CLOSING THE GENERATION GAP: USING CO-DESIGN WITH CHILDREN TO ENCOURAGE SUSTAINABLE PRACTICE IN THE BUILT ENVIRONMENT

Susan J. WAKE

Unitec Institute of Technology, Private Bag 92025, Auckland 1142, New Zealand

Summary

This paper explores the potential for children to learn about sustainability and feel empowered by involvement in the design and construction of the built environment they inhabit, especially schools. The paper concludes that the educational and social value of involving children in a sustainability-focused design process far outweighs the perceived cost in terms of increased time and therefore budget. If current practitioners are to pass on a legacy of building sustainably they need to begin sharing their knowledge now with tomorrow's generation. It is also suggested that method details and types of participation are less important than 'giving it a go', as long as it is clear to the children what the extent of their involvement is. In reciprocation for designers, during the process their own practice may be broadened and enriched.

Keywords: children, co-design, participation, sustainable learning

1   Introduction

Parnell et al (2009) define architectural co-design with children as working directly and collaboratively with designers rather than indirectly by providing information to be considered by designers or working on sub-projects (e.g. landscape). While, within such a new area as this, a definition is useful I believe its specificity may limit co-design opportunities by prescribing children's involvement and scaring practitioners off from wanting to be part of such projects. All too frequently opportunities for children to be involved in design decision-making about their environments are dismissed due to excuses such as budget and bother. It is seen as too hard to do. This paper will consider how this is beginning to change and, through literature and case study examples the author has been involved in, it will argue that co-design with children is not just a worthy ideal, it is an essential goal if we are to influence children positively about creating environmentally sustainable places and spaces. It also offers benefits to practitioners and these will be outlined.

In the Eco-classroom project case study, children worked with adults to co-design and co-construct an environmentally friendly classroom at their school. This fostered inter-generational collaboration with significant adults within the project who facilitated and provided specialist technical skills that scaffolded student learning about sustainable building principles. At the same time democracy was maintained so children felt ownership in the project. In the second case study children contributed design ideas via models they built for exhibits within a hypothetical educational park about climate change.

2   A brief history of children's participation in architectural and urban design

Francis and Lorenzo (2002) assert that participation of children within design projects has gone through a number of phases in which children have been variously ignored or lauded as decision-makers. Hart (1997) famously developed an earlier ladder model into a 'ladder of children's participation' with the bottom three rungs delineated as 'non-participation' (e.g. tokenism) and the top four representing different ways children could participate in projects. However, despite his insistence that the levels should not be seen as sequential, with the top rung being the ultimate, the hierarchical structure suggested this. Driskell's (2002) graph has the advantage of being non-linear and plots children's change-affect powers alongside community collaboration to suggest the highest level as "shared decision-making between children and adults" (p.6). This concurs with Mannion's (2007) claim that participation had gone too far in presuming the capability of children to make specialist decisions. In the process this often caused the essential specialist input of adults in areas such as design and construction to be ignored.

Examples of design participation with children in academic literature are still relatively uncommon although there is a commonality within those that have been reported, that they were driven by passionate and socially minded professionals (e.g. Blundell Jones 2005). Providing an authentic co-design and build experience for children is challenging with the budget and timeframe constraints of most real projects, but despite this Malinin and Parnell (2012) report they are increasing. Within the UK, government-led programmes such as Building Schools for the Future (BSF, which ran from 2005 until being cancelled in 2010) has advanced acceptance of its potential both for enhancing student learning and positively influencing the design of schools (Burke 2007). According to Wheeler (2009) this is due to the stated intention of involving students (and staff) in school design decisions, with a sustainability focus.

Considering the large amount of time children spend at school, it seems appropriate and expedient to focus attention on developing methods and guidelines for facilitating this type of experience. During the heyday of BSF a number of teething issues were identified. One was the speed of the roll-out, coupled with lack of understanding and experience both by practitioners and schools about how to use the opportunity to best effect for all parties. Practitioners such as architects, interior designers and project managers felt unprepared for how to manage the process to ensure productive outcomes for all participants, with the result that participation of students often became token (den Besten et al. 2008). As a result Parnell et al (2008) recommended practitioners acquire skills and specialisation in this area in order to tender effectively for such co-design projects. While the impetus for this may have diminished with the cancellation of BSF, it is proposed this is exactly the time, especially with the current recession in the building industry, to gain these skills. In support of this, I predict that as inclusion of education for sustainability (EfS) becomes more mainstream within school curriculums, alongside requirements to build more sustainably, the fusion of co-design and EfS will become increasingly important as a way of empowering students by giving them greater autonomy over their learning, In the process they will be helping to create their learning environments! In the next section, pedagogical evidence will be presented supporting this way of learning and some case study results will be presented.

3   Action Competence and Case study examples

In EfS pedagogy it is accepted that action-taking projects that are *for* the environment have greater potential to permanently change attitudes and therefore behaviour towards the environment, through learning transformations (Fien and Greenall Gough 1996). Jensen and Schnack's (1997) proposal of 'action competence' as an on-going, action-taking, democratic and political approach to environmental learning within schools therefore fits well with urban design or architectural co-design projects that have an environmental sustainability focus. One such project was carried out between 2006 and 2009 at a New Zealand primary school. Here students aged 9–11 years worked with school staff and community members skilled in architecture, environmental engineering and crafts such as mud-brick making to research, design and help construct an environmentally sustainable classroom at their school. A qualitative research method of narrative inquiry, as described by Clandinin (2007), was used to collect participants' stories about their experiences within the project and the learning that occurred. This included focus groups with students and interviews with key adults. A full description of the method is recorded in Wake and Eames (2013).

In the research students gave clear evidence that participation in the project had changed their behaviour, saying for example:

> I learnt lots of skills from this like … green star ratings, but it also has … made an effect on home, like switching off heaters. (Milly, Focus Group 1)

They also felt strong ownership of the project, saying for example:

> … the architect when he did the plans he would always show us before he made any changes or if we wanted to make changes so we were always making the decisions. (Vincent, Focus Group 2)

and

> The good thing is that now we've been part of it, we get to [help] build it next year. (Jessica, Focus Group 2)

It was important to have clarity over roles; with the teacher who facilitated the project said:

> Some things students realise they have to leave up to the experts to make the final decisions. (Teacher interview)

From a professional perspective the project architect fitted the previously discussed trend towards expressing social and environmental motivations for being involved in the project, saying:

> I absolutely love it … the enthusiasm and liveliness of the kids is just wonderful. The disadvantage … is that it is not an economic proposition … We are doing it because … educating people … and the green environment is really important … (Architect interview)

However, he also acknowledged that his experience within the project could help with getting other contracts, saying:

> … when we are pitching for projects that have an environmental emphasis, then I think this is actually admired by the people we are pitching to. …I would like to think our clients were aware of that when they selected us. (Architect interview).

The Board of Trustees (BoT) member for the school who was interviewed went further to identify:

> … the architect, he loves this so he's doing a lot of things in his own time. Because actually he is learning how to create design and architecture for kids … and he is also learning how to interface himself when working with kids. (BoT interview)

This gives evidence of the reciprocal nature of the benefits of projects like this for students and professionals.

In the second case study children were invited to participate in design workshops to create models for a landscape architecture student's final year research project. The workshops were held at the children's primary school using a charrette method as described by Rottle and Johnson (2007). A full description of the method is recorded in Wake and Cha (2013). The purpose of the project was to involve children in a limited co-design process to elicit their ideas, for incorporation into the student's final design for a hypothetical park about educating communities about climate change. It was hoped that participation would also encourage their learning about climate change, but this was not measured in a formal way. Worthy of note is that although the children were influenced in their design ideas by pictures and information they were given as an introduction to the project, they responded enthusiastically to the project and clearly had a lot of fun (see Figure 1).

The landscape architecture student returned two months later to show her design, so children could see how their ideas had been incorporated. It had been clearly said to them at the outset that the final design decisions lay with the student and they accepted this, while also giving useful feedback on her design. A major constraint was lack of time and resources to enable greater involvement by children, a stronger feedback loop and to be able to conduct focus groups to ask children about the process and their learning. However, despite the limitations of this research, it had findings that concurred with literature in this area. For example the aspect of fun is considered important to development of pro-environmental behaviour, within significant life experiences research (Chawla and Cushing 2007). It also presents further evidence of the importance of being clear within co-design projects about the scope of participants' decision-making power.

Fig. 1 *Children proudly showing off their model in the project.*

4 Conclusion

This paper makes a positive case for co-design projects with children as a way of encouraging learning and providing other reciprocal benefits between people of different generations who share the common goal of valuing sustainable building methods. It is proposed that if building professionals became more amenable to the possibilities of co-design and more skilled at its execution, the gains to everyone involved could be significant. Executed within the school environment, this process can facilitate learning as well as enabling schools to become richer in tangible and intangible ways through creating more sustainable environments that encourage student and community input. While it is complex, making a small start in this direction is preferable to being put off by fears about lack of skills or escalating costs. It is better to clearly establish children's degree of involvement than to hold back due to concern about not providing ultimate autonomy to children since this isn't appropriate within projects requiring specialist skills like design and construction, if the building is to be certified and habitable. In both the case study examples children brought rich ideas to the design table and took away valuable learning about the process and importance of living more sustainably within the built environment, which should be our goal for next generations.

References

[1] BLUNDELL JONES, P. Ozcul postscript: The Gelsenkirchen school as built. *In:* BLUNDELL JONES, P., PETRESCU, D. and TILL, J. eds. *Architecture and Participation.* London: Spon Press, 2005,173–180.

[2] BURKE, C. The view of the child: Releasing "visual voices" in the design of learning environments. *Discourse: studies in the cultural politics of education,* 2007, 28 (3).

[3] CHAWLA, L., CUSHING, D. F. Education for strategic environmental behaviour. *Environmental Education Research*, 2007, 13 (4).

[4] CLANDININ, D. J., ed. *Handbook of narrative inquiry: Mapping a methodology.* Thousand Oaks, CA: Sage, 2007.

[5] DEN BESTEN, O., HORTON, J., KRAFTL, P. Pupil involvement in school (re)design: Participation in policy and practice. *CoDesign*, 2008, 4 (4).

[6] DRISKELL, D. *Creating better cities with children and youth: A manual for participation*. London: UNESCO, 2002.

[7] FIEN, J., GREENALL GOUGH, A. Environmental education. *In:* GILBERT, R. ed. *Studying society and environment: A handbook for teachers.* Melbourne: Macmillan, 1996, 200–216.

[8] FRANCIS, M., LORENZO, R. Seven realms of children's participation. *Journal of Environmental Psychology,* 2002, 22, 157–169.

[9] HART, R. *Children's participation: The theory and practice of involving young citizens in community development and environmental care*. London: Earthscan, 1997.

[10] JENSEN, B. B., SCHNACK, K. The action competence approach in environmental education. *Environmental Education Research*, 1997, 3 (2).

[11] MALININ, L. H., PARNELL, R. Reconceptualizing school design: Learning environments for children and youth. *Children, Youth and Environments*, 2012, 22 (1).

[12] MANNION, G. Going spatial, going relational: Why 'listening to children' and children's participation needs reframing. *Discourse: studies in the cultural politics of education,* 2007, 28(3), 405–420.

[13] PARNELL, R., CAVE, V., TORRINGTON, J. School design: Opportunities through collaboration. *CoDesign,* 2008, 4(4), 211–224.

[14] PARNELL, R*., et al. Designing new schools: Putting people at the heart of the process. Summary of findings* [online]. Unpublished report for the final research workshop of EPSRC project EP/D064651/1, 2009. [cit. 2012-09-25] http://rosieparnell.staff.shef.ac.uk/DSIU/background/summary of findings for workshop.pdf.

[15] ROTTLE, N. D., JOHNSON, J. M. Youth design participation to support Ecological Literacy: Reflections on charrettes for an outdoor learning laboratory. *Children, Youth and Environments*, 2007,17 (2) 484–502.

[16] WAKE, S. J., EAMES, C. Developing an "ecology of learning" within a school sustainability co-design project with children in New Zealand, *Local Environment,* 2013*,* 18(3), 305–322.

[17] WAKE, S. J., CHA, L. Reflections on a student research-led design project involving children, climate change and landscape architecture, in *Building on Knowledge: Theory and Practice. 46th Annual Conference of the Australian and New Zealand Architectural Science Association (ANZAScA).* Griffith University, QLD, Australia, 14–16 Nov, 2012.

[18] WHEELER, A. Theatre practices, performativity and young people's ethical architectures. *Second Ethics & the Built Environment Conference.* University of Nottingham, UK, 9–11 Sept, 2009 (paper supplied by author).