Contemporary Research & Thinking

**Professor John Hattie**
Hattie’s work on “visible teaching and visible learning” is now mainstream, like the iPhone or the Apple watch. He identified through his research that the biggest effect on a student’s learning occurs when “students become their own teachers”. Hattie promotes self-motivating, self-evaluating, self-assessment, self-teaching and the quality of teaching as active, passionate and engaging.

**Stephen Heppell**
Heppell encourages stage, not age learning, and a mixture of individual and group learning, and creative playful space. A physical manifestation of these ideas can be interpreted as having no more than three walls, three points of focus instead of one, stairwells as lecture theatres, and circulation zones as opportunities for teaching and learning. From our own pragmatic design and construction methodology, SHAC finds guidance from his “Eyes on the horizon, feet on the ground” philosophy.

**Pam Ryan**
Pam has a lifelong journey of learned skills and experiences, from Wilcannia and Bourke NSW with indigenous communities, to being the Education Director of International English schools in Hong Kong. Her message is connecting children with heritage, culture, community, identity and encouraging greater creativity by ethical leadership.

**The Knowmad Society: Education Futures**
The Knowmad Society includes contributions from new writers and educationalists interested in the shifting education paradigm. They provoke discussion on how students should learn, work, play and share in almost all configuration, that the students and teachers have the ability to “unlearn” just as much as the ability to simply learn. Christine Renaud believes everyone can be a lifelong teacher and promotes engagement with mentors.

**BASTOW Institute**
An internationally acclaimed institute run by Michael Fullan at the University of Toronto seeks to develop innovative responses to deep, real life learning goals, new learning pedagogies and rapid learning cycles and technology. Fullan states, “One thing worse than a bored student... having to teach them.”

**John Dewey**
John Dewey was an American Philosopher, Psychologist and Educational Reformer in the 20th Century. He promoted lifelong learning in an ever-changing and dynamic world. Learning should start with a “driving question” which promotes investigation, research, collaboration and working together for a collective goal through team strength. He concluded that education should integrate learning through experience, and not through traditional rote learning.

**NSW DEC Educationalists**
Diane Dunn, Executive Director of Education, NSW and Sue Lowe on four current Future Focused Learning Campuses including UTS Lindfield, Ballina, Huntlee and Parramatta. This approach & experience includes the development of both new teaching spaces and refurbishment of existing spaces to meet Future Focused Learning needs.

**Education NSW Learning for the Future**
Futures Learning supports NSW public schools implement future-focused learning and teaching practice. They work closely with departments, asset management and the Information Technology Directorate (ITD) on learning and technology changes.

**LEaRN- Dr Ben Cleveland, University of Melbourne**
LEaRN is a multidisciplinary forum, a portal and an international network bringing together academia and industry to research, imagine and discuss physical learning environments in school, vocational, university, medical and corporate contexts.
Future Proofing & Architectural Approach

**AFFORDABILITY**
Economy of scale, materiality and technique using pragmatism. A building form that is easy to adapt and still be maintained for longevity.

**FLEXIBILITY**
Future proof through flexible open plan spaces by utilising a building grid that can accommodate a range of spaces that expand, contract, open inwards and outwards.

**ADAPTABILITY**
Learning Spaces should be able to adapt to the future needs of the school, including paralleling growth of the built forms with the growth of the school population, as well as the changing needs of the learning environment.

**SUSTAINABILITY**
Learning spaces that are efficiently and passively designed whilst harnessing renewable energy, light, shade, connections to nature, be appropriately insulated and ventilated, accommodate rainwater storage and make use of future affordable technologies.

Buildings that are designed to be environmentally sustainable are comfortable and safe spaces for students and the community that address the needs of the school environment as well as the natural surrounds of the campus.
Design for Educational Excellence

As Lake Cathie is a DoE facility it must:

**Education Principle 1:**
First and foremost, focus on the needs of learners and learning.

**Education Principle 2:**
Build community and identity and create a culture of welcome, inclusion and belonging that reflects and respects diversity within the school’s community.

**Education Principle 3:**
Be aesthetically pleasing.

**Education Principle 4:**
Provide contemporary, sustainable learning environments that:

- Promote learning for students and teachers through collaboration, social interaction and active investigation
- Encourage learner self-management and self-direction
- Support a full range of teaching strategies from direct explicit instruction to facilitation of inquiry and authentic project and problem based learning
- Facilitate learning and connection anywhere, anytime by providing seamless access to ICT and integration of learning resources throughout the learning spaces
- Be integrated into, and maximise the use of the natural environment
- Enable aspects of the buildings, building design and outdoor spaces to be learning tools in themselves—for example, learning from the ecologically sustainable features of the design and associated energy management systems
- Are age and stage appropriate

**Education Principle 5:**
Embed the potential for re-configurability, both in the present for multi-purpose use and over time for changing needs
Principles of Quality Design for Schools

Design Quality Principles listed within the State environmental Planning Policy (SEPP) for Educational Establishments and Child Care Facilities 2017 are to be employed when designing new schools and school building upgrades, these principles are a set of values that enable a common understanding between school developers, design teams, school staff, students and community when designing new school buildings or building upgrades. According to Education SEPP 2017, the principles of Design Quality for state significant development are as follows:

1. **Context, Built Form & Landscape**
   - Schools should be designed to respond to and enhance the positive qualities of their setting, landscape and heritage, including Aboriginal cultural heritage. The design and spatial organisation of buildings and the spaces between them should be informed by site conditions such as topography, orientation and climate. Landscape should be integrated into the design of school developments to enhance on-site amenity, contribute to the streetscape and mitigate negative impacts on neighbouring sites. School buildings and their grounds on land that is identified in or under a local environmental plan as a scenic protection area should be designed to recognise and protect the special visual qualities and natural environment of the area, and located and designed to minimise the development’s visual impact on those qualities and that natural environment.

2. **Sustainable, Efficient & Durable**
   - Good design combines positive environmental, social and economic outcomes. Schools and school buildings should be designed to minimise the consumption of energy, water and natural resources and reduce waste and encourage recycling. Schools should be designed to be durable, resilient and adaptable, enabling them to evolve over time to meet future requirements.

3. **Accessible & Inclusive**
   - School buildings and their grounds should provide good wayfinding and be welcoming, accessible and inclusive to people with differing needs and capabilities. Schools should actively seek opportunities for their facilities to be shared with the community and cater for activities outside of school hours.

4. **Health & Safety**
   - Good school development optimises health, safety and security within its boundaries and the surrounding public domain, and balances this with the need to create a welcoming and accessible environment.

5. **Amenity**
   - Schools should provide pleasant and engaging spaces that are accessible for a wide range of educational, informal and community activities, while also considering the amenity of adjacent development and the local neighbourhood. Schools located near busy roads or near rail corridors should incorporate appropriate noise mitigation measures to ensure a high level of amenity for occupants. Schools should include appropriate, efficient, stage and age appropriate indoor and outdoor learning and play spaces, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage and service areas.

6. **Whole of Life, Flexible & Adaptive**
   - School design should consider future needs and take a whole-of-life-cycle approach underpinned by site wide strategic and spatial planning. Good design for schools should deliver high environmental performance, ease of adaptation and maximise multi-use facilities.

7. **Aesthetics**
   - School buildings and their landscape setting should be aesthetically pleasing by achieving a built form that has good proportions and a balanced composition of elements. Schools should respond to positive elements from the site and surrounding neighbourhood and have a positive impact on the quality and character of a neighbourhood. The built form should respond to the existing or desired future context, particularly, positive elements from the site and surrounding neighbourhood, and have a positive impact on the quality and sense of identity of the neighbourhood.
Design for Future Focused Learning

Lake Cathie Public School has been designed to support Future-Focused Learning and teaching, which focuses on developing skills through inquiry, collaboration, and problem solving.

This contemporary research & thinking shifts learning methods from traditional teacher led teaching to Future Focused Learning which:
- Encourages inquiry
- Develops independence
- Encourages critical thinking
- Enabled by technology

The traditional learning environments that focus on individual, teacher directed learning were incompatible with the collaborative, problem-solving involved with Future Focused Learning. This has required extensive refurbishment of existing schools to become compatible with the new collaborative, student led pedagogy. These refurbishments are to be guided by international trends, academic research (LEaRN) and the recently released Design Guide for Schools (NSW).

The aim of Future Focused Learning environments are to be:
- A learning community
- Flexible and provide a variety of spatial settings for different learning modes
- Adaptable
- Technological and future ready
- Connected with the wider community