visual<sup>102</sup> and auditory.<sup>103</sup> By bringing out these talents, a school can help them develop a positive identity and a more hopeful perspective. In turn, this will make it easier for them to catch up in other skills.

Arts and cultural education therefore provides pupils from families who have a low socio-economic status with a learning environment and school

culture in which they can do better and stand out by making a positive impression.

## Conclusion

As we have seen, the circumstances into which you were born greatly affect your future. How much stress are you exposed to? How are you stimulated, challenged and supported at home? This has an important influence on your self-directed learning skills and creative self-confidence, your curiosity and self-esteem. The distinction between being hopeful and lacking hope lies at the heart of these interwoven skills. To create equal opportunities, education should therefore be a source of hope. Being hopeful requires social support and a positive identity. This makes playing music, dancing, acting and participating in sports a doubly powerful exercise in hope: not only strengthening social support but also a sense of identity.

Creative and cultural activities help a school reduce the disparities between advantaged and disadvantaged young people and prevents these disparities from being magnified. Magnification can occur in an education system where the primary focus is on skills in which disadvantaged pupils fall short.

Creating equal opportunities means placing greater emphasis on skills in which this group does excel, such as empathy, storytelling and pattern recognition. With a cultural, sociable and non-competitive school culture that helps disadvantaged pupils to flourish. And with more activities that offer scope for personal autonomy and intrinsic motivation, thereby sharpening their sense of agency and hope.

Education in drawing, music, theatre, dance, games, sports and science and technology fits these aims like a glove. For many pupils, it provides the intrinsic challenge and social context to acquire strengths that they are less likely to develop at home, and by doing so to keep pace with their peers in their development.

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