INNOVATIVE LEARNING ENVIRONMENTS / OVERVIEW

ILE and Learning

the education hub

What should I know when designing and developing an ILE?

There is no one 'best' form or design for an Innovative Learning Environment (ILE). The best ILE emerge from a strong vision for learning, developed from a close understanding of the nature of learning Although spatial design is important, and can enable and even encourage some practices over others, developing an ILE is not simply about designing spaces. Improving outcomes for students, particularly more inclusive and equitable outcomes, requires that both practice and space change.

Developing an ILE requires consideration of the learning whole as well as the individual elements that can be changed to support desired teaching and learning practices. Research conducted by the OECD and others has a lot to say about what is known about good learning: it is active and reflective, personalised and driven by learner-centred pedagogies. Many discussions and enactments of ILE focus on these new understandings about learning and the competencies required for modern day society. Some also emphasise knowledge and respect of cultural values – that is, innovation can also be used to preserve cultural knowledge.

What the research tells us about learning

Understanding learning and applying that understanding to the planning and design of an ILE are crucial for advancing learning achievement. The agenda for learning has radically changed from that for which the first educational institutions were designed. When it was considered possible to predefine the knowledge needed to meet students' requirements for operating in society, then it was clear that developing curriculum progressions, and organising children in groups and sitting them down in front of a teacher who imparted that knowledge in order, was an efficient system. As perspectives on what counts as useful knowledge are changing, so too must institutional arrangements be redesigned.

Today, education is no longer primarily about acquiring and memorising information, because information can be easily retrieved from different places, including the internet. The knowledge and skills that we can most easily teach and test are also the very things that can be easily digitised and automated. Today, it is less important to have information stored in your head, and more important to know what to do with information. While knowledge is critically important, it is argued that students today need to develop a strong sense of identity and the ability to be self-reliant, critical, creative, and collaborative team players. Education has to be more focused on gaining skills, capacities and competencies in areas such as creativity, problem-solving, critical thinking, communication and collaboration rather than the acquisition of a prescribed set of knowledge. What is more, knowledge is understood not as something that is developed and known by experts and transferred to students, but as something constructed through the interactions between students' flows of understanding of different and related concepts, and developed in response to specific problems. Learning is this knowledge construction, and this means that the central goals of education relate to developing skill in the processes of learning, or the execution of various learning functions.

In addition, while learning is always active, neuroscience shows there to be huge variability in the way that students learn. Some students will prefer to read and reflect, others will need to draw diagrams and build models, others need to think aloud or talk their thinking through with others. Every person has different needs and preferences for learning, and will learn more and learn it faster if those needs and preferences can be met. Researchers including the OECD and NZCER have summarised a range of important principles for teaching based on the most recent findings about how people learn. They are:

- Make learning central to teaching and rethink students' and teachers' roles
- Make learning social and collaborative
- Tune in to students' emotions and motivations
- Personalise learning by co-constructing curriculum
- Ensure learning is demanding for each student
- Use formative assessment focused on competencies rather than knowledge
- Encourage horizontal connectedness across learning activities and subjects
- Teach for diversity
- Use knowledge to develop learning capacity

These principles depart significantly from conventional schooling, in which learning is seen as a private activity, cognitive development is prioritised over emotional development, differentiation is made for groups rather than individuals, knowledge is segmented into traditional subjects, and assessment focuses on easily measured reproductions of knowledge. The organisation and dynamics between people, content, resources, pedagogy and time are traditionally focused in the single teacher, separated classrooms, standardised timetables, and traditional transmission approaches to teaching, and are obstacles for ideas such as personalised learning.

Designing an ILE involves 'unbundling' some of the key assumptions of education. It involves loosening ideas about how education is structured, in terms of concepts such as 'teacher', 'school', and 'class' as well as the scope and sequence of what students are expected to learn and methods in which they do so. Change can therefore focus on regrouping teachers, regrouping students, rescheduling, and rethinking pedagogical approaches and their combinations. The development of an ILE can include innovations related to:

People

- Might community members, business experts, researchers, or students themselves become teachers?
- Might students from different sites or of different ages be brought together through technology?
- What can support students to connect and collaborate with other partners and networks?
- How might groups depart from the single teacher/ whole-class model?
- Could single-age classes/groups be rethought, or the size of classes and groupings within them?

Content and resources

- Might emphasis be given to a specific interdisciplinary theme, such as sustainability?
- Which key concepts could integrate a variety of interdisciplinary knowledge, and be explored through student inquiry and project work?
- Which community facilities could be used?
- Can resources be innovated through digital resources as well as new learning spaces and facilities?
- How might social media be used?
- How will students be expected to connect with content and resources in new ways?

Pedagogy and evaluation

- How might pedagogy depart from teacher-centred, front-of-the-class teaching?
- Might assessment focus on diverse competencies rather than discrete items of knowledge?
- How might assessment and pedagogy be personalised?
- What kinds of virtual learning can be incorporated to broaden experience and information sources?

Time and organisation

- How might time be organised other than the standard lesson time unit?
- Could timetables be personalised?

Where to start when designing or developing an ILE

The literature suggests that it is important to work towards all the principles identified for effective learning listed above rather than a selected few. However, trying to cover everything at once might be overwhelming and result in a less focused effort. Choices must be made to ensure focus but should be seen within the wider picture of the other principles, and narrow goal setting should be avoided as it blinkers wider innovation. Working on one or two principles, such as emotions and engagement, or on personalisation and formative feedback, can provide the channel through which to drive the others. It can also be better to integrate new approaches and technologies with old ones, which tends to minimise resistance. However, new ideas and practices can often be developed which, while innovative, fail to dislodge conventional ideas, practices, structures and routines. Existing institutional factors, such as rigid curricula or assessment methods, can cause innovations to conform to the shape of the existing organisation, to the detriment of their effectiveness.

The transformation of learning environments requires a well thought through approach, and particularly a clear and collectively agreed vision and philosophy that can guide the school through the stages of transformation. It is worth spending time (perhaps six months or more) profiling the current learning environment, to reflect on how well the environment supports the principles of learning and their relation to student achievement. Change is supported when schools focus on becoming formative organisations, constantly seeking information-rich feedback, translating it into meaningful, actionable knowledge, and acting upon it through revised strategies and innovation. This might also mean developing new metrics for evaluation and assessment which reflect the aims of the learning environment and which extend outside of the school setting. Change is also supported when schools seek to develop strong partnerships with others which can enhance the resources and strategies open to schools and students. Decision making should be a social and interactive activity shared between many, including diverse, external partners, and students themselves.

Important questions to consider include:

- Does your current teaching practice reflect your beliefs about learning?
- How well are approaches to learning personalised?
- How well are pedagogies and assessment focused on educating for diverse thinking?
- How well are students building learning capacity?
- What are the roles and responsibilities of teachers and students? How well is student agency promoted?
- How many partnerships with your community are developed and maintained, and what kinds of opportunities do they present?
- How well does the environment cater for a wide variety of needs and support students to learn in their preferred ways?
- How emotionally supportive is the learning environment?
- How are these practices combined to develop a coherent set of ideas about education?

Once a change is made, it is essential to evaluate how the strategy is working and what resources might be developed to further strengthen and sustain the innovation. This ‘serial design’ process, the continuous reflection on what is working and what is not, and how to improve, is important so that planning, implementation and evolution of the learning environment is ongoing. The results of the implementation of an innovation may not be immediately obvious, however, as innovation is often accompanied by a dip at first while it embeds in practice.

Design thinking is crucial to the development of learning environments. Design thinking emphasises seeing, interpreting and understanding problem solving and design from the perspective of the users, that is, the students. This means that students should be invited into the design process early on, and perhaps supported to discover what they know and experience about an existing learning environment. Design thinking assumes iterative processes of problem-focusing, developing and testing innovations, critique and redesign, and is collaborative work, with diverse perspectives, talents, backgrounds and dispositions within a team essential. This involves ensuring people with different perspectives and contributions to make are held in a productive relationship long enough to produce genuinely innovative approaches. It requires a powerful learning culture and strong social networks. Powerful innovation is hindered, however, when teachers want to try to solve all their perceived problems at the same time, which may lead to complex and muddled solutions. Instead, designs should be clear, transparent, and clearly linked to theory. Simple theories and simple designs can always be made more complex.

There is a strong link between engaging students and staff with the design of environments, and their eventual impact on behaviour, well-being and achievement. It is important to make sure that participation is not a veiled form of manipulation, nor merely informing and consulting, but genuine participation and control. Having ownership of the change triggers positive attitudes and motivation which helps to maximise the impact of the change. An innovation developed in partnership with communities is also likely to be individualised, local and organic. The most successful are likely to be interim solutions that are flexible and can be adapted for new cohorts of students and teachers, as well as new curriculum demands and other challenges.

Tips for successful innovation:

- Develop clear beliefs about learning that are shared across classrooms. Take time to discuss and reflect on what ‘learning’ means and looks like, and how best to make that happen for students and teachers every day. Use small group meetings to share curated information and research.
- Develop and maintain links with powerful influencers that have strong experiences of changing practice, using social media, social events, conferences, research, readings and meetings.
- Embrace constant change and evolution and make researching and developing one’s own practice a key activity for teachers and students. Put innovation and inquiry at the core of the life of the classroom - use evidence informed and collaborative inquiry as a form of meaningful professional learning for teachers. Reflect on how to make new practices and systems more sustainable. Share knowledge about pedagogy and practice in open-ended frameworks in which knowledge is transparent and collaborative.
- Persist in building and maintaining networks, finding fresh sources of energy and sustaining effort and imagination. Develop community connections through work experience programmes and whole-school initiatives like Enviroschools which encourage community partners. Develop ‘school within school’ or ‘whānau group’ learning communities of the equivalent of about five primary/secondary classes, which have been found to lead to higher and more equally distributed achievement.
- Develop new stories of learning, teaching and schooling – find resources and stories that challenge the traditional narrative.
- Get support from the wider public - spend time educating communities about how education has changed to help manage their expectations.
- Evaluate spaces through using the principles of universal design. These principles include that space should be equitable, in terms of being useful to people with different abilities, flexible for various uses, and simple and intuitive to use. Use the spatial layout of a learning environment as a conduit for the convergence of contemporary pedagogies and technology.
- Evaluate the use of time. This is important as often the authority of the timetable and scheduling can override pedagogical intent and hinder students’ self-directed learning trajectories.

Positive learning environment checklist	✔
High levels of engagement, active student agency and voice	
High levels of professional discussion and collaboration amongst teachers and other educators and partners	
Everyone involved in learning leadership, particularly innovation and evaluation	
Rich diversity of pedagogical practices	
Personalisation and formative assessment highly visible	
Interdisciplinary curriculum content integrated around key concepts	
A variety of sites used for learning beyond the traditional classroom	
Widespread use of ICT and social media for research and exchange related to learning projects	
Reflection and evaluative thinking using evidence prevalent	
Partnerships with families, communities, cultural and educational institutions, and businesses integral to the learning environment.	
Assessment metrics and accountability measures aligned with the aims of learning environments and focused on characteristics of mastery and deep learning, including understanding, application, perseverance, curiosity, creativity and teamwork.	

References

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