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# **Drawing on imagination: Primary students' ideal learning environments**

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## **Abstract**

Research has established a close relationship between learning environments and learning outcomes (Department of Education and Early Childhood Development, Victoria, 2008; Woolner, Hall, Higgins, McCaughey & Wall, 2007) yet little is known about how students in Australian schools imagine the ways that their learning environments could be improved to enhance their engagement with the processes and content of education and children are rarely consulted on the issue of school design (Rudduck & Flutter, 2004).

Currently, school and classroom designers give attention to operational matters of efficiency and economy, so that architecture for children's education is largely conceived in terms of adult and professional needs (Halpin, 2007). This results in the construction of educational spaces that impose traditional teaching and learning methods, reducing the possibilities of imaginative pedagogical relationships. Education authorities may encourage new, student-centred pedagogical styles, such as collaborative learning, team-teaching and peer tutoring, but the spaces where such innovations are occurring do not always provide the features necessary to implement these styles. Heeding the views of children could result in the creation of spaces where more imaginative pedagogical relationships and student-centred pedagogical styles can be implemented.

In this paper, a research project conducted with children in nine Queensland primary schools to investigate their ideas of the ideal 'school' is discussed. Overwhelmingly, the students' work emphasised that learning should be fun and that learning environments should be eco-friendly places where their imaginations can be engaged and where they learn from and in touch with reality. The children's imagined schools echo ideas that have been promoted over many decades by progressive educators such as John Dewey (1897, in Provenzo, 2006) ("experiential learning"), AS Neill (in Cassebaum, 2003) (Summerhill school) and Ivan Illich (1970) ("deschooling"), with a vast majority of students suggesting that, wherever possible, learning should take place away from classrooms and in environments that support direct, hands-on learning.

## Drawing on imagination: Primary students' ideal learning environments

In *'The Future of Education'*, Kieran Egan (2008) offers a concept of schooling in the mid-21<sup>st</sup> century that is based on creativity and imagination, with its principles echoed in the "exuberance and architectural wit" (p. 129) of the school buildings. The research on which this paper is based suggests that school planners who wish to take up the challenge of Egan's imaginative education can look to today's young students for inspiration in creating educational environments that can lead to creatively engaging environments and pedagogy.

This paper reports on a **research project using visual methods** that was conducted in a number of primary schools across Queensland to address the mostly unmet need for students' perspectives to be included in the physical design of schools (Rudduck & Flutter, 2004). The project commenced in May, 2009, with a principal aim of eliciting the **perspectives of young people relating to learning environments** to inform pedagogy and school design. Through their schools, **grade 5/6 students (9-11 years old) were invited to submit annotated drawings with up to 200 words of text illustrating their ideal educational spaces.**

Overwhelmingly, the students' work emphasised that learning should be **fun and that learning environments should be eco-friendly and imaginative**. They also emphasised **colour and excitement; places where their imaginations can be engaged; places where they learn from and are in touch with reality:**

*I think a bright and colourful school would make the students enjoy coming to school. (15SCH02)*

*It would be good to have rainbow Library with lots of bright colours that cheered up everybody. (15SCH13)*

Clearly, the participants **did not want 'boring' classrooms** and, in this, the children's imagined schools **echoed ideas that have been promoted over many decades by progressive educators such as John Dewey (1897, in Provenzo, 2006) ("experiential learning"), AS Neill (in Cassebaum, 2003) (Summerhill school) and Ivan Illich (1970) ("deschooling"),** with a vast majority of students suggesting that, wherever possible, **learning should take place away from classrooms and in environments where direct, hands-on learning can occur.**

*I would like to learn around a lake [...] On the jetty you can stick your head in the water and look at the fish up close. The learning space would be a great idea for kid or any student doing a project on water animals and birds. You can also camp over night and observe the night animals and see what they eat and what sort of bugs live where. (95SCH01)*

The children who contributed to this project were free of constraints such as health and safety concerns and a restricted budget that would normally be major considerations in school design. Their ideal learning environments were thus able to include facilities such as onsite theme parks, roller-coasters to deliver students to and from classrooms, games arcades, water slides, fountains and pools. However, while they were uninhibited by bureaucracy and gravity, and probably unaware of the modernist design principle of 'forms follows function', they readily identified the primary function of schools as establishing spaces to promote and stimulate effective learning and teaching and, whether the imagined spaces were fantastic time-machines in space or more 'real world' floor plans of a building, the intention appears to be to make learning as relevant and enjoyable as possible.

The children's imagined learning environments suggest that, whether learning takes place within classrooms or on tropical beaches, the time may have come for the ideas of Dewey and Neill (and, perhaps, Illich) to receive closer consideration in fitting learning environments to the learning preferences of young children. Heeding the children's messages could result in the creation of spaces where more imaginative pedagogical relationships and student-centred pedagogical styles can be implemented.

### Background to the project

Research has established a close relationship between learning environments and learning outcomes (Department of Education and Early Childhood Development, Victoria, 2008; Woolner, Hall, Higgins, McCaughey & Wall, 2007) yet, too often, students are passive recipients of education in adult-centred environments. Little is known about how students in Australian schools imagine the ways that the environments in which they exist for six or more hours each weekday, forty weeks a year for around 12 years, could be improved to enhance their engagement with the processes and content of education.

While the voices of the end users (i.e., teachers and students) are increasingly suggested as essential to planning processes in school design (Woolner, Hall, Wall & Dennison, 2007), children are rarely consulted on the issue of school design (Rudduck & Flutter, 2004). Current designers give attention to operational matters of efficiency and economy, so that architecture for children's education is largely conceived in terms of adult and professional needs (Halpin, 2007). This results in the construction of educational spaces that impose traditional teaching and learning methods, reducing the possibilities of imaginative pedagogical relationships. Education authorities may encourage new, student-centred pedagogical styles, such as collaborative learning, team-teaching and peer tutoring, but the spaces where such innovations are occurring do not always provide the features necessary to implement these styles.

In those parts of the world, however, where children have been invited to contribute to school planning and in a number of projects with young students, they have provided school designers with innovative ideas: Sack-Min (2008), for example, reports on a US school design competition led by architects to encourage student input into schools design, believing students and teachers should have a greater voice in school design; French and Hill (2004) worked with children's drawings in Kansas City to identify aspects of school design to inspire creative planning and to ignite innovative ideas; and in Melbourne, Australia, children were invited to work with a school designer to refashion a major part of a primary school building (Mary Featherston Design, 2006).

Elsewhere, however, some education authorities prefer to collaborate with global corporations as they plan the educational future of children. For example, the West Philadelphia "School of the Future" demonstrates the incursion of the corporate world into school design, with plans of the Microsoft Corporation to export their model worldwide (School District of Philadelphia, 2004). Whether based on the ideas of children or the corporate world, the design of learning spaces has important implications for the teaching and learning styles that can take place within them.

### Theoretical framework

The theoretical framework for this study was grounded primarily in the work of Greene (1995) and Wright-Mills (2001), both of whom cited the deployment of critical and empathic imagination in addressing education reform. Support for image-based research was drawn in the main from Schratz and Steiner-Löffler (1998) while student participation in school improvement was framed by the extensive work of Rudduck and Flutter (2004).

Student voice and participation in school review and development have been extended through image based research (Carrington, 2007; Carrington, Allen & Osmolowski, 2007), contributing to change and progress in schools. Image based research is used to “set out to find other possibilities of looking into the ‘inner world’ of school from the pupils’ perspective” (Schratz & Steiner-Löffler, 1998, p.236). Such images have been called ‘a rich source of qualitative data’ (Walker, 2008, p. 100). Visually-based data gathering has, then, become accepted as a valid method of enabling student voice in school improvement (Barraza, 1999; Buldu, 2006; Carrington, 2007; Schratz & Steiner-Löffler, 1998; Shratz-Hadwich, Walker & Egg, 2004) and can be developmentally more appropriate where students find difficulty expressing themselves through language.

The choice of Year 5/6 was based on Piaget’s concrete operational stage during which children begin to think logically and become more empathically aware, but where practical aids are mostly essential. A 1976 study, *The Structure of Imagery* (Dean, 1976), confirmed Piaget’s theory of imagery development in relation to spatial relations in children’s drawing. Later studies have shown that, by ages 7-9, “children have developed a graphic language ... including specific symbols and rules of spatial organisation” (Walker, 2008, p. 97) and at around age 9-11 they strive for greater accuracy (see also Barazza, 1999).

### **The role of imagination**

Fine (1994) argued that educational research should “challenge what is, incite what could be, and help imagine a world that is not yet imagined” (p. 30). In this way, the processes of this research were consistent with what Greene (1995) called “social imagination: the capacity to invent visions of what should be and what might be in our deficient society, on the streets where we live, in our schools” (p. 5). The imaginative process, it is asserted, encouraged students to think beyond the limits of their normal school surrounds, and to develop creative solutions to the use of educational space.

John Dewey was an early advocate of imagination in education, seeing it as a “work of art” requiring “qualities of personal enthusiasm and imagination” (Dewey, in Simpson, Jackson & Aycok, 2005, p. 3). Imagination has been described as the “hard-working core of children’s thinking” (Egan, 2003) and it is this core that the project explored through the drawings and written work of the participants.

### **Approach and methodology**

The research project was partly inspired by *“The School I’d Like”* (Burke & Grosvenor, 2003), which reported on a competition run in the UK that attracted a wealth of entries depicting the educational environment from the perspective of the children. The current project took into account the processes of that study but differed in being restricted to a small age range of school students (Years 5 and 6), and being non-competitive. The project also built on processes used in students-as-researchers projects being carried out by the researcher in which visual narrative has been successfully employed as a research method to elicit young people’s views on issues of school engagement.

### **Participants**

Grade 5/6 (10-11 year-old) students in primary schools in a variety of areas of Queensland were invited to submit drawings and text to the project. The regions of the State targeted range from inner-urban to rural-remote and include the northern coastal strip. Negative replies suggested time-related issues for non-participation (e.g., a busy semester; NAPLAN requirements). There were also unforeseen factors such as school closures due to ‘swine flu’ and a teacher strike.

133 individual submissions were received from nine schools, coded for anonymity, summarised in Table 1.

School code	Region	School type	Submissions received: Female	Submissions received: Male	Total No. of student submissions
20BC	Brisbane urban	Independent School	3	5	8
50BC	Brisbane urban	Faith School	12	3	15
40DD	Darling Downs	State School	5	2	7
10CC	North coast	Faith School	8	8	16
17CC	North Coast	State School	17	16	33
90TV	North Coast urban	Faith School	11	5	16
15SCH	Sunshine coast hinterland	State School	11	4	15
16SCH	Sunshine coast hinterland	State School	6	1	7
95SCH	Sunshine coast hinterland	State School	8	7	15
<b>Total</b>			<b>82</b>	<b>51</b>	<b>133</b>

Table 1: Participating schools

An optional lesson plan was sent to coordinating teachers in each school (Appendix 1). Notwithstanding the project's title, the term 'educational spaces' was used in the research information supplied to participating schools to avoid restrictive notions of what the concept of 'school' means. This is to encourage thinking about real or virtual space in which teaching and learning may occur or, as Ferguson and Seddon (2007) have referred to it, "the shifting imagery of education" that includes red brick schools and dispersed learning networks. Stimulus questions were provided to teachers to assist students to think beyond the confines of their own schools. Participating children were requested to produce their work on A4 paper to facilitate computer scanning. Drawings could be in black and white or colour, and could be annotated to help explain any aspect. Importantly, the students were asked to write up to 200 words to supplement the visual product; for example, to say what is ideal about their imagined learning environment, or to further explain the drawing and why they have chosen particular shapes, colours, etc. The supplementation of the images with written text or annotation helped to ensure that the children's meanings were made clear. Ability to draw in a representational fashion was not necessary for this project and all children who submitted material were issued a certificate of appreciation with a book voucher issued to each class.

### Coding and analysis

Coding the drawings and the accompanying texts was carried out in two distinct areas of analysis: visual and expressed content, and imagination. Coding, using MAXqda analysis software enabled the identification of emergent themes from both drawn and written work.

Each drawing and accompanying text was coded by content. This included elements such as the drawn and imagined environment, types of buildings and grounds, environmental considerations, special features, etc. This instrument was applied in the first instance to code features of the contributions for comparison on a basis other than artistic ability. The analysis also considered similarities which were coded to determine emergent themes in relation to the various aspects of school such as physical and organisational properties.

The typology of imaginations developed by the researcher (Bland, 2004) (Appendix 2) was used to develop a tool for analysis of the visual data. The typology was developed through the researcher's PhD studies and is based on the work of a range of theorists who have examined imagination in sociological contexts. From the four major categories (fantasy, creative, critical and empathic) and further sub-divisions, an analytical tool was developed for this project. This enabled the analysis to be based on dimensions such as empathy and criticality as well as creativity.

## Findings

The written material that accompanied the drawings proved essential to interpreting the children's drawn ideas. While the drawings provided the major vehicle for their imaginations, their written statements provided crucial information about what they had drawn, greatly assisting understanding and analysing the visual work. One potential problem in analysing visual material is interpretation from the standpoint of the viewer whose age, background, social relations, and culture, may not only differ from those of the artist but may lead to incorrect assumptions and interpretations. One example of the potential for adult misinterpretation from the project is the work of a Year 5 female student from a faith-based school who drew a girls' school. The researcher's initial assumption was that gender segregation was an essential aspect of the student's ideal learning environment, a view supported by the religious culture of the participating school. The student, however, in her written text, added the statement:

*'I chose a girl school because I'm a girl and it's easy for me to draw a girl'* (50BC06).

## Content features

The themes developed from the submissions showed strong groupings in a number of key areas:

- Animals featured very strongly, including farms and petting zoos, so that students can learn animal welfare.
- Trees and plants, particularly food-producing varieties, occurred regularly in the drawn and written work, many linked to curriculum as well as healthy eating.
- Water in the form of waterfalls (for comforting sounds), duck ponds, and creeks were featured by many participants while others preferred being on a beach, on the ocean, or even under the sea.
- There are frequent instances of environmental awareness, with solar power and the use of direct sunlight being suggested by many participants.
- Technology combines with environmental sensitivity through wind and solar powered computers and climate control.
- Colour is a vital component of the school environment; rainbows are often mentioned and drawn as essential features of buildings.
- There was a strong emphasis on sport, particularly among male participants, and on creativity.

## Results by imagination type

Greene (1995) and Wright-Mills (2001) cited critical and empathic imaginations as key tools in addressing matters of education reform and these notions contributed to the typology of

imaginings constructed by the researcher which also includes fantasy and creative imaginings. In the examples that follow, quotations are taken directly from the participants' written explanations, *without spelling or grammatical corrections*, where they describe what has been drawn.

**Fantasy** The range of ideas emanating from the children's imaginings is vast; a flying carriage drawn by a dragon, a hot air balloon, and inside a video game are some of the more fantastic sites that have been conceived. One student imagined an entire town as the school with this town being in a snow-covered country where students travel on skis. Interestingly, this participant's school was in a tropical area of the State and it is unlikely she would have experienced snow at any time. These are some of the more extreme examples of fantastic environments.

*My drawing is an aeroplane school where you can go anywhere. You can go to Rome if you're learning about Roman numerals. The plane is designed to go really fast so it only takes a couple of hours to get from Cairns to Rome. (10CC16)*

*My drawing of a school is in space. And it's called Station 1000. There is a place called Mercury Mania, which leads to the rest of the school. The 2 planets, planet 424 and planet 111 are classrooms, which have star doors and space boards. The chairs are green and soft. And the aliens call them selfs koolies. Above planet 424 there is a shuttle stations, that is a car park. There is a milky path which leads to playground Pluto. And right at the bottom is the tall toilets. (10CC04)*

A good number suggested beaches and rain forests, even tree houses, as school sites, although participants in specific schools appear to have restricted themselves (or have been restricted) to more familiar environments that include individual classrooms and fairly traditional styles of building.

**Empathic imagination** Among those that considered the needs of others from an empathic point of view were a number who suggested protecting younger children through the provision of segregated areas and two who considered the needs of school office staff. One Year 6 male proposed a fruit and vegetable garden "for kids that don't have lunch" (15/SCH/10). Only two proposed a lift for people using wheelchairs or crutches (16/SCH/02; 10/CC/11) and two considered "mums" who make lunches (17/CC/16; 50/BC/12).

Other examples of empathic imagination include consideration of students with a disability:

*a wheelchair which has hydraulics for the disabled to get up the many stairs of the school (10CC11)*

*There are railings so people don't fall. (10CC15)*

*I would like to see a lift to classrooms so people with broke legs and knees can get to class and don't have to club up stairs with crouches. (16SCH02)*

One student in particular considered the needs of low income students:

*The fruit and vege garden is for kids that don't have any lunch and the food is used into the food court. (15SCH10)*

Some considered how the social environment of school affects others:

*This is my dream school you can have so much fun! Because people are never mean to you. They share their ideas with you and you can play games with them. (50BC07)*

*Nobody cries or get hurt. (40DD03)*

*I have thought of a way so younger and older kids can buddy up. I think that each teenager should have at the most one or two younger kids as buddies. The teenager would have to pass a test to get a licence and they would be allowed fifteen minutes between classes to get their little buddy to their next class. This idea will teach road safety and responsibility. (17SCH03)*

*Nobody is loathsome here! (40DD06)*

*No one ever hated this school. (50BC11)*

One interesting example suggested the student believes that studious children do not experience 'fun' at school and considered their needs:

*Everyone would have an experience of fun, even those who loved books and studying. (50BC15)*

**Creative imagination** Creative imagination was displayed by a number of students who considered alternatives to, and improvements to, the more familiar style of school. For example, one student considered the advantages of learning in a shopping mall:

*I would learn best in a mall. I'm not very good at maths but shopping helps me by allowing me to add up price tags, learning what the difference between 50% and 70% is in a real world environment. The mall is a great place to learn new words. I learnt all these words at the mall. purchase, sale, and percentage. I also learnt the meaning of those words. Instead of imagining of being in a shop you are already in a shop! Learning in a shop would be awesome. You could simply pick out some clothes and add them together. Now that is cool. (Female, Year 6, 90TV04)*

**Critical imagination** Creative imagination converts to critical imagination when it disrupts existing models or challenges the power structures inherent in them. In this study, there have been proposals to reduce the school day and the school week and some instances of indirect criticism of teachers who yell and who are boring, but no student has directly challenged the authority of schools or the very idea of attending some kind of school, although one did suggest that schooling should be for teenagers only. This result is unsurprising given the age group of the participants.

It is at times obvious in the students' work that the supervising teacher has given advice or ideas to the participants about ways to proceed with the work, resulting in a 'house style'. For example, one school's submissions mostly fit the category of 'fantasy', providing some of the more extreme imaginative concepts, while another school's submissions are mostly floor plans. In the written texts, most of one school's participants used the suggested questions as sub-headings. A further contributing teacher effect is that some of the supervising teachers are generalist primary teachers while others (mainly in private schools) are specialist art teachers. Some teacher effects may be more subtle and harder to detect, so for the purposes of this study, identification of such factors has been through repetition of particular

ideas and styles in the children's work that are unlikely to result from sharing among close friends. Ideally, the researcher would work directly with the children to ensure consistency and overcome teacher influence.

## Discussion

Children's perspectives may be contradictory to the conditions that adults see as 'desirable'. One of the characteristics that school designers in the UK found when consulting with students is that their perspectives are often unpredictable (Burke & Grosvenor, 2003; Rudduck & Flutter, 2004). However, students as young as first grade involved in school design have been able to contribute "ideas that teachers would not have thought of" (Ruddock & Flutter 2004, p. 21) with their insights able to assist educators and planners to see things that are important to students but that adults generally overlook.

## Implications for pedagogy

The findings and features closely parallel those of a US study (French & Hill, 2004) in which the authors concluded that the participant's work displayed a 'desire to integrate colour, light, and interesting spaces into the learning environment' (p. 37). French and Hill (2004), however, reduced the participants' imaginative concepts to simple adjustments to physical spaces, suggesting that the more imaginative elements, such as theme parks, could be integrated through the use of murals and other "appropriate design elements" (p. 37). Similarly, while Shaw (2009) suggested that school designers should stay away from industrial age "egg carton" design which has students isolated in small classrooms, her solutions, however, are tied to ideas of formal physical spaces for learning that then constrain and, to a great extent, define pedagogy. Thomas (2010) challenged this approach to school design, stating that

the design of traditional learning spaces proceeded from the assumption that learning is largely confined to such formal spaces. Current views on learning acknowledge that much, if not most, learning does not occur in formally designated learning spaces (Cross, 2007), but rather, in informal spaces not necessarily originally envisaged as learning spaces. This realisation lies at the heart of liberating learning from a form of physical imprisonment. (p. 503)

Although specific curriculum matters were not sought in this project, the children frequently offered ideas about what should be taught and how:

*Fun and hard all round farming school. My farming school would be great for teenagers and grades 6 and 7 students to learn about growing crops and running sheep, goat and cattle farms successfully. It will cost \$350 for 3 months, \$250 for 2 months, \$150 for 1 months and \$80 for 2 weeks. Each and every group of up to 13 people will have up to 4 or 5 guides with them. You will make friends for life. If you are wanting to get down and dirty come to my fun and hard all round farming school. (40DD02)*

*There is a gym/circus tent so you can learn circus arts and keep fit and healthy. It will make you feel good about your self being able to do circus tricks. A vege garden and a green house so you can grow food used for the School, and grow plants for fun. It would be a great way to introduce gardening to young people. [...] An art room allows you to be creative and study the arts. (15SCH14)*

*Maths, Sose, Grammar and Science help me learn because they are really important for me and makes me more smart. (50BC06)*

*The Teachers are Kind and you don't get any homework. (20BC01)*

*My learning concept is to learn about different people and their country's riding on the back of Elephants and going on a safari [...] In this place people can learn without hearing the noise of the radio or the teacher yelling. (90TV14)*

*The tables are in groups so people can work together. (95SCH04)*

As previously mentioned, the work submitted by the students in the present study echoes progressive education ideas such as John Dewey's "experiential learning", AS Neill's Summerhill school and Ivan Illich's "deschooling", with a vast majority of students suggesting that, wherever possible, learning should take place away from classrooms and in environments where direct, hands-on learning can take place.

Interestingly, no participant considered abolishing the concept of school (possibly because the project took place in schools), although one male did suggest it should take place in his own bedroom so that he did not have to get out of bed early. Unlike AS Neill's Summerhill school, the notion of structured learning was not challenged. Similar to Neill's methods, however, school was seen in general as a social environment where friends gather to learn, play and have fun, with the main emphasis on fun and well-being. This is the most frequent message being presented whether in relation to the school environment, the primary features and facilities, or pedagogical aspects. The message of fun and playing together continued into proposals relating to class work. Not surprisingly, perhaps, there was a strong emphasis on sport, particularly among male participants, and on creativity.

The participants did not have to concern themselves with health and safety matters or the limitations imposed by restricted budgets that would normally be major considerations in school design. They could, therefore, "see things big" (Greene, 1995, p. 10) rather than use the small lens of a systems world viewpoint. Their ideal learning environments were thus able to include facilities such as onsite theme parks, roller-coasters to deliver students to and from classrooms, games arcades, water slides, fountains and pools. However, while they were uninhibited by bureaucracy and gravity, and probably unaware of the modernist design principle of 'form follows function', they readily identified the primary function of schools as establishing spaces to promote and stimulate effective learning and teaching and, whether the imagined spaces were fantastic time-machines in space or more 'real world' floor plans of a solid building, the intention appears to be to make learning as relevant and enjoyable as possible.

Like Dewey (in Provenzo, 2006) and Greene (1995), the participants believe that the boundaries of school can be extended and that learning can take place away from "stuffy" and "boring" classrooms:

*I love to fly around and watch animals tall and small crawling around so I decide to have my concept as a carriage being pulled by dragons. It would be ten times better than learning 7 hours a day in a stuffy old classroom. It would be so quiet in the sky, flying through the trees and when we got to hot we could stop at a beach and have a swim and morning tea or lunch. Flying around the world, learning new languages would be so fascinating. You could even dig for dinosaur bones, find shells or even snorkel in the reef and find interesting creatures. (90TV01)*

*My favourite place to learn is where the wind blows in my face and the trees sway side to side slowly and steadily. I sit in the warm soft sand watching the bright yellow sun glmer across the was. I wake up every morning and watch the sun rise as the beatiful coulours mix. this is my place I like to learn in and I think its better than a stuffy class room. (90TV08)*

*My learning space concept is an untouched, secluded, unreal rainforest. I like learning in a peaceful environment away from all the noise. I would like to be able to walk outside with a book, sit in the flower beds and read. I would also enjoy to learn about all the different animals and plants. There is so much to explore as well. I think the classroom is too closed and inclosed. It feels good to be outdoors. I would love to live in a rainforest just like that. (90TV16)*

*Instead of learning inside, I'm on a picnic blanket. There is a building. In the building there is stationary for learning. I learn best in a tropical environment. It's refreshing. (50BC02)*

*The idea of school to me usually consists of classrooms and offices. Why can't we have an outdoor school? We can learn outside. My idea of school changed from this project. It seems better to learn outside in a good environment. It is better for us as there is oxygen everywhere and no electricity is being used as we could be using sunlight. (50BC05)*

Neill, according to Stronach and Piper (2008), constructed Summerhill School with a weak spatial boundary: "The classrooms are inside but the outside woodland is accepted as an equally important learning area—how to play, make things [...] Summerhill also appeared to staff and students as a place of necessary risk. The grounds were open to the students, tree-climbing was permitted" (p. 20). Similarly, Greene (1995) discussed the need to dissolve the "artificial separations of the school from the surrounding environment" (p. 11), making use of community facilities. Illich also proposed using community facilities as sites for education. This 'deschooling' included using public libraries, laboratories and "showrooms like museums and theatres; others can be in daily use in factories, airports or on farms but made available to students as apprentices or in off-hours" (Illich, 1971, in Hart, 2001, p. 72).

Likewise, the project participants frequently refused to acknowledge boundaries between purpose-built school enclaves and their hinterlands, or even the wider world. Shopping centres, as mentioned earlier, can provide essential learning in mathematics and language skills, while mobile observatories aid study of the global environment:

*I've only ever been in a hot air balloon once, so I would love to travel around the world in one. That's why I chose my concept to draw a picture of me travelling in one. You could travel anywhere you want. Instead of looking at pictures of the places and learning, you could go there and learn there. It's also much more exiting than sitting in a classroom learning. That's the school I would want to be at. (90TV15)*

It is the natural environment, however, that features most strongly. Many participants wanted to be taught in the bush, rain forest, or beach, so that they could have direct experience of dealing with creatures in their native habitat. This, they claimed, would lead to learning about animals' habits as well as useful information about dangerous creatures and first aid. These environments also provide quiet and peaceful places to learn for many participants:

*I would like to learn in a peaceful place where you could hear the birds whistle. I would also like to be working alone, so I could concentrate. The reason there is a waterfall is so you can hear the relaxing sounds. (95SCH12)*

*My future school is located near a beach [...] I think a quiet and peaceful place is a great place to work. (17SCH09)*

*My learning space concept is an untouched, secluded, unreal rainforest. I like learning in a peaceful environment away from all the noise. I would like to be able to walk outside with a book, sit in the flower beds and read. (90TV16)*

*I'd like to be taught some where where it would be nice and calm were birds are constantly singing like a wind up music box a peaceful place were my imaginings come true. Where you can lay back, relax, feel the cool breeze tickle your skin as you dream a dream away upon the tree tops were you can fly like a bird and when you wake up you can do it all again. (95SCH14)*

Coupled with a desire for direct experience in natural surroundings was a **concern for the environment**. Ideas about technology were combined with environmental sensitivity through suggestions for **wind and solar powered computers and climate control**.

*This is a good place to learn with solar panels to collect electricity for the fans and lights. The running water below is a peaceful sound, the electric windows on the roof let in just enough light when needed. (95SCH05)*

*For my ideal school, the first thing that came to mind was an eco-friendly school [...] Learn about animals healthy or sick & learn to look after them. (40DD04)*

Elsewhere technology is featured in the form of computer labs while classroom computers are suggested by many students. There are also more futuristic and fantastic uses of technology, such as vibrating heated chairs in the classrooms and shrink rays to allow micro-exploration of different environments.

*I love finding out what things look like inside so I thought a shrink ray would be good so you could shrink yourself and go inside things to see the bio structure of a psp or a human or bug or anything it would be a great learning experience on how to build things. (90TV03)*

Alternatively, students could become avatars in virtual learning environments:

*I love technology so I have chosen a learning environment where we learn in an electronic world where we can enter our favourite video games and explore. There is a portal to into the t.v. and play the game and the only way out is to finish a level or the game. (90TV06)*

Thomas (2010) suggests that this application of computer technologies represents another dissolution of the traditional boundaries of learning environments: “the disappearing differences between ‘learning spaces’ and ‘learning environments’, coupled with the further ‘displacement’ of the learner (turned avatar) in virtual spaces such as *Facebook* and *Second Life*, serves to ‘displace’ learning itself.” (p. 502). Virtual spaces should thus be regarded no differently to physical learning environments. This “anarchy of the web” (Hart, 2001, p. 75) is the current day counterpart to Illich’s vision of a de-schooled society.

## Conclusion

Dewey (in Simpson, 2006, p. 69) appears to have realised what Habermas spoke of some decades later, that the system has colonised the lifeworld of education and that the mechanics of schooling, including grouping and grading, control what is learned and where and how. According to Simpson (2006), Dewey believed that all students, regardless of class status, should be able to escape the limitations of their backgrounds to enter “new, broader,

and liberating” (p. 77) education environments in which students, and teachers, learn from each other.

The students’ work emphasises that learning environments should be fun, eco-friendly and imaginative. The ideal schools featured facilities such as onsite theme parks, roller-coasters to deliver students to and from classrooms, games arcades, water slides, fountains and pools. They also emphasised colour and excitement. As French and Hill (2004) stated, “these themes show that students want their schools to be special places that capture their interest and inspire their imaginations.” (p. 38). The study has also shown a **desire among children to learn in cooperative and friendly social environments**. A good number of students have specifically mentioned this in relation to ways of learning, showing **classroom arrangements that support group work**. Both Dewey (1897, in Provenzo, 2006) and Neill (in Cassebaum, 2003) promoted such social environments as essential to the basis of educational experience, demonstrated through Dewey’s ‘model school’ and Neill’s Summerhill. Hyttem (2006) states that “what Dewey meant by experience as the anchor for education is perhaps best seen in his own model school. The curriculum in his school was developed around activities with which students had experience, and moulded into subjects related to real life” (p. 460). Similarly, Neill’s vision, according to Moore (2000), was a simple one of children working and playing together to find things out by themselves.

While the participants were able to be fully imaginative and free of all the constraints of a normal design brief, the children’s voices expressed through this project raise questions relating to concepts in the design of learning spaces. Central to these questions is the place of the hopes and ideas of the children who inhabit our schools for twelve or more years of their developing lives in the philosophy of education that shapes every decision underpinning educational design. **An initial question is the starting point for school design; whether to place boundaries around sites of learning and focus on perceived needs for formal education in a given physical space, or to defer the idea of physical boundaries until an assessment has been made of the educational values of existing resources of a community, building on the assets that currently exist, and creating new spaces to enhance those resources. Secondly is the question of how physical structures for education relate to an engaging and creative pedagogy; to what extent do they enhance or impede innovative approaches to teaching and learning? To what extent do they allow students to engage their imaginations creative, empathic, and critical imaginations?**

As Greene (1995) stated, however, “the role of imagination is not to resolve. [...] It is to awaken, to disclose the ordinarily unseen, unheard and unexpected” (p. 28). The methodology employed in this project appears to provide a means for the Year 5 and 6 students to express their imaginations in ways that are both fantastic and practical, with ideas developed regarding learning environments and pedagogy that can contribute to school design. Schools of the future should embody exuberance and architectural wit in their buildings (Egan, 2008) and the imaginations of the project participants are an exciting source of ideas from which school designers can draw.

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## LESSON PLAN

### Project purpose

A number of Queensland primary schools have been invited to participate in this project. The major purpose of the project is to gather annotated drawings from Year 5 and 6 students, with up to 200 words of text, illustrating their ideal school. The drawings and text will be analysed and compared across school types (eg, size, geographical location) to obtain a better understanding of the needs and educational desires of young people in relation to changing learning environments. It is anticipated that the findings will inform consideration of the design and use of educational spaces. On completion, all drawings will be exhibited through a dedicated website which will be publicly accessible and further comment will be invited from participants. 50 x \$20 book vouchers will be awarded to students whose ideas are considered to employ the most creative, empathic or social imagination. Drawing ability will not be a factor in allocating these awards.

### Year levels

Children in Grades 5 and 6

### Activities

The notion of 'school' or 'learning environment', as it applies to this project, can be as broad as the children's imaginations allow: from buildings to wired environments, from classrooms to beaches, and beyond.

Sample stimulus questions to help to get the students thinking about the general concept of 'educational spaces': e.g.

What does the idea of 'school' mean to you?

How, when and where do you learn best?

Do schools need to have classrooms, buildings, etc? Why?

What things help you to learn?

If you could choose to do school lessons anywhere, where would you choose?

If you could design a school, where would it be? What shapes would you use? What special areas would you include?

Individual drawing/painting of an ideal 'education space' on white A4 paper\*.

Written explanation (200 words max.) to accompany the visual product

### Objectives

The students will create a drawing/painting, with explanatory text, in black and white or colour via a variety of media (paint, markers, inks, coloured pencils, etc.) to convey ideas about an ideal school.

### Vocabulary:

Education spaces, learning environment, imagination, design.

**Outcomes**

The students will express visual ideas, feelings, and values through the use of art elements and design principles.

**Special instructions**

- The drawings can be about any aspect of 'learning spaces' such as classrooms, school grounds and buildings, idealised places to learn, or completely imaginative places.
- Notes or 'labels' can be applied to the drawings to help explain any aspect.
- When the drawing is complete, the students are asked to write up to 200 words on the submission form supplied to supplement the visual product – eg, to say what is ideal about their imagined school, or to further explain the drawing and why they have chosen particular shapes, colours, etc.
- Please explain to the students that their drawings will be submitted to Queensland University of Technology and posted to a special website for everyone to view their work.
- Although well-developed drawing skills could enhance the visual imagery, ability to draw in a representational fashion is not necessary for this project. The supplementation of the images with written text or annotation should help to ensure that the children's meanings are made clear.
- It would be greatly appreciated if the drawings could be submitted by the end of Term 2.

**Time**

30-60 minutes

**Resources**

One A4 sheet\* of paper per student.

Drawing/painting tools, any media

One submission entry form per student

(\*Please use A4 size only to facilitate mailing to QUT and scanning to the website)

**Advance organisers**

Ideas can be discussed with the students to stimulate their thinking (without limiting their imaginative responses). Students could test out some ideas as homework prior to the lesson.

**Assessment-evaluation:**

Does the drawing convey ideas about learning spaces?

Does the drawing show an imaginative response to the theme?

Does the written component help to explain the visual component?

Entries will be assessed by a panel of peers and the university researchers to award book vouchers to the most imaginative entries.

All submissions will be exhibited through a dedicated website and further comment invited

**Other Teaching Aids and Resources:**

Examples of students drawing about or assisting in school design, eg:

Burke, C., & Grosvenor, I. (2003). *The school I'd like: Children and young people's reflections on an education for the 21<sup>st</sup> century*. London: RoutledgeFalmer.

Sack-Min, J. (2008). Teens help architects redesign schools. *American School Board Journal*, January 2008, accessed 21 September 2008, from

<http://web.ebscohost.com.ezp01.library.qut.edu.au/ehost/pdf?vid=5&hid=106&sid=6ffb5675-1536-4ede-983e-b3507273a6ad%40sessionmgr9>

**Higher order thinking skill questions:**

What did you have to think about to create this drawing? What kind of things did you want to include to convey your ideas? Why were the shapes and colours chosen? Do you think this was an interesting idea? Why or why not?

**Related activities:**

SOSE - The history of schooling in Australia; Indigenous education; rural education; local community educational provision and needs.

The activity supports the aims of DETA's Year of Creativity.

**\*Please note:**

This lesson plan is provided as a suggestion only, and is not intended to be prescriptive. Teachers of students participating in this research project may use formal or informal methods of their own choosing.

We ask, though, that all submitted work is limited to A4 size paper.

Thank you for your involvement and cooperation.

<b>Appendix 2: Typology of imaginations</b>
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This typology was an original contribution to the literature on imagination developed through the author's PhD studies (Bland, 2006).

*A typology of imaginations*

<b>Type</b>	<b>sub-type</b>	<b>attributes</b>	<b>theorist</b>
empathic		<ul style="list-style-type: none"> <li>▪ questioning from the point-of-view of marginalised others</li> <li>▪ voices of the marginalised</li> <li>▪ empowering</li> </ul>	Grundy (1996) Greene (1995) Wright-Mills (2001)
	ethical	<ul style="list-style-type: none"> <li>▪ inalienable right of the other to be recognised and heard</li> </ul>	Kearney (1988)
critical	reflective	<ul style="list-style-type: none"> <li>▪ unsettling</li> <li>▪ disruptive</li> <li>▪ challenging</li> </ul>	Fine (1994)
	sociological	<ul style="list-style-type: none"> <li>▪ investigative</li> <li>▪ hermeneutic</li> </ul>	Wright-Mills (2001)
	disciplined	<ul style="list-style-type: none"> <li>▪ restrained</li> <li>▪ rigorous</li> </ul>	Giddens (2001)
	utopian	<ul style="list-style-type: none"> <li>▪ trying new ideas</li> <li>▪ radical</li> </ul>	Giddens (2001) Halpin (1998)
	critically-pragmatic	<ul style="list-style-type: none"> <li>▪ tempered by reflection</li> </ul>	Maxcy (1991)
creative	poetic	<ul style="list-style-type: none"> <li>▪ inventive</li> <li>▪ increased empathy</li> </ul>	Kearney (1988)
	pragmatic	<ul style="list-style-type: none"> <li>▪ problem-solving</li> </ul>	Maxcy (1991)
	grounded	<ul style="list-style-type: none"> <li>▪ theoretical and practical</li> </ul>	Fielding (2001)
fantasy	<ul style="list-style-type: none"> <li>▪ daydreams</li> <li>▪ reverie</li> <li>▪ déjà vu</li> <li>▪ remembrance</li> </ul>	<ul style="list-style-type: none"> <li>▪ unproductive</li> </ul>	Maxcy (1991)

Appendix 3: Examples of children's submissions



