LEARNING ENVIRONMENT DESIGN — DANDENONG HIGH SCHOOL

EDITORS’ PREEMBLE: This paper complements the accompanying interview on Dandenong High School. Mary Featherston is a design consultant specialising in the design of schools. She is known for her intensive work, with both students and teachers, to develop bespoke learning environments that support a range of learning modalities. In this paper, Mary describes her rationale for the layout adopted at Dandenong High School. She explains why spaces fluidly interconnect enabling students to move seamlessly between activities. Mary concludes with an argument for purposeful spaces in preference to flexible spaces.

The interior environment of the new buildings of Dandenong High School provides a ‘landscape’ of possibilities, where people and ideas may flow and connect. The intent of the design is to closely support and reflect the school’s beliefs about young people and learning, an example of ‘built pedagogy’. Education must come to be recognised as the product of complex interactions, many of which can only be realised when the environment is a fully participating element.

Creating a new school involves countless decisions—what determines the choices that are made? The Education Rationale for the Dandenong Education Precinct set a vision for learning, ‘to inculcate a love for learning and curiosity for inquiry’ and ‘to understand the learner and the learning process.’ The interior design of the new buildings responds to this contemporary and collaborative approach to learning and teaching.

Detailed development of the school’s vision and pedagogical practice has evolved over more than two years through a highly participatory process involving all staff and students. With support from the school and the Department of Education and Early Childhood Development, DEECD, the education design consultant undertook an action research project to link pedagogy to design of the learning environment. A prototype environment for Year 7 students was created in an existing portable classroom and provided a test bed for ideas. Design of the physical environment for the new buildings could then evolve from the ‘inside-out’ a term also used by the education consultant Julia Atkin to describe the process of building a learning culture and school ethos based on shared values and beliefs.

Tight building deadlines meant that decisions about spatial configuration and fitout were required long before pedagogy had taken shape. A decision was taken by the school leaders and architect, supported by DEECD, to proceed with construction of the buildings as shells having minimal internal load bearing walls. Detailed development of internal spaces could then grow out of the school’s reconceptualised pedagogy. Evidence over many decades indicates that radical educational innovations fail when they are not ‘owned’ by the protagonists or do not have supportive physical environments.

**Community of Learners**

The learning framework is based upon a collaborative approach; teacher-teacher, student-student and student-teacher.

At the heart of all development discussions was concern for the nature and quality of human relationships, especially for each student and teacher to develop a sense of belonging to a community of learners. The decision to form communities comprising 50 students with a team of three teachers generated the spatial characteristics of the interior environment.

Each floor plate comprises an assemblage of discrete settings interlinked to form a flowing space. The space invites movement and exploration and gradually unfolds to reveal a wide variety of social and learning settings. Articulating space in this way is intended to create a home base/ neighbourhood which is open and generous but not overwhelming. Most importantly, a lively convivial environment is created where friendships can be developed and where students can see their team of teachers collaborating.

Teachers individually and as a team, can observe and interact with students in a variety of contexts, leading to deeper and richer relationships. Visual connection between areas enables one teacher to be wholly occupied with a group of students, as in a direct instruction session, whilst other staff facilitate where needed. Openings between settings, actual or glazed, enable all the participants to be aware of who is where and what is happening and this also encourages purposeful choice and spontaneity. Students are encouraged to develop independence and self-management in a number of ways including personal storage within learning spaces, fittings and furnishings which provide ease of access to resources and clear circulation paths for ease of movement.

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Overall the space of each floor level is configured so that individuals or groups of students may be immersed in a particular experience whilst maintaining a sense of connection to the whole group. This is achieved by locating settings relative to one another and by various boundaries or enclosures around each setting, from minimal, such as a change of floor surface, change of level and items of furniture, to transparent, such as glazed panels, walls and doors, to solid such as full-height walls.

The configuration of space is non-hierarchical to support and reflect democratic relationships. It also recognises the significance of the social and emotional components of learning and the value of all forms of learning: adult or student directed, passive and experiential.

**TRANSFORMATIVE LEARNING**

Opportunities for authentic learning experiences are of utmost importance.

The school’s approach to learning and teaching respects the individuality of each student, their unique backgrounds, interests and capabilities and their need to learn individually as well as collaboratively. Inclusion of ‘specialist’ facilities within each communal home supports students’ preferred learning styles. Taken together, this approach to pedagogy led to the design of a living/learning/working environment comprising a wide variety of discrete settings: intimate and spacious, quiet and active, wet and dry, light or dark, for discussing, researching, experimenting, communicating, creating—using many expressive languages, documenting, reflecting and relaxing.

Each setting has been purposefully designed based on the optimal number of participants and the nature of the experience(s). Each has a particular size, degree of enclosure, relationship to adjoining settings, lighting, services, surfaces, furnishings and loose items. Each is designed to attract, engage and sustain engagement by providing ‘cues’ for use, by minimising distractions from adjacent activities and by placing resources at point of use. The intent is that design of the physical environment, together with periods of unbroken time, will nurture deep and transformative learning experiences.

Settings are interlinked to form a fluid space which expresses the interconnectedness of all areas of the curriculum and the dynamic, sometimes unpredictable, processes of learning. Many and varied activities occur concurrently. Connectedness of settings also enables students to stay ‘in the flow’ of a project, moving seamlessly from one experience to another—without having to wait for the next timetabled session in a remote specialist facility. The environment brings together functions which are traditionally housed separately as general purpose and specialist spaces. At ground level, staff areas and science studio spaces open to the outdoors.

Visibility and ease of access to facilities and resources also provides a constant reminder of possibilities or ‘affordances’. Integration of ICT into all areas stresses the significant relationship between learning in the real and virtual realms.
**Ambience**

Whilst the physical environment is made up of tangible things and is concerned with function and practicalities it also affects how people feel and intangible qualities such as respect were also to be expressed by the environment. The design creates an informal but sophisticated ambience as requested by the adolescent students.

Learning environments are extremely busy places full of people, movement and ‘stuff’ and there are conflicting needs between complexity and clarity—the need to provide richness and stimulation whilst also providing a calm and coherent environment. The intent here is to provide a visually and functionally harmonious ‘classic’ background, with a restricted palette of finishes and mainly neutral colours where the focus is on the students, their activities and their work. Students say they feel relaxed in the new environments and ready to learn.

Generally furniture items are of high quality and readily available, but some special items have been designed for storage/space division and relaxed seating. Student lockers were specially manufactured and are incorporated into the learning commons.

**Stability or Flexibility?**

These environments are relatively permanent rather than totally flexible. Stability means that everyone knows where things are—important in a very dynamic and unpredictable program. Teachers comment that permanent settings save time and energy which would otherwise be spent in negotiating and scene shifting. Purposefully designed environments enable the development of richness and complexity over time.

The learning environment may be conceptualised as being made up of three layers: the building shell, internal settings and loose items, resources and equipment etc. All layers need to be considered together for functional and visual integrity though they may be the responsibility of different agents. The building shell and settings are relatively permanent whilst the last layer, the resources and displays are transient and built up over time by the participants. It is this layer which expresses the identity of a particular community, reflecting their backgrounds, interests and development of ideas. This is a most significant layer in that it builds familiarity, emotional attachment and a sense of belonging.

**“Opportunities for authentic learning experiences are of utmost importance”**

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