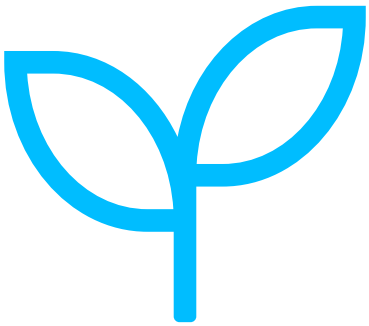


Element 17

Creative Learning Environments

The design of a learning environment has a profound impact on the overall learning process, but designed spaces should always support learning rather than drive it. Organisational knowledge of how to use space effectively is pivotal to growing a strong learning culture and vision.

Creative Learning Environments

Designed spaces have a profound impact in a learning community; on its pedagogy, collaboration, communication and wellbeing.

If a new learning paradigm is to emerge and sustain change, the learning environment must be designed to support all learning styles. People must abandon the notion of separated, seated classrooms, towards a more fluid concept of highly flexible and agile spaces. This encourages an emerging education system fit for 21st century purpose.

Learning environments should enable learning to occur that can be anything from solo to large groups, occurring asynchronously. A learning community must arrange itself to suit all learning experiences and activities. David Thornburg's campfire, cave, watering hole and life space concept supports the learning spaces required. A variety of spaces enables students to use them according to their needs leading to more consistent engagement.

A creative learning environment must be flexible to facilitate current and evolving pedagogies. This requires furniture and equipment to be easily moved around. The flexible space should be future-proof so it can be reconfigured when new learning styles emerge. It should also facilitate a strong network of collaboration and communication.

When we talk about new designed learning environments, we are not just referring to physical spaces; we must consider the pedagogic space as well. Learning environments should never dictate pedagogy but support it in ways that empowers all learners; pedagogy always comes first. It is not enough to have a beautiful space - it must be arranged and used appropriately to deliver and facilitate exceptional learning experiences.

A digital age requires designed spaces that reflect the needs of a global economy. In the 21st century, education must reinvent itself to simulate what individuals will enter into once they leave formal education systems; complex communication networks. Newly imagined learning spaces must create the necessary synergy between formal learning and the real world to better prepare individuals to be future ready in their continued, daily learning practices.

Then	Now
• School environments were designed to house students in seated classrooms. • Every student had a designated space in the classroom. • The classroom was the main space where 'learning' occurred.	• Classrooms must support collaboration and communication, which requires a rich, active learning network. • Newly designed spaces are agile with learners able to use a variety of spaces to suit their needs at any time. • All spaces in a learning community are potential opportunities for learning.

Starting Questions

1. Are you aware of the variety of learning spaces that students can use to support their learning?
2. Does the learning community make best use of the spaces it has to support a variety of learning styles?

3. If the learning community is divided by classrooms, what possible ways could be devised to open up learning to create a richer network of collaboration and communication across the whole community?
4. Does the learning space in the community dictate the pedagogy, or does the pedagogy dictate the learning space?
5. Are classrooms and dedicated spaces such as sports halls and music rooms the only spaces where learning occurs? Is there 'dead-space' that could be reimagined? Where?

Key Initial Actions

1. Assign a dedicated team which includes all represented members of the learning community; students, educators, non-teaching staff and parents to create a clear vision for what your learning environment should look like.
2. Sketch out and plan a creative learning environment that fosters the skills and competencies that learners require to become future ready when they leave formal education.
3. Ensure the creative learning environment design caters to the spectrum of individual learning needs. It should include the cave, watering hole or the campfire spaces, whilst ensuring digital learning can be facilitated.
4. Research the potential of your learning space. Include sources of design information from reading and visual materials as well as qualitative research with all key actors.

On-going Actions

1. Adopt a growth mindset when designing for change and be aware that the process of bringing about change is a long-term project which requires continued iteration, change and a fail-forward attitude.
2. Ensure that designing a creative learning environment is done in collaboration so that all learning and professional needs are catered to.

Further Reading

Australia's Campfires, caves and watering holes

21st Century Learning Space Design

Re-imagining Learning Spaces to inspire contemporary learning – Part One: Models for Change

David Thornburg on the Evolving Classroom (Big Thinkers Series)

Is this Finnish school the perfect design?

The school of the future has no doors

Books

From the Campfire to the Holodeck: Creating Engaging and Powerful 21st Century Learning Environments

Design for the Changing Educational Landscape: Space, Place and the Future of Learning

Watch

David Thornburg on the Evolving Classroom

Find out More

> ***'Creating spaces for learning has been an art for too long - in practice, it is a science and very complex one at that. There are a huge number of variables - everything matters.'***
>
> *Professor Stephen Heppell*

The 21st century is challenging old assumptions of learning spaces. Traditional, rowed-desk approaches are no longer serving diverse, individual learning needs, nor adequately preparing them for highly complex, collaborative work environments that students will enter into in the future.

The old paradigm for learning catered to productivity; a factory-line response that delivered collective efficiency. This style parallelled the needs of an industrial world. A new paradigm for learning however, must foster creativity and collaboration. To do so, the traditional models of classrooms that have existed across the world need to be reimagined.

Key Ideas

1. A new learning paradigm needs to be accompanied by a reconsideration of the design of learning spaces that better support active and collaborative learning.
2. Creative learning environments should never dictate pedagogy, but support learning in ways that empowers individuals.
3. Creative learning environments should cater to individual learner needs concurrently. Thornburg's campfires, caves and watering holes concept supports this idea.
4. While the physical environment can never be a substitute for effective teaching, it can be a powerful support for it.

Questions

- How can traditional learning communities reimagine their learning community spaces to advance all learning experiences?
- What existing spaces in the community are not being used for learning? How might you begin using those spaces?

- How much impact do you think the current learning environment has on learning experiences? Is this impact positive or negative?
- Can different learning methodologies in the community happen in one space at the same time?
- Does the learning community use technology to support learning experiences in the physical environment?

1. A new learning paradigm needs to be accompanied by a reconsideration of the design of learning spaces that better support active and collaborative learning.

The traditional model of schooling was based on a factory-inspired series of similar classroom spaces, each separated from one another and clearly defined. The last two decades have seen a grassroots shift away from such thinking – and many countries have started to think very differently about contemporary learning environments.

Perhaps it is an era to really look at radical options relating to the infrastructure needs of a wider community and a school community located within it. Many schools are looking to be re-modelled – a challenging task in any context. Many new schools have been built around concepts of a very different model of schooling.

Perhaps it is a time for mega 'what ifs?'. What if existing schools were remodelled as aged care facilities? A classroom is probably an appropriate size for a self-care aged care apartment – and schools already have disabled access in most circumstances. There are many shopping centres, redundant industries and similar larger infrastructure that could be remodelled as schools. We need to think 'beyond the walls'. Now is the time for creativity when it comes to providing the right resources for schools.

Reimagining learning spaces means a new type of learning can emerge. If a new learning paradigm is to emerge and sustain change, the walls in educational institutions must literally come down. New architectural design of creative learning environments is a fundamental component to encouraging an emerging education system fit for 21st century purpose.

> ***'We spend a lot of time trying to change people. The thing to do is to change the environment and people will change themselves.'***
>
> *Les Watson, Pro Vice-Chancellor, Glasgow Caledonian University*

Once traditional classrooms are discarded and replaced by new designs, the learning space conceived enables more complex, impactful communication for learners and teachers as well as more effective learning opportunities. New design has profound implications on a learning culture and broadens opportunities that were previously unimagined or near-impossible to action. Newly designed learning environments should essentially enable learning to occur that can be anything from solo to large groups and occurring asynchronously in the same space. By offering students this variety, it enables them to decide upon learning that can suit their needs at any given time, which leads to stronger and more consistent engagement.

Extending beyond this, when you tear down walls to create larger open learning spaces, it encourages teacher collaboration which when done with the correct intent, can enhance learning, strengthen a community, strengthen organisational culture and build a positive relational support network. This creates a new vision for learning that is better suited for the 21st century.

"United we stand, divided we fall"

Aesop

2. Creative learning environments should never dictate pedagogy, but support learning in ways that empowers individuals.

When we talk about new designed learning environments, we are not just talking about physical spaces - we must consider the pedagogic space as a concept as well. A better understanding of new available spaces can highlight the array of learning options which can evolve pedagogical practices and facilitate andragogy and heutagogy - ultimately supporting individuals to becoming self-determined, lifelong learners, which is one of the overarching missions at Learnlife. Increased knowledge of a learning space can increase the variety of learning options and styles.

New learning space designs can promote several positive experiential aspects, including;

- individual and group learning opportunities simultaneously;
- cooperative, group-based activities, as well as presentations and performances;
- removed pressure from teachers to be in 'control' of a group and solely responsible for its overall behaviour;

- new learning possibilities and facilitating new pedagogies;
- flexibility in space, location and resources;
- space for instruction, presentations, discussion, talk and privacy, private study;
- opportunities for learners to approach experts in various learning contexts, and;
- more room to move around.

3. Creative learning environments should cater to individual learner needs concurrently. Thornburg's campfires, caves and watering holes concept supports this idea.

The work of David Thornburg is pioneering in communicating how architecture and design has profound impacts on learning. Thornburg identifies three archetypal learning spaces - the cave, watering hole, campfire - that schools can use as physical and virtual spaces for student learning. Added to this list is a fourth learning space - life - the real world experiences that we are exposed to daily.

- Cave

The cave is a space where students work independently to complete tasks. They can reframe ideas gathered from interaction with other students and stay focused on their reading and research.

Ultimately, the cave is a space for self-reflection. An individual can think and transform their learning which has been gathered externally, and from this form their internal beliefs. In this space a student can withdraw to navigate their internal world, which cultivates intrapersonal skills. Some of the best learning can occur when students are alone, able to block out the external world and think for themselves. Emerging from the cave, a student can use the information they have procured to collaborate or increase learning for others.

An extension of the physical cave is the virtual cave. The virtual cave is a space where learners work alone using digital technology. An example of a virtual cave is a blog or vlog.

Visionary film director JJ Abrahms offers an insightful prediction of what the future virtual learning cave might look like in his 2009 movie, Star Trek:
Vulcan School

- Watering hole

The watering hole is a space where students work in small groups to complete tasks. They are encouraged to discuss, collaborate and share ideas.

Ultimately, the watering hole is a space for collaboration. It is informal, and peers can

share information and discoveries, acting as both learner and teacher simultaneously. It promotes key learning methods of peer-reflection and feedback. The watering hole helps foster interpersonal relationships which can influence a strong learning culture and a positive relational network. Because this space is about collaboration, it is fashioned so that individuals can use the network to enhance learning - the support for learners includes student to student, student to teacher and teacher to teacher collaboration. The watering hole should essentially enable freedom of movement and improvisation.

An extension of the watering hole is the virtual watering hole. A virtual watering hole is an online collaborative space, which includes all web 2.0 tools as well as online collaborative platforms that facilitate group networked learning. Examples of Web 2.0 include social networking or social media sites, blogs, wikis, video sharing sites, hosted services, web apps and collaborative platforms.

- Campfire

The campfire is a space where the whole group meets to receive instructions.

Ultimately, the campfire is a space for expertise - people gather to learn from an expert. This conjures an image of the wise elder passing down insights through storytelling, preserving culture for the next generation. Today, the experts are not only teachers, but also students who share their learning with peers and other teachers. It is a space where expertise is delivered or broadcast out from the wise individual, only today we can all inhabit this space and become the sole disseminator of knowledge.

An extension of the campfire is the virtual campfire. This is essentially flipped learning, which uses digital technology so that students can access expertise when needed. The master teacher is available at any time to teach the student in whatever area of mastery they wish.

- Life

This space is essentially the real-life spaces that we inhabit in the outside world. These spaces provide crucial, experiential learning opportunities for individuals when they are acknowledged and considered part of a learner's journey. The types of authentic life spaces might include streets, markets, museums, subways, shopping malls, and many other locations that we encounter in the real world - this is all learning which students in a learning community should be made aware of.

Furthermore, understanding the life space as a place of learning encourages individuals to extend their learning beyond traditional learning institutions which are time-constrained, and foster a mindset with a propensity towards lifelong learning.

The campfire, watering hole, cave and life spaces provide holistic opportunities for learners through regular exposure and by fully understanding how to use them. The responsibility is on the educator and learning community to provide transparency and to develop individual skills in using them.

Moving beyond viewing these spaces as purely physical enables an increasing understanding of recognising them as being virtual, emotional, social, relational and pedagogical. And by viewing learning through this holistic lens, it increases the creative potential of the learning environment.

> ***'Spaces are themselves agents for change. Changed spaces will change practice.'***
>
> *Alexi Marmot: Designing Spaces for Effective Learning*

4. While the physical environment can never be a substitute for effective teaching, it can be a powerful support for it.

The physical design of new learning spaces must provide a multi-dimensional environment for learning, which is:

1. Flexible – to facilitate current and evolving pedagogies. Furniture and equipment should also be easily moved around to suit varied learning needs.
2. Future-proofed – to enable the space to be reconfigured as new learning emerges.
3. Creative – to inspire learners and teachers to use spaces effectively and to have the freedom to imagine the potential for learning beyond traditional classroom spaces.
4. Supportive – to foster the potential of all learners by enabling opportunities to learn in whatever style they wish and to enter into different learning spaces that suit immediate needs.

Active and collaborative learning is an emerging educational trend, however room design does not always reflect nor encourage it to properly evolve. Older spaces do not consider the entire spectrum of student learning needs, which means that teachers are under continued pressure in existing learning environments to deliver learning that is not suited to everyone under the circumstances.

A final word...

Technology and collaborative work environments continue to change and influence the design of learning spaces. In the 21st century, education must reinvent itself to simulate what individuals will enter into once they leave formal education systems. Creating new designed spaces can foster varied, visible learning, new mentorship from a broader spectrum of support from teachers and other co-working professionals, spontaneous opportunities and community interactions which seamlessly blend into the environment. The new creative learning environment can create the necessary synergy between formal learning and the real world and better prepare individuals to be future ready in their continued daily learning practices.

Act Now

Most leaders would relish the notion of creating new learning spaces, but might feel stifled to do so by tight budget constraints or the grip of the traditional teaching methods siloing individuals or groups who are averse to change.

If change is considered incrementally, it will not overwhelm people who are willing to make a shift, don't know how to or feel they cannot while they are bound by a traditional learning culture that uses traditional learning spaces. Also, incremental change can be more affordable and not put pressure on tight education budgets. For those opposed to change, baby-steps can lessen the extent of the fear-of-change that people with habitual, fixed teaching mindset approaches have.

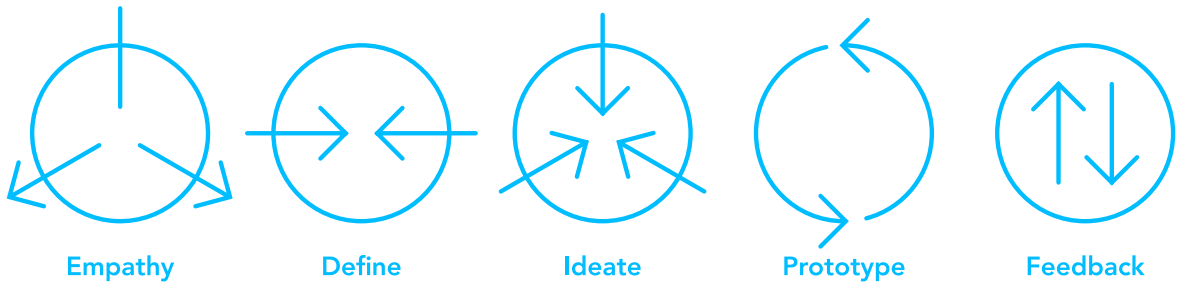
Ultimately, for a designed learning space to be used to its full potential, it requires high collaboration between leaders and teachers who must begin to work together to facilitate and imagine a new paradigm for learning. Furthermore, learners should be included in the design-thinking process, as they are most affected by the change to the learning culture. Space should support pedagogy and not dictate it, so it is as equally important to be creative with the space available whilst iterating change in the long term.

The following points are the crucial aspects to be considered to ensure change is sustained and impactful:

1. Clear vision

The process might take some time, as every learning environment is unique with unique needs and configurations. Approaching such vision could be enhanced by establishing a space management team. This team should be inclusive of all stakeholders in the environment including leadership, teachers and learners. Non- teaching staff should also form part of this team.

A design thinking approach might offer the best method of managing a change project of such scale. This can provide the necessary evaluation that should occur during and after the design and construction of new learning spaces.



2. Growth mindset

Fostering a fail-forward approach is vital if the potential for learning is to come to its full fruition. This is equally as important during the design thinking process and after a new creative learning environment has been established. The more failings that occur in this process that can spark better decisions, the closer to a utopian creative learning space the end product will be. Once a creative learning environment is established, attaching pedagogy to it is a new project in itself which requires another separate design-thinking approach.

3. High insight

The creative space management team should spend time researching the potential of its learning space. This should include sources of design information from reading and visual materials as well as qualitative research with all stakeholders in the learning environment to determine individual perceptions of various spaces. Using this approach will enhance the overall use of space and enable its full potential to emerge.

4. Focus on people

The creative learning environment must cater to the spectrum of individual needs. It should support learners who want to work in the cave, watering hole or the campfire, whilst also ensuring that digital learning can be facilitated. Added to this, the creative learning environment should enable opportunities for the various learning styles that each learner might lean towards to be readily available.

5. Future oriented pedagogy

Although we cannot predict what the future holds, we do have strong intuition from key thinktank sources on what to expect. Pedagogy must reflect what is trending and what is predicted. This means that a creative learning environment must foster the skills and competencies that learners will require to become future ready when they leave formal education. The pedagogy should ensure a commitment to collaboration, complex think-

ing, innovation and agile behaviours. Preparing future oriented pedagogy must also enable technology to be used to support learning seamlessly. Ongoing envisioning supported by research is a helpful process to maintain a future-ready learning community.

6. High collaboration

The design of the creative learning environment must include collaboration from a range of stakeholders. This will ensure the space can cater to a range of needs, be it for learning or professional duties. The outcome of the learning space should also ensure collaboration for all stakeholders in a range of scenarios which can occur concurrently.

Examples in Action

Designed spaces continue to ignite inspiration for learners and employees in business and education worlds. There is widespread recognition that an innovative, designed space can attract the best talent and get the most out of those who inhabit its space.

The following examples are taken from schools, businesses and organisations, noted for their use of designed spaces to strengthen culture and inspire change.

Schools

Flexible learning spaces
Julie Grazotis, from New South Wales, Australia, shares her journey of implementing flexible spaces in line with the future learning needs of students.

Innovative learning spaces in Italy
In the last five years Italian school buildings have been an important focus of the national government and the Ministry of Education. INDIRE is the benchmark for educational research in Italy. It develops new teaching models, tries out new technology for training courses, and fosters innovation redefining the relationship between space and time of learning and teaching.

Sustainable Schools: 14 Smart Green Learning Facilities
Stunning examples of sustainability in architecture that can teach designers around the world to think green and beautiful.

The Hellerup School
An ambitious Danish school, approaching its second decade, offers a unique perspective on 'personalized learning,' strongly supported by its use of pedagogical space.

Bridge School
The Bridge School connects the two parts of the small village of Xiashi that lie on either side of a small creek that runs through the village. The structure is created by two

steel trusses that span the creek with the space between them housing the functions of the school. The result is a project that has successfully invigorated the entire community, encapsulating social sustainability through architectural intervention.

Stephenson College, Coalville

Coalville campus, a state-of-the-art, modern campus completed in 2005, is considered to be one of the best designed and up-to-date colleges in the United Kingdom. Students learn in a modern setting and have access to industry standard equipment across all faculties.

Kastelli School and Multipurpose Hall

The two story multipurpose hall contains daycare, elementary and high-school, college and youth facilities as well as sports halls and a library. The building has room for about 1500 users and spans about 23 000 square meters. The building is divided into 4 blocks, each with different pastel colored themes. The spaces are adjoined by a common lounge with intricate mushroom shaped concrete pillars. The building promotes synergy, common functionality and community.

Mildred Manning Science Centre

At the heart of the Mildred Manning Science Centre is collaboration. Wide-open spaces. High tech labs. Writable desks, walls and glass classrooms walls. The multi-award-winning Science Centre is designed to ignite students' curiosity, analytical thinking and creativity. It's the best possible environment for students to solve the scientific challenges of tomorrow.

Organisations

Design Factory

Aalto Design Factory was born from a research project focused on creating an ideal physical and mental working environment for product developers and researchers. Today, ADF is one of the spearhead projects and one of the first physical manifestations of Aalto University encouraging and enabling fruitful interaction between students, researchers, and professional practitioners.

Natural History Museum

The Museum is a world-class visitor attraction and leading science research centre. The museum cares for more than 80 million specimens spanning billions of years and welcomes more than five million visitors annually.

DesignShare

DesignShare is the central address for the very best in educational facilities and their impact on the learning process. DesignShare provides an invaluable service as a facilitator of ideas and resources about best practices and innovation in schools from early childhood through the university level.

Microsoft Life

To get to Microsoft's most unexpected new meeting space, embark on a leisurely outdoor stroll up a planked, accessible switchback ramp. At the top, a secure wooden gate swings open to reveal a deck suspended by timber beams and cables. A minty pine perfume infuses the air. Two angled cedar awnings jut out from tree trunks, protecting employees from the elements.

Further reading

Room for learning: meet the classroom of the future, here and now.

21st century learning spaces

The Third Teacher Book

Design for the Changing Educational Landscape

Re-imagining Learning Spaces to inspire contemporary learning – Part One: Models for Change

Dr. David Thornburg

Campfires, Caves and Watering Holes

David Thornburg on the Evolving Classroom (Big Thinkers Series)

21st Century Learning Space Design

Learning spaces – Different spaces and their purposes

Is this Finnish school the perfect design?

The traditional office is dead. Here's why

Leading with Learning Spaces

Re-imagining Learning Spaces to inspire contemporary learning

21st Century Learning Space Design