

The role of open learning environments

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Recognising the supposed 'failures' of open school design in the 1970s (Beck, 1980; Rodwell, 1998) and exploring the potential of 'open' learning environments will assist us in thinking differently about the way education is enacted today. In particular, exploring the influence of space on (1) the ways teachers and students can work together to create democratic settings for learning and teaching, (2) opportunities for interdisciplinary curricula to be developed, and (3) the creation of collaborative learning experiences for students and teachers alike.

In 2015, 20th century industrial structures and hierarchical power relations still dominate our secondary schools; one class, one year level, one disciplinary subject, one classroom at a time. This situation is creating a crisis in secondary schools, with many young people becoming disengaged due to a lack of opportunity to live and learn in a democratic setting.

Does it have to be that way?

Thankfully, the past decade has seen some inroads into the development of more contemporary and democratic socio-spatial settings for learning and teaching. The creation of secondary

schools including Gungahlin College in Canberra, Albany Senior High School in Auckland, and John Monash Science School in Melbourne, has challenged our thinking about how secondary schools can operate and how they should be designed. Leading this developmental process in the Australian context has been the Australian Science and Mathematics School (ASMS) in Adelaide, established on the grounds of Flinders University in 2003.

The ASMS, a non-selective senior secondary school (Years 10–12) that specialises in interdisciplinary inquiry-based learning in science and mathematics, operates in a purpose built facility that features an open and technology rich learning environment (OECD, 2012). Funded by State Government, this public school has a charter to transform science and mathematics education. As such, it includes a professional learning service that supports educators in South Australia and around the world to envisage 21st century curricula and pedagogies.

The group who conceived the school in the late 1990s were concerned that young people were turning away from the study of Science and Mathematics, a trend that has regrettably continued across the

sector. The founders designed the school, both physically and conceptually, to host a different way to design curriculum and enact learning and teaching. Some important features of the school that continue to embody their ideals include:

- Open, flexible learning spaces that are enriched by 24/7 access to information and communication technologies (ICT)
- Interdisciplinary, inquiry-based curricula designed to help learners connect concepts and contexts
- Large groups of Year 10 and 11 students taught by teams of teachers with different disciplinary backgrounds
- Teaching and Learning Teams' that design, teach and assess the curriculum and student performance
- Shared teacher offices that are open to learning spaces, thus enabling interaction and communication
- A strong focus on the development of self-directed learners.

Democratising teaching and learning relationships

When reflecting on a decade of practice at the ASMS, it is clear that teachers have worked together in very different ways from their counterparts at most other

secondary schools. The quality of the teamwork generated is perhaps the most prominent difference. For over 10 years, teams of teachers representing different disciplines have worked together to design, assess and accredit the inquiry-based interdisciplinary curriculum. This program, called Central Studies, incorporates the traditional science disciplines along with Mathematics, English and various humanities disciplines. The program has evolved over time, inspired by the scientific progress and development in areas such as Bio-science, Nanotechnology and Communication Systems.

The quest to develop self-directed learners has involved working with students to help them discover their strengths, seek feedback at every opportunity, and identify areas in which they could improve. Teaching and Learning Teams have developed pedagogical practices to support this development of self-directed learners.

To help students focus on their capabilities, a shift from 'teaching as telling' to 'teaching as intervention and feedback' remains a strong focus.

The influence of the physical environment has been profound. In the learning commons up to 120 Year 10 and 11 students learn amongst each other in the flexible ICT enabled spaces, supported by teams of up to four teachers. Students choose their own device, where they sit, who they sit with, and which workshops they attend. These socio-spatial arrangements create new norms and power relationships. The students create their own learning spaces, usually in groups, sometimes as individuals. This encourages teachers to move amongst the students, intervening where required, providing assistance, discussing ideas and provoking deeper thinking. The open learning environment creates accountability for students: they are responsible. The following quote, from a Year 10 student provides some insight into the student perspective:

The open space has changed my learning and the way I learn completely. Staying away from the teachers has helped me improve my learning by talking to my peers and exchanging ideas. Whereas at my other

school I was stuck in a single room being taught by a teacher giving us instructions so I couldn't use my thinking. Here, I use my creativeness as a first preference, and if I need help only then do I go to teachers (Ashu, Year 10 student).

Democratising leadership relationships

The way teachers understand the notion of leadership no doubt influences their thinking about power relations and leadership structures.

Upon testing some of Harris' (2009) ideas about distributed leadership, it became obvious that teachers still saw themselves operating within a system of traditional hierarchies – even when recognising the high levels of productive teamwork occurring at the school. This was perhaps not surprising, as embedded in the term 'distributed leadership' is the idea that someone is distributing the power.

More appealing were Headley Beare's (2006) ideas about moving away from the school as a machine-like organisation, to a 21st century 'imaginary' that envisages the school as a living system: a network of relationships, rather than lines of authority and power.

The Contributive Leadership Model [see www.asms.sa.edu.au/wp-content/uploads/2012/10/ASMS-innovation-AARE-dec12.pdf] was first conceived by the school in 2012 and was recently updated. Through contributive leadership, the ASMS is currently seeking to further realise its charter, that is, to transform Science and Mathematics education. The ideas generated through collegial teamwork are intended to flow throughout the organisation and on beyond the school. Guided by this model, teams are formed based on the work that needs to be done and the learning that is required to design new curricula and embed new pedagogies. In this model, leadership arises from the expertise and knowledge of individuals and groups, rather than from the roles or positions that people fill.

The importance of the open learning environment as an enabler of this 'organic system' cannot be overstated.

The architecture of the ASMS has been central to the success of the learning and teaching model, through the forms of social interaction that it supports. The informal meeting of people, consistent communication, and the general awareness of what others do, has been made possible through the design of the school. Teachers are not locked away in an office and everyone's practice is available for others to see.

The combination of educational and organisational philosophy and space can provide a socio-spatial setting that is concurrently dynamic, flexible and democratic. This combination has evolved to support people to work and learn together and provide a reference point for thinking about the future of secondary school education more widely. The effectiveness of this socio-spatial combination can assist in realising many objectives that drove the open school movement of the 1970s, but which were not widely realised at that time.

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Photo courtesy of Susan Hyde.

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