Imaginings and Representations of High School Learning Spaces: Year 6 Student Experiences

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Abstract As they transition from primary to high school, students' imaginings of their future learning spaces are informed and creative. This chapter explores the visual representations of high school learning spaces as imagined by some Year 6 students in their final year of primary school in Queensland, Australia. Their images and interview responses reveal five key spatial attributes concerning high school learning spaces. Connections to nature, open spaces that were sustaining and promoted thinking, spaces that enabled them to be active and make choices were clear preferences evident in student responses. These responses highlight how physical, emotional and social wellbeing factors were integral to their ideal spaces for learning. The chapter also considers the implications for students, educators and designers regarding issues of control, consultation, critique and compromise in thinking about the design and use of learning spaces.

Introduction

Starting high school is one of the big transitions in the life of a learner. For Luca (Fig. 1) the learning door was about to open as he finished his final year of primary school, and his imagined picture was one of vague and hopeful optimism. In his explanation about his image, the red walls and purple ceilings were associated with a belief that high school would be stimulating and adventurous. However, the individual desks in rows pointed to his anticipation that learning would be individualised, formal and indoors. Luca's image was collected as part of a Master of Research project (Andrews, 2016). In this qualitative case study, 22 students aged around 12 years were invited to imagine their future high school and to represent both their expected

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[1]Phrases Provided by Students in Their Annotations or Interview Responses.

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Fig. 1 Luca's water colour
drawing, representing his
imaginings of a high school
learning space. 'The door
opening to a new learning
space and how different it is
from primary school to high
school'. (Luca)

and ideal learning spaces in drawings and words. By sharing their experiences and
opinions in this way, they provided first-hand insights about the learning spaces they
felt suited and hindered their learning experiences.

This chapter presents select findings of students' imagined visual representations
of future high school spaces that provide evidence about students' lived awareness
of the spatial impact on learning and relationships. As the study's findings highlight,
middle years students are imaginative, creative and critical consumers of learning
spaces who have articulate thoughts to share concerning the impact of spaces on
their wellbeing. In particular, their imaginings show a preference for natural, open,
sustaining, active and autonomous spaces that foster their learning and wellbeing. The
findings also illustrate how student wellbeing is socially constructed and integrates
social, emotional, academic and spatial dimensions (Lefebvre, 1991). In sharing
the Year 6 students' imaginings of their future spaces, this chapter aims to inform
and inspire the design of high school learning spaces that positively impact the
wellbeing of students as they transition to high school. The changing school structure
in Queensland, outlined in the next section, provided an ideal context for the case
study.

Policy Context—Year 7 Moving to High School in Queensland

In 2015, Year 7 became the first year of high school for students in Queensland, where
previously it had been the final year of primary school. This reform was due to the
Queensland Government's *Flying Start* policy (Queensland Government, 2011) as a
response to an identified need to better support young adolescents as they transition
to high school. Six principles of Junior Secondary were identified: enhancing stu-
dent wellbeing, establishing a distinct junior secondary identity, emphasising quality

teaching, parent and community involvement, leadership and local decision-making (Queensland Government, 2011). Across the state of Queensland every high school planned and created learning spaces to welcome Year 7 students.

The time of transitioning from Primary to Secondary school has been defined as a period of change that can be 'both challenging and exciting, in which children and families adjust to new roles, identities and expectations, new interactions and new relationships' (Hanewald, 2013, p. 62). New teachers, new friends, new opportunities, a greater range of classes and classrooms, and new freedoms have to be negotiated by students. The period of transition can often be problematic for middle years learners, who can experience emotional concerns related to socialisation, academic expectations and physically negotiating a larger campus. These concerns can lead to declining engagement and academic underachievement (Carrington, 2006; Hanewald, 2013). Adding to the challenge of transition, Year 6 and 7 students are in early adolescence, a period of personal development when issues of identity and independence dominate their experiences (Tyler, 2004). Peers become more important as a reference point than family, and the young person experiences physiological, neurological and psychological changes that impact on their appearance and behaviour (Pendergast & Bahr, 2010). The multiple changes being experienced by young people have implications for the way that adolescents live their lives as students, their social and cognitive development and their engagement with schooling through social spaces. These clusters of concerns are also recognisable in the literature about student wellbeing.

Spatial Wellbeing as an Integrated Concept

Wellbeing is variously defined. An Australian Treasury report (Gorecki & Kelly, 2012, p. 31) defines wellbeing generally as 'a person's substantive freedom to lead a life they have reason to value'. However, there is no accepted way of representing or measuring wellbeing for children in the academic literature (Organisation for Economic Co-operation and Development (OECD), 2009, p. 24). Most often wellbeing for students is defined by a collection of social and cultural components that provide a supportive ecology, although there is a growing trend of wellbeing increasingly 'reduced' to the concept of personal resilience, emotional wellbeing and the absence of mental ill health (Atkinson, Fuller & Painter, 2012, p. 6). The *Australian Child Wellbeing Project* (ACWP) defined wellbeing as 'comprising a broad range of objective circumstances that young people experience, social relationships that they

engage in, and their perceptions of these circumstances and relationships' (Redmond, et al., 2016. p. 1). The report identified that while most middle years students identified that they are 'doing well' groups that were recognised as disadvantaged, who had additional pressures arising from poverty and fewer social networks for support, and who experienced academic difficulties, had greater indicators of reduced wellbeing (Redmond et al., 2016). Schools are places where wellbeing can be fostered, and the perceptions of young people about their experiences are important indicators of how we can enhance their wellbeing.

Where learning environments are associated with wellbeing, it is not usually the physical environments that are being referred to but rather what psycho-social environment can be established through teaching to achieve desired social and academic outcomes. The *Melbourne declaration on educational goals for young Australians* (Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA, 2008) identifies that 'student motivation and engagement in these [middle] years is critical and can be influenced by tailoring approaches to teaching, with learning activities and *learning environments* that specifically consider the needs of middle years students' (p. 12). Adolescent Success, formerly the Middle Years of Schooling Association (MYSA, 2012), also recommend *places* for middle years students that include democratic classrooms, a shared vision, small learning environments, positive and safe environments and a sense of community and care. The World Health Organisation (WHO), (2003, p. 1) identifies interactions that a school's environment can enhance social and emotional wellbeing, and learning when it:

- is warm, friendly and rewards learning;
- promotes cooperation rather than competition;
- facilitates supportive, open communications;
- views the provision of creative opportunities as important;
- prevents physical punishment, bullying, harassment and violence, by encouraging the development of procedures and policies that do not support physical punishment and that promote non-violent interaction on the playground, in class and among staff and students; and
- promotes the rights of boys and girls through equal opportunities and democratic procedures.

To understand the interrelationship of physical spaces and wellbeing as a more integrated concept, Lefebvre's spatial triad was used in this study as a theoretical framework to review the literature and student data.

Lefebvre's Triad of Physical, Mental and Social Space Related to Learning Spaces

The holistic and dynamic experience of spaces has been theorised in Lefebvre's Spatial Triad (1991) as three distinctive, yet interrelated physical, mental and social spaces that we produce, reproduce and inhabit. Lefebvre referred to the physical

aspect of space as *spatial practice* (1991, p. 38) which is the perceived view of material spaces. In a school context, this view would include physical spaces such as classrooms, playgrounds, walkways and toilets. The second aspect involves imagining, as it is the conceived view of space such as architectural plans and maps which Lefebvre refers to as *representations of space* (1991, p. 39). Lefebvre believed that those who conceive the spaces invest the design with their views of the world, and therefore reproduce power relationships. The third aspect of the triad is the lived experience where social relations take place; representational spaces (1991, p. 39). In a school, this may describe where groups of students relax at lunchtime or live by rules about what is socially acceptable in the spaces. The three aspects of the triad offer a balanced model that embraces the social construction of spatiality (Watkins, 2005) and challenges the notion that school spaces are immobile and 'container-like' (Leander, Phillips & Taylor, 2010, p. 331). The interplay between these spatial dimensions shows how physical space impacts on wellbeing.

There is a well-established body of knowledge around the physical design or *spatial practices* in schools from which implications for students' well being can be drawn (Blackmore, Bateman, Loughlin, O'Mara & Aranda, 2011; Cleveland & Fisher, 2014; Horne Martin, 2006). For example, middle years students who are facing rapid physiological change require space to move around without feeling clumsy, impacting physical and psychological wellbeing (Pendergast & Bahr, 2010). For optimal learning, the physical spaces need to minimise distraction, provide students' independence, allow for flexibility and cater for peer mentoring, active learning and collaboration (Blackmore et al., 2011; Woolner, 2010). In a review of the literature focusing on school environments, Woolner (2010) identified noise, air quality, temperature, space, lighting, and maintenance as all impacting the physical, psychological and social experience of students. Horne Martin's (2006) review adds colour, room organisation, function and density as factors impacting student learning and performance.

Learning spaces, shape social relations and practices of instruction and interaction as representational spaces. Interactions between teachers and students, and students with their peers can be more collaborative in flexible and agile spaces (Mulcahy, Cleveland & Aberton, 2015). There is evidence of improvement in student/teacher relationships and interactions, evidence of increased levels of student interpersonal competencies, engagement and teamwork in redesigned learning spaces (Blackmore et al., 2011). The researchers also noted affective outcomes, such as sense of belonging, inclusion, self-esteem and self-confidence. The design of learning spaces has the potential to open up opportunities for meaningful learning or can stultify learning through limiting the flexibility of social interactions. This has implications for student wellbeing and academic outcomes (Walker, Brooks & Baepler, 2011) and is of particular importance to the young adolescent's socio-cultural wellbeing (Nicholson, 2005).

As students are rarely involved in conceiving school designs (McGregor, 2004), this study sought student *representations of space*. A sense of community, ownership and improving wellbeing emerge when students are allowed to participate and their ideas are heard regarding their learning spaces (Horne Martin, 2006, p. 100). Lefebvre

gives examples of designers, architects and social engineers as those who conceive and therefore contain the power of decision-making in the *representations of space* (1991, p. 38). However, even young children have negotiated with architects, and proved themselves as competent, creative and pragmatic, and provided views and ideas that the adult designers had not considered (Clark, 2010). In the research conducted by Johnson (2008) and Comber, Nixon, Ashmore, Loo & Cook (2006) students' conceived views of space informed the physical and social development of new learning spaces. Ghaziani contends that children's voice is 'perhaps the most important and needs to be heard' when considering school design (2008, p. 235). This contention contrasts with Morrow's summation that young people's participation appears to be 'virtually non-existent' (2011, p. 69), despite being both reasonable and insightful. Students are major stakeholders within schools, and their views and perspectives can improve a school (Rudduck & Flutter, 2004), yet students regularly continue to be excluded from the design process of their learning spaces (Cleveland & Fisher, 2014). This study sought to provide an opportunity for one group of middle years learners to voice their perspectives, as it investigated Year 6 perceptions about their primary school spaces and imaginings about their high school learning spaces, to explore what is important to students as they transition to high school.

Research Design

The qualitative case study involved 22 students from one class of Year 6 children in a large Brisbane state school. The students were acknowledged as 'experts in their own lives' (Clark, 2010, p. 188) who would be able to provide a Year 6 perspective of their lived primary school experience and their pre-transition imaginings of high school learning spaces. The research question was: *How do Year 6 students imagine their future high school spaces*? Visual and interview data were gathered in two stages. First, to introduce the concept of learning spaces, the participants photographed their preferred learning space in their primary school and wrote a brief annotation explaining their choice. Second, the students created an image of their imagined high school spaces. Students could use provided collage material, water colour pencils or their iPads to create their visual images. The majority of students opted to use the water colour pencils, the second largest group used the collage material and one student represented his imaginings through an iPad image. Imagination is considered an important way to access critical and creative thinking, and is useful in problem-solving and creating sociological change (Bland, Carrington & Brady, 2009; Egan, 2008). Rich insights and new understandings are provided when students imagine their ideal school or their future learning spaces (Bland, Hughes & Willis, 2013; Burke & Grosvenor, 2003). After completing their image, the students wrote or dictated an annotation, which was important as it provided another opportunity for their perspective to be articulated. Finally, the students responded to semi-structured interview questions based on their imagined representations of high school spaces. Interview questions included:

- Tell me about your picture.
- Is there anything else you want me to notice about your picture?
- If you could change or add anything what would it be?
- What makes this a learning space for you?

The students' visual, spoken and written responses develop an understanding of how Year 6 students imagine their future learning spaces.

Data were analysed through detailed inductive analysis and interpretation. An open coding inductive approach was used to analyse the semi-structured interviews and annotations (Denzin, 2002). Transcripts of the students' responses were colour coded according to their emerging ideas, summarised and collated with cross-referencing to the other Year 6 responses. The dominant themes of the Year 6 students' imaginings revealed prior knowledge of high school spaces plus their hopes, anxieties and expectations about what these spaces might be like and how the spaces might impact their academic and social wellbeing. Significant codes included connections with nature, perceptions of freedom, environmental factors (light, air quality, sound and temperature), the social aspect of space and emotional impact of space (comfort, relaxation, happiness). The students' visual representations were analysed in two ways. Bland's typology of imagination (2009) was used when analysing the students' created images. This deductive process separated the images into four categories of imagination: fantasy, creative, critical and empathic. The images were also interpreted according to the three most visually prominent features of each image to create a matrix of common features. Some of the codes included the provision for physical activity (soccer goal posts, pools, ovals, playground equipment), nature (trees, sun, flowers, mountains), spaciousness, and learning outdoors. The third analytic step was to collate the codes from both visual and verbal data sets into themes, from which five spatial attributes of high school learning spaces were noted to be of particular importance to the Year 6 students. These attributes were then analysed from a theoretical perspective and aligned with Lefebvre's (2009) Spatial Triad.

The full Master of Education thesis, which was conducted with ethical clearance from Queensland University of Technology, is published online (Andrews, 2016). The main findings of spatial attributes of high school learning spaces and their implications are summarised below.

Five Spatial Attributes of High School Learning Spaces

The five spatial attributes and their relationships with the physical, social and mental aspects of Lefebvre's Spatial Triad are shown below (Fig. 2).

The students' visual and verbal responses indicated that they imagined future high school physical spaces that reflected five dominant preferences. They imagined spaces that would allow them to be *actively* engaged in their learning while giving them space to be *autonomous*, that is responsible for their own learning. They imagined *sustaining* spaces with positive environmental factors, such as quietness

Fig. 2 Five types of spaces
imagined by students
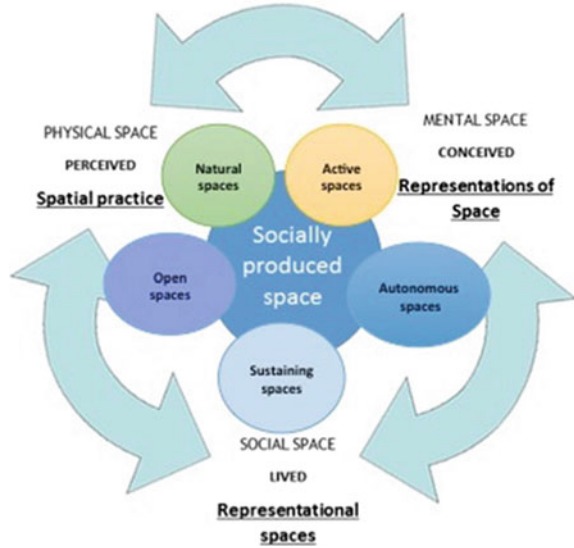
and fresh air that would allow them to focus on their learning, while also providing opportunities to learn with friends. Quite often these spaces were *open spaces*, linked to elements of *nature*, whether being located outdoors, or connected through windows. Selections of students' illustrations of imagined spaces are represented in this chapter to explain these themes. The images often reflected quite a few of the themes.

Natural Spaces—'Near the Nature'[1]

The most strongly supported finding of this research was the importance that Year 6 students placed on learning in natural spaces. All but 3 of the 22 students included some form of natural connection in their representations of high school, through either a specific annotation or visualisation of a natural feature such as the sun, sky, grass and trees. Hope (Fig. 3) imagined sitting in her high school classroom with a full view of a natural setting through the glass wall. Other students imagined learning outside connected with nature, suggesting slightly romanticised views of enjoying cooler temperatures, breezes, shade, quietness and feeling peaceful. The possibilities of sunburn, discomfort, insect bites, wind and rain did not feature in their imaginings. Despite these realities that might dissuade adults and children from wanting to learn outdoors, other studies with young people have shown that direct access to nature is clearly important to students (Bland et al., 2013; Burke & Grosvenor, 2003). It is important that this desire to be with or near nature is taken seriously by school decision makers as Taylor and Kuo (2006) have identified that green or natural spaces

Fig. 3 Hope's image of a classroom with a glass wall to look out over trees. 'This space relaxes me. Combination of colour and nature' (Hope, interview)

are important for children's healthy development, wellbeing and attention capacity. Views of nature and easy contact with nature are important for student learning. When the Year 6 students imagined natural high school spaces they combined cognitive benefits (attention), mood benefits (relaxation) and aesthetic qualities with learning while being connected with nature. While the finding was not new, the emphasis the students placed on the natural environment was significant and unexpected.

Open Spaces—'Not Crammed'

Open spaces were favoured by the majority of students and this theme often overlapped with the preference for connections to nature. The findings reflect previous recommendations to ensure spacious learning spaces that allow students to spread out (Barrett & Zhung, 2009; Clark & Uzzell, 2006). Students gave reasons for these spatial choices, referring to comfort, environmental factors, room to stretch out, views of nature, greater concentration and opportunities to be with friends. The students' choices reflected a conscious decision to move away from the 'container'-like spaces of a typical classroom (McGregor, 2004, p.15) into open and larger spaces. Zed (Fig. 4) imagined a spacious, open outdoor space that provided the benefits of learning in an uncrowded space and making him feel relaxed. Other students created spaces that were uncrowded and this suggests that the desire for low-density spaces was common to the Year 6 participants. Their thinking may have been influenced by the density issues experienced in their primary classroom with 31 students fitted into an average-sized classroom. Ten students specifically mentioned their need for space in their interview responses and they visually depicted open, 'not crammed' or 'less squishy' images for high school spaces. Previous research into density has shown that it is a tangible factor affecting student outcomes within learning spaces (Blackmore et al., 2011) and is associated with negative psychological and cognitive

Fig. 4 Zed's image of an open and spacious high school learning space. 'An outdoor scene. Big, open space, lot of room, lots of trees, not crowded, learning by myself. Not an oval. This space makes me relaxed, grass and trees' (Zed, annotation)

Fig. 5 Joe's image focused on the trees integrated with the buildings. 'You are not crammed inside the classroom, it's so quiet when you're outdoors you can hear birds and that.' (Joe, interview)

experiences (Horne Martin, 2006). The students' preference to learn in open and uncrowded spaces reinforced these previous findings (Fig. 5).

Sustaining Spaces—'Helps Me Think'

Joe's image highlights the importance of providing healthy high school learning spaces that sustain their senses. In particular, quietness and quality of air emerged as significant issues directly linked to learning as many students said they helped them think or focus. Horne Martin (2006, p. 98) cites literature supporting the need for good ventilation for students' health and their ability to concentrate. The Year 6 students seemed to associate 'fresh air' with a number of environmental and cognitive factors: temperature, smell, nature and providing better conditions for concentration. Lethargy and inattention have been linked to warm and stuffy classrooms (Burke & Grosvenor, 2003; Horne Martin, 2006; Warner & Myers, 2009). The large proportion

Fig. 6 Edie's collage. 'I like school. I want my school to be open, so like nature's everywhere. I want it to be exciting and motivating. There is a slide and a bench to sit on to socialise.' (Edie, annotation). 'Make it a healthy and active environment' Edie, interview)

of participants who specifically mentioned fresh air believed that they were more likely to breathe and feel fresh air in outdoor spaces rather than in their classroom. Quietness was another dominant theme. Imagining a quiet space was important for 10 of the 22 students as they considered how they learnt best and what spatial conditions might support their learning in high school.

The varied responses indicate the personal nature of learning and act as a reminder that students' learning preferences should be identified and accommodated by educators. While some students may thrive in a busy, talkative room, others may become frustrated and confused. Flexible and agile spaces that enable collaborative as well as individual learning spaces are emerging as school environment design responses that may meet these preferences for sustaining, quiet spaces (Blackmore et al., 2011) (Fig. 6).

Active Spaces—'Something to Do'

As Edie highlighted in her collage and annotation, it is important to provide playful and active spaces for incoming Year 7 students to a high school context. Active spaces are important to students in their learning spaces (Bland, Hughes & Willis, 2013; Ghaziani, 2008) although the importance of play is mostly associated with early childhood spaces (Blackmore et al., 2011; Clark, 2010; Dudek, 2005). In the students' high school imaginings, gender differences appeared in the expression of playfulness. Boys were more likely to represent sporting facilities and spaces. This reflects previous research in gender and space that reports outdoor spaces are 'still largely monopolised by boys, particularly for sport activities' (Blackmore et al., 2011, p. 23). A number of girls imagined playful settings including playground components, and described their desire for 'fun' spaces providing opportunities to 'do something'. Overall, there was no gender difference in the Year 6 students' desire

Fig. 7 Lee's image. 'It's free. A tree makes me feel free.' (Lee, annotation). 'No matter what, high school you go to it will be all good and will feel fresh'. (Lee, interview)

to learn in active and engaging spaces, but there was some evidence that the girls' imaginings represented more creative ideas concerning activity, for example, a disco, slide and swings (Bland, 2009) while the boys represented more competitive physical activity. This finding suggests a possible focus for further research attention as the desire for activity and engagement of their bodies has implications for middle years' pedagogy.

Autonomous Spaces—'New Experiences, Endless Possibilities, New Environment'

Middle years students grow in their desire for independence and autonomy (Carrington, 2006) and as Lee's image indicates, there is a desire for freedom and fresh new experiences. The students generally imagined spaces away from close teacher supervision while learning in the classroom at high school. This finding aligns with other research showing that informal spaces are associated with more liberty for children (Thomas, 2010) (Fig. 7).

When students were asked who shared the space with them they all mentioned friends. Teachers were only mentioned after a follow-up question regarding whether they imagined a teacher present. Sharing autonomous spaces with peers rather than teachers was a recurring theme in this study. The importance of peers is well documented in middle years literature (Carrington, 2006, Groundswater-Smith, Mitchell & Mockler, 2007; Pendergast & Bahr, 2010) and recognised through research in youth and learning spaces (Hopkins, 2011). Year 6 students placed importance on high school spaces where they work independently, supported by technology, with the teacher on the periphery. The minor role given to teachers in this study seems to invert the normal power structure of a classroom from a teacher-centred focus to student-centred emphasis. The peripheral role of the teacher is not a theme appar-

ent in the learning spaces literature yet it was notable in the students' interview responses. Students seemed ready to take ownership of their wellbeing in their transition to high school, as shown through their imagination of their future selves as autonomous learners. They held an overwhelmingly positive view of transition to high school with only two students identifying some concerns about moving to high school in interviews. There is potential for learning spaces to support this autonomy.

Four Implications: Control, Consultation, Critique and Compromise

Year 6 students imagined their future high school spaces in both realistic and wishful ways that indicated *where* they would prefer to learn as well as *how* they would like to learn. Thus, they generally imagined natural, open, sustaining, active and autonomous spaces. While these five themes were dominant across the responses, students imagined physical, mental and social spaces, the three elements of Lefebvre's triad, in different ways. For example, while some imagined themselves at high school engaging quite actively outdoors, running around, others saw themselves sitting quietly under the shade of a tree reading a book. In these spaces, their images evoked embodied spaces (Cook & Hemming, 2011). For example, they depicted students leaning up against a tree, spreading out their legs and getting comfortable. Learning spaces are socially produced and reproduced by the people who inhabit them, reinforcing the understanding of space as a socially produced concept. The importance of ongoing consultation with students in the social production of space has clear links to student wellbeing ideals of democratic collaboration and feeling safe, engaged and valued. To assist educators, professional designers and for those interested in promoting spatial wellbeing in middle years practices four principles of engaging students as stakeholders in designing spaces for learning are proposed.

1. **Control**

It appears that just as adults like to have some control over our spatial choices, middle years students also desire to have some control over where and how they learn. One student was explicit in her interview explaining her desire for control over her own desk space (Fig. 8), while others wanted control over being able to talk to friends and interact while they were learning. Students indicated in their interview responses that they appreciated having some control, or at least some input, over where they might learn best and with that came a sense of freedom. Lefebvre (1991) recognised that it is through spatial choices that power is produced and that designers or conceivers of space often hold spatial power. The students in this study were able to identify their spatial choices indicating that student involvement in spatial decisions can occur beyond consultation in the original building plans, as input into the subsequent use of space and pedagogical approach is also empowering.

Implications for educators include using a learner-centred pedagogical approach that provides opportunities for greater learner independence and peer collaboration

Fig. 8 Sue's image
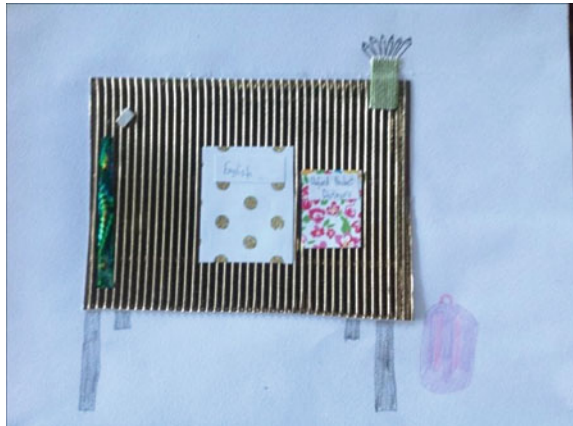
within flexible learning spaces (Willis, 2014). The use of portable technology devices also allows for meaningful learning opportunities with flexibility in terms of where such devices can be used. Teachers could also consider using a variety of open and natural spaces that invite a sense of student autonomy during class time. Classroom layout could also be thoughtfully considered and arranged in negotiation with students.

2. **Consultation**

Lefebvre's (1991) notion of social representational spaces highlights the importance of considering the 'inhabitants and users' (p. 39) of spaces and developing an understanding of how the conceived and perceived spaces are produced. In every iteration of the data collection process, the Year 6 students readily engaged in the process of consultation. Students' views could beneficially inform spatial, pedagogical and curriculum choices to support their transition to high school.

For professional designers, the findings demonstrate the benefit of consulting students as key stakeholders within a school, and of attending to student voices throughout the learning space design process (Rudduck & Flutter, 2004). For example, this case study draws designers' attention to the importance that Year 6 students attach to outdoor, natural areas and the potential contribution to their wellbeing of views of nature and easy access to natural environments. The social implications of creating and enjoying interactions within learning spaces necessarily involves the provision of spaces that encourage communicating and learning between students and teachers (Arndt, 2012). Students in this study articulated their concern for quieter spaces to help them think clearly, whilst also wanting opportunities to collaborate and learn with their peers. These desires warrant pedagogical and acoustic design attention from education decision makers as students negotiate the social spaces of high school. Students can be creative, pragmatic and effective problem solvers regarding their schooling spaces. Taking the opportunity to negotiate with all school

Fig. 9 Ella's image. 'I picked the city because learning at night is cooler and a calmer environment. Learning through the day is hot. Night—having colour and light is a good way to learn—in nature and open space… Amazing if a school could let students learn outside because it is more engaging and you're more likely to pick up things.' (Ella, annotation)
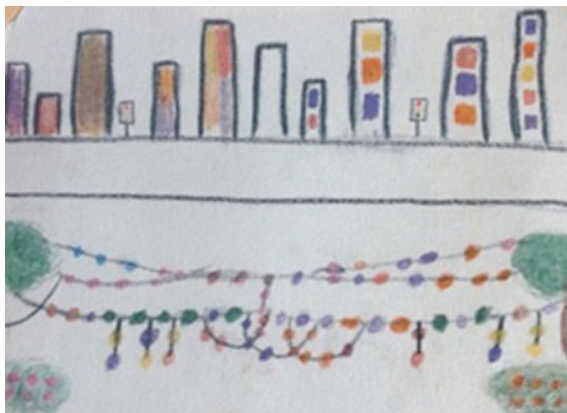
stakeholders about the natural and built spaces of schools would enable designers to achieve best design practice.

3. **Critique**

The study shows that Year 6 students are able to critique their current learning spaces in constructive and creative ways. Their imaginings of high school spaces often reflected a critique of 'stuffy' classrooms that made them drowsy and noise levels that impacted on their ability to concentrate. Critique was also evident in Ella's imagined learning space (Fig. 9), being at the city in the cool of the night—she wondered why school had to be during the heat of the day. Practical implications can be drawn from the poetic creativity of her image such as administrative changes in school times to suit adolescent circadian rhythms as well as cooler temperatures on summer nights (Wolfson & Carskadon, 1998). Student imagination is not bound by logistics, yet produces ideas worthy of serious adult attention and discussion.

Some of the more fantastic collage images of playgrounds and interactive spaces suggested a desire to be fully engaged in learning spaces through emotional, social, cognitive and physical attachments. Munns (2007) describes engagement as taking students into their learning and building attachments. Year 6 students mentioned fun, beauty, activity and inspiration as desired aspects of their future spaces. The students' critique suggests that educators, school administrators and designers could support student transition to high school by providing playful spaces. This design approach would contribute to the advantages of getting young adolescents fit, curious and moving with play equipment designed for them (Sturm, Tieben, Deen, Bekker & Schouten, 2011).

4. **Compromise**

Not all of the student ideas can be realised. In the process of negotiating some control for the students over their learning spaces, through consultation and critique, students and teachers need to work out compromises between what is wanted and what is possible. Students are creative, hopeful and passionate, but they are not

unreasonable (Burke & Grosvenor, 2015). Valuing and hearing their views, even when their ideas do not result in change is an important process and one that will be appreciated by young adolescents and beneficial to the adult decision makers in their lives (Rudduck & Flutter, 2004).

Year 6 students may have imagined their future high school learning spaces in specific ways but there was no guarantee, or indeed likelihood that they would experience the freedom or connectedness they desired. The Year 6 students conceived spaces that revealed combinations of realistic and wishful elements that used all types of imagination from critical, creative and fantasy (Bland, 2009) and interacted with all of the spatial relations within the spatial triad (Lefebvre, 1991). Their conceived spaces reflect Lefebvre's recognition that purely material or idealistic spaces need to acknowledge the complexities of lived experiences, which in this case was the way that children anticipated they could symbolise and use spaces. Soja (1996, p. 6) refers to this as 'real-and-imagined' space. While students quite often represented high schools as containers with static spatial structures like rooms, desks, windows and even slides, in their images there was always engagement with the living energy of nature through trees, wind and snow, and with others through fun, diversity and collaboration, or a desire for reflection and focus. It is through the relationships and the interactions that are both social and symbolic that spaces continue to be lived and produced. Many of the students were imagining spaces that would lead to positive emotions and energy, and these symbolic and embodied connections can be realised through encouraging more learner-centred pedagogies, active spaces and through negotiated compromise.

Conclusion

This study confirms key findings which are similar to those of previous research. However, notable differences emerged regarding the extent of student focus on nature and their desire to work in open and informal spaces with fresh air. The Year 6 students' prioritising of natural, outdoor spaces enhanced by environmental factors such as fresh air has added to an understanding of the importance of the natural world, and non-built spaces within schools for students. Year 6 students also imagined active and engaging spaces that would provide social opportunities to be with peers and to learn in more autonomous ways and spaces. Students spoke confidently of their preferences for learning. What students understood 'learning' to mean within their depiction of learning spaces is a potential focus for future similar research. While the student responses in this qualitative case study cannot be considered representative of all students, they provide a valuable understanding of the ways that Year 6 students imagine their future high school spaces. These insights have the potential to inform the design of spaces that better support student transition to high school. The research design provides a foundation for further much-needed research that will enhance student middle years students' wellbeing at a critical juncture of their schooling.

Summary of Implications for Designing Spaces for Wellbeing

- Design spaces that connect with nature, either through windows or informal outdoor learning spaces.
- Provide open spaces that allow for formal, informal and autonomous learning experiences and relationship building.
- Consider the environmental factors of air quality, noise and density in the design process.
- Encourage participatory involvement to explore what spaces encourage a sense of wellbeing in students.
- Consider ways in which students can have opportunities for consultation, critique and mechanisms for reaching compromises that give students a measure of greater control in spatial decisions.

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