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Links between school buildings and the wellbeing of students and education professionals. What's happening in the Australian context?

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Abstract

Support for the health and wellbeing of school students[1] and education professionals[2] is increasingly recognised as critically important to achieving education goals. Indeed, the World Health Organization's Health Promoting Schools program strives to increase the capacity of schools to promote healthy settings for living, learning, and working (WHO, 2023).

Built environments have an important role to play in this context. School buildings can enable or constrain the provision of healthy environments for teaching and learning through the indoor environmental qualities (IEQ) they offer users (i.e., access to natural/artificial light, good air quality, thermal comfort, and conducive acoustic conditions) and the way their designs mediate the delivery of health and wellbeing programs and services – including to students, teachers, and other members of local communities.

This research paper highlights some of the current discourses and research activities in Australia that are addressing the role of school buildings in fostering the education, health, and wellbeing of children, teenagers, teachers, support staff, families/carers, and other members of local communities. School facilities with a wellbeing focus are increasingly being developed in parts of Australia, particularly in low socio-economic areas where the social networks and trusted relationships that tend to exist around schools can be leveraged to support child and community development.

[1] Young people including children and teenagers.
[2] Teachers and support staff.

An introduction to the relationships between school buildings and students'/education professionals' wellbeing

Health is defined by the World Health Organization (WHO, 2021, p.3) as "a state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity". Subsequently, the WHO defines wellbeing as follows:

> Well-being is a positive state experienced by individuals and societies. Similar to health, it is a resource for daily life and is determined by social, economic and environmental conditions. (WHO, 2021, p. 10)

Importantly, the WHO suggests that wellbeing is not solely linked to individuals, but relates to a societies' collective capacity to contribute to the world and respond to challenges:

> Well-being encompasses quality of life, as well as the ability of people and societies to contribute to the world in accordance with a sense of meaning and purpose. Focusing on wellbeing supports the tracking of the equitable distribution of resources, overall thriving, and sustainability. A society's well-being can be observed by the extent to which they are resilient, build capacity for action, and are prepared to transcend challenges. (WHO, 2021, p. 10)

In this context, research into the relationships between school buildings and the health and wellbeing of school students and education professionals has historically focussed predominantly on the fundamental conditions associated with indoor environment quality (IEQ): natural/artificial light, air quality, thermal comfort, acoustic conditions (Vijapur et al., 2021). Access to comfortable environmental conditions is of course essential for effective teaching and learning. Spaces that are too light, too dark, oxygen depleted, polluted, too hot, too cold, or too noisy can be detrimental to students and teachers, adding unwanted stressors on their health and limiting their ability to work together. Ensuring that the environmental conditions in schools are well-suited to human occupation, including across the seasons, is a fundamentally important role of school buildings. Recent attention has also focussed on ensuring that air-borne diseases, especially Covid-19, are not readily transmitted, requiring increased ventilation and air filtration in schools to reduce the likelihood of disease transmission (Ding, 2023).

During the past decade, research into 'innovative learning environments' has also drawn interest from academics and school system administrators seeking to understand how school buildings might better support a) teaching and learning and b) extended health and wellbeing programs and services. Increasingly, the functionality of schools is expected to go beyond the provision of standard classrooms and specialist spaces for subjects such as art, science, and technology, to include spaces for sports and recreation, performances, large communal gatherings, and welcoming settings for physical and mental health care. Access to these spaces is being extended to families/carers and other members of local communities – especially outside of school hours – in addition to students and educational professionals (Cleveland, 2023).

Societal changes associated with the advent of digital technologies and internet connectivity has also expanded the requirements and opportunities for schools to be designed in more 'innovative' ways – often highlighting the limitations of historic school designs. Celebrated Dutch architect and professor emeritus at Delft University of Technology, Herman Hertzberger (2008) provided the following critique of this situation, suggesting that the relationships between school buildings and teachers/students should be more creatively and extensively explored:

> Architecture has unfailingly approached the designing of schools from a less than critical position. All the while, it seems, architects meekly followed their briefs and were mainly concerned with formal aspects of the exterior without busying themselves with spatial opportunities that might lead to better education … . (p. 11)

Learning environment affordances, behaviour settings, and contemporary school design

Drawing on theories from ecological/environmental psychology developed during the 1960-70s, progress has been made over the past fifteen years with respect to developing deeper insights into how schools can be designed to better align with contemporary educational practices and extended use by local communities. The 'relational thinking' associated with affordance theory (Gibson, 1979; Young & Cleveland, 2022) and behaviour settings theory (Barker, 1968; Heft, 2001) has been instrumental in recognising the opportunities and constrains of school designs and promoting more creative architectural approaches, often focused on supporting more engaging and valuable experiences for users – especially for students.

Developing critical insights into what types of activities should be possible in schools has progressed through exploring the varied perspectives of stakeholders, especially regarding what types of relationships should exist between teaching and learning activities and building designs.

James Gibson's affordance theory (1979), basically defined as the action possibilities that may result from the relationships between the user and the environment, becomes a useful theoretical tool through which to explore what types of action possibilities/activities school buildings should support. Young et al. (2020, p. 695) defined 'learning environment affordances' as "the qualities of the environment (space, objects and people) which enable perceived teaching and learning activities and behaviours". In this context, if we think about students' and teachers' wellbeing, what types of school facilities might be created, and what action possibilities for teaching and learning should be afforded?

Furthermore, what types of behaviour settings should exist in schools? What relationships should exist between the 'standing patterns of behaviour' of students and teachers and the environments in which they occur? Are existing 'stable' patterns of behaviour in schools the types of teaching and learning behaviours that should persist? How might the milieu around students and teachers best co-exist with the use of school facilities by other community members – especially in support of child and community development and overall population health and wellbeing?

Awareness of the need to support the wellbeing of students and education professionals – and other community members

Support for the wellbeing of school students and education professionals is increasingly recognised as critically important to achieving education goals. Notably, the WHO's (2023) Health Promoting Schools program strives to increase the capacity of schools to promote healthy settings for living, learning, and working. Amongst other objectives, the WHO suggests that health promoting schools:

> Strive to provide a healthy environment, school health education, and school health services along with school/community projects and outreach, health promotion programmes for staff, nutrition and food safety programmes, opportunities for physical education and recreation, and programmes for counselling, social support and mental health promotion. (WHO, 2023, website)

Schools as community hubs/extended services schools

The WHO objectives outlined above are well-recognised, including in parts of Canada, The Netherlands, United States of America, Denmark, Scotland, and Australia. While not universally scaled

in these countries, awareness of the need to support the wellbeing of students, education professionals, and members of the wider community has led to schools being developed to offer significantly more than formal education. An emerging shift towards thinking of schools as 'multi-service delivery platforms', as opposed to strictly academic institutions, aligns with the WHO's Health Promoting Schools objectives. This shift was noted by Lawson and van Veen (2016a, p. 23), who suggest that:

> A significant institutional change involving the nearly-universal model for "school" is underway world-wide, albeit differentially and with predictable stops, re-starts, and adjustments in diverse regional, national, provincial, state, and local contexts.

In their book, *Developing Community Schools, Community Learning Centers, Extended-service Schools and Multi-service Schools,* Lawson and van Veen (2016b) identify a number of reasons for re-thinking and re-designing schools. They suggest that governmental objectives behind re-imagining what schools should support include:

- New workforce development in advanced economies, with a focus on science and technology capacity building;
- Citizenship development in democratic societies;
- Social integration of diverse children and their families in response to massive migrations of people around the world; and
- The need for improved educational equity, towards supporting socially isolated and underprivileged peoples.

With vulnerable new immigrants increasingly living in high concentrations in specific locations, Lawson and van Veen (2016b, p. 4) advise that new school designs need to support the "full array of services, social supports, and resources children and families need to enjoy well-being". Furthermore, they suggest that:

> Above all, this new design [of schools] departs from an inherited model of the stand-alone school. Although academic learning and achievement remain important outcomes, in this new design several related outcomes are equally important companions. These outcomes include healthy child development and positive youth development, family support, community development and revitalization, and preparation for democratic citizenship. (Lawson & van Veen, 2016b, p. 7)

Inclusive education and wellbeing for all

As a sub-set of the aspirations for wellbeing linked with schools, support for inclusive education is growing internationally, including the desire to welcome more students with disability to 'mainstream' schools. Inclusivity, as an expression of human rights and moral justice, has received increased attention over the past thirty years. Education for all (UNESCO, 1994; 2005) has demanded an appreciation of diversity and highlighted calls for education to be free of discrimination and offer equal opportunity to all students.

Despite advances, however, a gap in the literature remains about the environmental requirements needed to support the participation of students with disability/special educational needs in schools (Imms et al., 2020). Beyond the insights offered by the Seven Principles of Universal Design (Story, 1998), sustained research into school design for inclusion is lacking (Martin, 2016) and limited progress

in the field remains acutely felt by students facing barriers to their participation (Booth & Ainscow, 2002).

A small body of research into the environmental conditions supportive of students with autism is an exception—along with studies into acoustics and hearing in learning spaces (see for example Klatte et al., 2010). While research into the relationships between school facilities and students with autism has gained momentum in recent years (see for example McAllister & Maguire, 2012a; McAllister & MaGuire, 2012b; Mostafa, 2014; Mostafa, 2015; Tufvesson & Tufvesson, 2009), more research is needed. A recently published book, *Design for Inclusivity: Proceedings of the UIA World Congress of Architects Copenhagen 2023* (Mostafa et al., 2023), offers both theoretical and practical directions within the field framed by the United Nation's Sustainable Development Goals, with a specific focus on the role of architecture in designing for inclusivity.

Links between school buildings and wellbeing in the Australian context

Since the mid-2010's, state governments across Australia have demonstrated interest in supporting improved relations between schools and communities, with a view to improving individual, community, and societal wellbeing (see for example Government of South Australia, 2017; 2019). While initial policy development focussed on social change, including "personal safety, economic security, belonging and connection with people and places, and access to opportunities, support and resources" (Government of South Australia, 2017, p. 6), the delivery of policy through infrastructural developments rapidly became evident. For example, the Queensland Government established the Community Hubs and Partnerships (CHaPs) program in 2014 to "work with all levels of government, non-government organisations and the private sector to plan accessible and cost-effective social infrastructure to connect communities and support coordinated delivery of community services" (Lauer, et al., 2023)—including in association with schools, where their central role in communities made them obvious places to invest, including in pilot initiatives aimed at exploring how schools might be developed to help address child and community wellbeing. Such activity coincided with increased interest from state education departments in the construction of ecologically sustainable buildings that were not only more energy efficient but provided occupants with improved comfort (i.e., IEQ).

Developing schools as places of wellbeing for students, education professionals, and communities

With emerging aspirations in several Australian states to develop schools as community hubs/multi-service delivery platforms, our Learning Environments Applied Research Network (LEaRN) lab at the University of Melbourne undertook a multi-year study between 2019-2022 to investigate how such schools could be successfully developed. Funded by the Australian Research Council (ARC) Linkage scheme and partners, the *Building Connections: Schools as Community Hubs* project[3] investigated the opportunities and challenges associated with developing, implementing, and sustaining schools as community hubs – "a broadly defined concept encompassing networks of relations between school administrators, students, teachers, parents, carers, and community members, with the buildings,

[3] Building Connections - Home (unimelb.edu.au)

landscapes, services and digital infrastructures of schools and surrounding areas" (Cleveland et al., 2023, p. 4). The project focused on schools offering early learning (nursery), primary, and secondary school education.

The findings focussed on four overarching themes: partnering, planning, designing, and enabling. The importance of schools partnering with other agencies and organisations to achieve success was abundantly clear, highlighting the need for place-based collaborations that are rooted in local communities and contexts. The challenges associated with integrating educational planning with social and urban planning were also clear, particularly in instances where limited coordination between government agencies may challenge their ability to work together to address health and wellbeing issues affecting children and families/carers. Designing schools through participatory processes involving broad stakeholder groups demonstrated how the processes that create new schools may exert significant agency and influence on the designs of schools as community hubs—helping to align the designs of school buildings with the action possibilities desired by school and wider community groups. A variety of enabling factors also arise, prominent amongst these being the importance of leadership, including arrangements to distribute the responsibility for 'more than a school' operations, plus the need for ongoing evaluation and sharing of data about what's working and what's not. Evidence of the successes or otherwise of schools seeking to support the health and wellbeing of children, teenagers, teachers, support staff, families/carers, and other members of local communities will clearly be needed to inform the further development and scaling of schools as community hubs in Australia and internationally (Cleveland et al., 2023).

The How to Hub Australia Framework

A key output of the *Building Connections: Schools as Community Hubs* project was the *How to Hub Australia* framework (Cleveland et al., 2022; Cleveland, 2023)[4]. This offers evidence-based advice on school infrastructure provision and management linked to the activities, programs and services that may be offered from school sites in addition to schooling. The framework is intended to help policymakers, school leaders, and designers overcome the uncertainties and perceived obstacles that tend to limit the provision and use of school facilities for broader community benefit (see Figure 1).

[4] See also How to Hub Australia: Evidence and advice for policy makers, school leaders and designers involved in schools as community hubs (figshare.com)

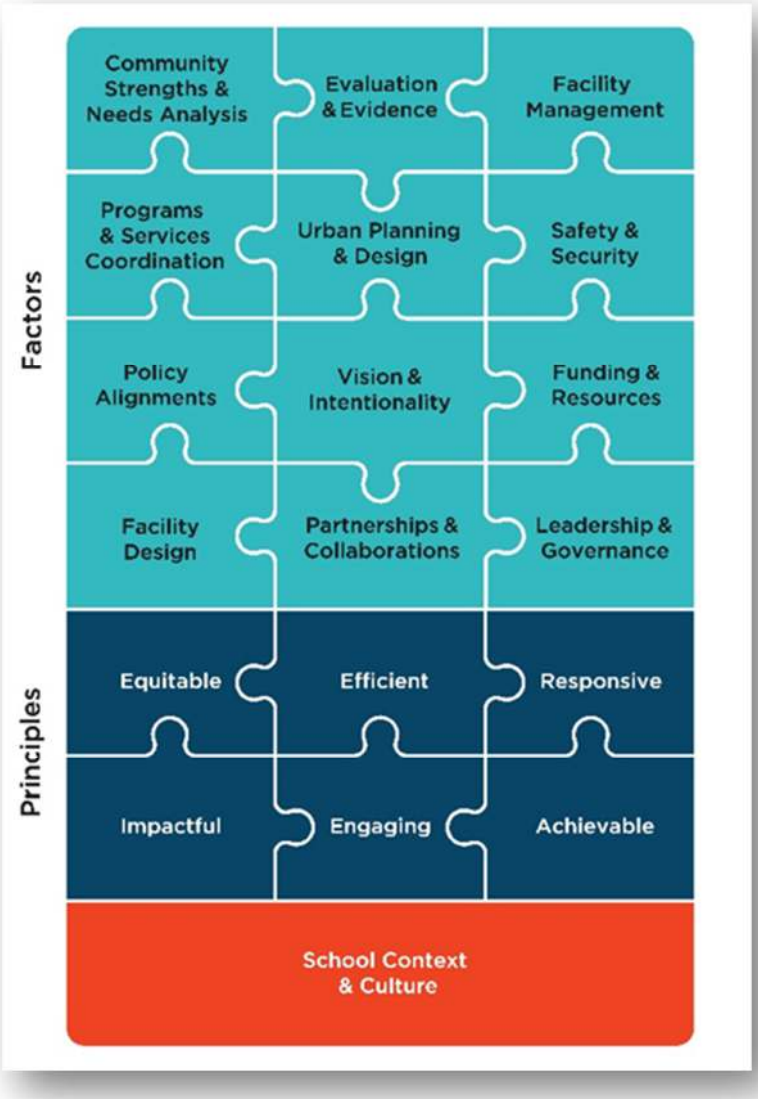


Figure 1. The 'How to Hub Australia' framework (Cleveland et al., 2022)

The following excerpt, taken from Cleveland (2023)[5], summarises the key issues that need to be addressed to successfully develop, implement, and sustain community-facing, extended service, or multi-service schools:

School Context and Culture

It is important to note that the success of each school as community hub is contingent on responding appropriately to its unique context and culture. The adoption of a 'more than a school' mindset should be paired with a clear and well-informed perspective on why enhanced school-community relations should be established. Every school should respond to its unique socioeconomic, geographic, and cultural situation differently.

[5] Cleveland, B. (2023). A Framework for Building Schools as Community Hubs: If It Were Simpler Would It Happen Everywhere?. In B. Cleveland, S. Backhouse, P. Chandler, I. McShane, J. M. Clinton, & C. Newton (Eds.), *Schools as Community Hubs*. Springer. https://doi.org/10.1007/978-981-19-9972-7_2

Principles

Six overarching principles should shape school as community hub initiatives:

Engaging: *Maximising stakeholder engagement is critical to fostering initial interest, connection, and long-term contributions to hub operations. Developing and sustaining partnerships that promote a sense of ownership and belonging is foundational to ongoing success. Stakeholders and partners may typically include both funders and users: education authorities, federal and/or state government departments, local municipalities, philanthropic organisations, service providers, sporting clubs and associations, school principals, school council members, parents, students, teachers, and community members.*

Achievable: *Maximising the feasibility of school as community hub initiatives requires due diligence, with a view to the future. Hub initiatives should be tangible, attainable, and based on a clear vision.*

Equitable: *Maximising access to hub activities, programs and services means providing equitable and inclusive opportunities for education, health, and wellbeing to all who wish to participate.*

Efficient: *Maximising the efficient use of hub resources means ensuring outcomes are assessed relative to the emotional investment, funding, labour, and spatial assets contributed. If intended outcomes change, so should assessment of efficiency.*

Responsive: *Maximising alignments between hub offerings and community strengths and needs is essential when initiating new hub projects. Adapting hub models to new locations requires close attention to local needs. Responding to changing contexts, such as demographic changes over time, should keep hub activities, programs, and services relevant.*

Impactful: *Maximising the positive and lasting impacts of schools as community hubs depends on regular patronage. This requires attention to the quality and long-term sustainability of activities, programs, services, and facilities. It is critical for hub offerings to reach intended populations and for contact to be maintained over time.*

Factors

Twelve factors are offered to help guide those undertaking school as community hub projects.

Community Strengths and Needs Analysis: *Every school as community hub is different. Detailed insights into local community contexts and requirements should inform hub objectives. Place-based approaches that engage community members and other stakeholders in the planning of activities, programs, services, and facilities is important, because one size does not fit all.*

Vision and Intentionality: *Developing a shared vision with stakeholders is essential to short-and long-term success. Championing this vision and adopting an intentional approach will attract like-minded partners and collaborators, guide decisions and facilitate action.*

Partnerships and Collaboration: *Schools can't go it alone. Schools have limited resources. Partnerships with like-minded community members, organisations and service providers are critical to establishing and operating a school as community hub. Facilitating communication, nurturing relationships, and developing robust partnerships requires significant investment of time and resources, but dramatically expands capacity for lasting impacts.*

Leadership and Governance: *School principals need support. Ideally, school leaders will champion hub projects, without becoming overwhelmed by additional hub-related responsibilities. Investing in their capacity to work with the community and external organisations, adopting distributed leadership models, and appointing dedicated hub leaders employed by the school or partners, will help prevent principal burn-out. Clear governance structures and decision processes also reduce stress.*

Policy Alignments: *Schools as community hubs inhabit fragmented policy environments. Enacting policy often requires crossing jurisdictions and funding agencies. Early insights into how the policies of stakeholders may*

influence a hub's development and operations should inform the way forward. Monitoring policy updates and their influence on hub resourcing, facilities and operations is also important. Regular engagement with policy makers enables advocacy for policy changes and fosters ongoing support.

Funding and Resources: *Reliable, long-term funding and financial management are essential. Blending and braiding funding from different sources—often tied to reportable outcomes—is often required to support hub operations. Further, facility construction and management often necessitate contractual agreements between partners. Upfront agreements on who's paying for what helps avoid disputes.*

Programs and Services Coordination: *Random acts of programming won't deliver impact. Strategic planning ensures day-to-day activities, programs and services achieve the desired outcomes. This requires effective governance and choosing not to partner with stakeholders whose objectives do not align with the hub vision. Training and retaining skilled coordinators is critical.*

Urban Planning and Design: *Schools don't exist in isolation. Planning for hubs must consider their location relative to other infrastructure, plus their physical integration with immediate urban surrounds. The connection of school facilities with social infrastructure networks can enhance community education, health, and wellbeing. Design should boost the neighbourhood aesthetic, with welcoming thresholds between school and public property to foster a sense of belonging and encourage community members to access hub activities, programs, and services—as appropriate at different times of the day (see 'safety & security' below).*

Facility Design: *Design for learning and community. Identifying all user-groups is a prerequisite to good facility design. Buildings and outdoor spaces should accommodate core school activities, with flexibility for other uses. Digitally connected facilities should enable multiple modes of communication between program/service providers and users. Spaces should be welcoming and inclusive, designed for all ages and abilities. Shared or co-located facilities can create budget efficiencies through capital and operational cost sharing.*

Safety and Security: *No school should be a fortress. Balancing security with an environment that welcomes the community is achievable. Safety is of heightened importance when children mix with adults from the wider community and is best discussed early in design, when both 'hard' and 'soft' security options can be explored. When stakeholders collaborate openly, solutions to security challenges can be found. Well-defined access protocols for different user groups during school times and outside hours should guide security measures.*

Facility Management: *Sharing facilities means sharing their management too. Sharing school facilities with the community increases the complexity of school site management. It is important to involve the managers of school facilities early to ensure sustainable arrangements inform the master plan and individual facility designs. Partnering with facility management groups, or outsourcing such services, can improve community access, while reducing the administrative burden on school personnel.*

Evaluation and Evidence: *High-quality feedback should inform decisions. Evaluation is vital as new hubs develop and as existing hubs evolve. Lessons from other hubs can help steer new projects in the right direction. Regularly collecting, analysing, and reporting evaluation data helps to sustain hubs. Metrics that go beyond students' academic achievements to assess the impact of hubs on belonging, engagement, satisfaction and tangible benefits to individuals, families and the wider community should be considered. Partnering with trained evaluators can help overcome the challenges this may present.*

Example of an Australian school building designed to support child, family, and community health and wellbeing

The Korayn Birralee Family Centre opened in 2020 in Corio, Victoria, as an adjunct to Northern Bay P-12 College. It represents efforts of the Victorian State Government to expand extended-service schools in underprivileged communities. Korayn Birralee means 'Corio children' in the local Indigenous language, Wadawurrung (Cleveland, 2023).



Figure 2. Entry to Korayn Birralee Family Centre, with passage through to Northern Bay P-12 College (Image courtesy of Brand Architects. Photograph by Blue Tree Studios)



Figure 3. Arial view of Korayn Birralee Family Centre, with connection to Northern Bay P-12 College (Image courtesy of Brand Architects. Photograph by Blue Tree Studios)

The Family Centre was created through a partnership between the Victorian Department of Education and Training, Department of Families, Fairness and Housing, City of Greater Geelong, Our Place, and Northern Bay P-12 College, with philanthropic support from the Coleman Foundation. It includes a shared entry and reception with Northern Bay P-12 College and offers long day care, kindergarten, maternal and child health services, playgroups, parenting programs, five consultation rooms for allied health services, a specialist family support program room, toy library, multipurpose community room, parent lounge and an extensive, nature-inspired outdoor play area (Our Place, 2021). In keeping with an approach developed by Our Place, five core strategies have contributed to achieving positive outcomes for children, families, and communities:

1. High-quality early learning, health, and development
2. High-quality schooling
3. Wrap-around health and wellbeing services
4. Engagement and enrichment activities for children
5. Adult engagement, volunteering, learning and employment (Our Place, 2021, p. 8).

This place-based initiative represents one of ten like-schools developed in the State of Victoria between 2019 and 2022, based on the historic success of Doveton College, which is widely acknowledged to be an exemplar school as community hub developed a decade earlier. Like the relationship between Northern Bay P-12 College and Korayn Birralee Family Centre, these new school initiatives have seen additional facilities built on or adjacent to existing schools, creating both physical and relational connections between the schools and extended services providers.

Research into inclusive learning spaces in schools

As part of the emerging global focus on design for inclusivity, our LEaRN lab at the University of Melbourne will soon commence a new three-year study, *Designing Learning Spaces for Diversity, Inclusion and Participation*. The project, funded by the Australian Research Council (ARC) Linkage scheme and partners, includes investigators from architecture, education, medicine/health plus several state governments, industry, and disability support sector partners. The project's outcomes will include the production of an inclusive learning spaces design framework to provide evidence-based approaches to designing and/or modifying mainstream schools to benefit all students' access and meaningful involvement in learning and the life of their school. This framework will include critical evidence, tools, and guidelines to equip school planners, designers, educators, and people with disability to create safe, welcoming, accommodating, and stimulating schools, integrating previously separate knowledge from architecture, education, and health fields.

'Participation' offers the conceptual basis for the research, helping to draw attention to issues associated with access and meaningful involvement in learning (Imms et al., 2016). 'Participation' also provides a focus for investigating agent-action relationships that are concurrently social and spatial/physical/material (Almqvist & Granlund, 2005; Eriksson & Granlund, 2004; Maxwell et al., 2011). It is worth noting that the WHO (2007) recognises attitudinal, social, and physical environments in which people live and conduct their lives as the overarching environmental factors influencing 'participation'.

Conclusion

This research paper discussed some of the current discourses and research activities in Australia associated with addressing the role of school buildings in fostering the education, health, and wellbeing of children, teenagers, teachers, support staff, families/carers, and other members of local communities. The importance of providing healthy indoor environment quality (IEQ) in schools to was highlighted, including measures to limit the transmission of airborne diseases, especially Covid-19. A range of issues associated with re-thinking the roles of schools in society and re-designing them as community hubs/multi-service delivery platforms were also discussed and current research into (re)developing mainstream schools as places that welcome and support the participation of students with disabilities/special educational needs was introduced.

The fundamental proposition, as articulated by Lawson and van Veen (2016b), is that schools as siloed institutions with a singular focus on academic achievement must be challenged if we are to prioritise the health and wellbeing of students, educational professions, and other community members. While academic outcomes will remain important, ensuring that children, families/carers, and other members

of local communities are well-supported and can fully-access educational opportunities will rely on schools adopting a more holistic view of their role. Educational equity will require schools to adopt an increasingly civic outlook and extend their capacity to work with partner organisations to deliver 'more than a school' health and wellbeing programs and services to those who need them, particularly in low socio-economic areas where the social networks and trusted relationships that tend to exist around schools can be leveraged to support much needed child and community development.

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