Next generation [digital] learning environments: present and future

Executive summary

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Co-design 2016 saw the launch of the Next Generation Digital Learning Environments challenge asking:

» What would an environment do for staff and students?
» What kind of learning experiences would an environment need to support?
» What learning and teaching practices aren’t currently supported in environments?

The changing nature of student and staff behaviours was something highlighted by many commentators; technology-led pedagogies, and emphasis on system features was another; and of course many people in the sector were commenting on the rise of analytics and the role that data may play in future systems. This retrospective of Jisc’s co-design work is therefore focused on technology and practice now, and what is emerging. It aims to inform the sector and provide a base from which new developments may emerge.

In order to create an accessible document, we have reduced the discussions to seven broad themes:

» Current good practice
» Large enterprise approaches
» From institution to individual
» Self-starter and individual approaches
» Analytics and learning environments
» Emergent models
» Disruptive approaches in online UX futures

However, the themes are not in silos and many issues are crosscutting. The co-design process was driven by the community, they centred the discussion on what could learning environments be, and what the motivations are for those trends. The community did not offer large discussions around infrastructure, interoperability and standards, or in-depth technical specifications, and therefore this report does not provide a blueprint to develop a system, rather it provides discussion points upon which to build the conversations needed before embarking on technical builds.

As Technology Enhanced Learning continues to develop, it is clear that some form of digital learning environment will remain core to institutional practices, the levels of integration, features and porosity will continue to change, driven, and potentially driving the behavioural shifts we see in staff and students.

The role of analytics, in monitoring of students, and possibly staff in the future is clearly something that both vendors and institutions are investing in, and the sector should be mindful of how, where and why the data is used. Additionally, the emergence of systems that use analytics to provide adaptive learning pathways, and automated “chat” style responses will need to be evaluated deployed appropriately.

Jisc’s co-design challenge brought to the surface many issues, both cultural and technological. This report and the associated work is made possible by the commitment of the community that engaged with the challenge for which we are grateful.

“Next Generation Digital Learning Environments As Technology Enhanced Learning continues to develop, it is clear that some form of digital learning environment will remain core to institutional practices, the levels of integration, features and porosity will continue to change, driven, and potentially driving the behavioural shifts we see in staff and students.”

Lawrie Phipps, Jisc
Policy, competition and the marketisation of learning open up the sector to the influence of platforms and practices that argue they have all the answers. The important question for all of us who lead educational change, who teach classes both face-to-face and online, who have skin in the game of the future of higher and further education is: what kind of experience do we want for our students?

Peter Bryant, London School of Economics

Over time, and as adoption has increased, the VLE has become integrated into many institutional systems.

The market is dominated by very few suppliers. Blackboard and Moodle are offered at 49% and 53% of institutions respectively.

Innovation with new Edtech, such as augmented reality, social media personalisation and gamification tends to occur outside of the “mission critical” VLE.

Innovation is driven by the user requesting features, an evolutionary process rather than revolutionary.

Most Universities and Colleges use virtual learning environments (VLEs). They are adept at using them, eliciting good value and providing a platform for staff to develop their digital teaching skills.
The big commercial players in the online and software world such as Facebook, Google, Microsoft, Amazon and Apple could become huge players in the future of learning environments, and there have already been moves made in this direction such as Google Classroom, Microsoft Teams and Amazon’s purchase of TenMarks.

Facebook, Google, Microsoft, Amazon and Apple are all well placed to provide learning environments.

Will companies be able to market and target content at users?

The diverse set of tools and functions found on platforms such as Facebook and Google may not be labelled as a learning environment, but it is easy to imagine them being repurposed and repackaged as such.

What data do large companies have access to from both staff and students?

The development of safe social spaces is at the heart of building meaningful and inclusive learning environments. Online spaces that support learner community - building and facilitation of deep and trusting relationships are necessary for a feeling of safety in the presence of peers. In these learning spaces students can engage with others in new and playful ways, take risks and learn from failure, build resilience and confidence, be creative, and learn to work with others to solve problems in truly innovative ways.

Nicola Whitton, Manchester Metropolitan University
We see a social network model as having potential to enable cross-discipline communication, community-forming, sometimes unexpected exploration and discoverability but to do so still within the ethos and rules of a university. We don’t propose replacing the VLE, but augmenting it with a new type of academic social network, aimed at education rather than business or personal social life.

Steve Rowett, University College London
Many universities and colleges are starting to explore ways of collecting and analysing data to inform or influence learning and teaching. A large amount of data already exists and a variety of ways of using it are being implemented. Some describe analytics as the “next big thing”, but does that assume that systems and environments continue to develop as they have done for recent years?

Who owns the data?

Are aspirations for analytics supported by current learning environments?

Will alternative learning environments disrupt or enhance the current analytics work?

With the increased use of social media will important analytics be lost?

How can learning outside of institutional systems, such as in social media, be integrated into analytics?
The remarkable range of technological developments and appetite to interact both with a growing diverse student voice and diverse approaches to learning are evident in every aspect of cyberspace and our world of analogue. The next generation of digital learning environments must reach deeper and further into supporting deprived areas of the social spectrum. New cultures of collaboration and participation need to engage, connect knowledge flow... and enable increased diversity of lifestyles and the richness they bring to learning and knowledge acquisition.

Damian Chapman, University of West London

Emergent models

Shifting from content delivery, to engagement and conversation

Building communities of learning, and teaching, in rich digital environments

Collaboration and connection is key to students’ learning.

A move from fixed digitised content to interactive and collaborative student engagement.

Blended learning, technology-enhanced learning and other terms in common usage suggest there is conceptually a move away from static digitised content to something more engaging and intuitive.

Disruptive approaches in online UX futures

Learning analytics approaches have significant potential, but institutions need to move past the dominant focus on retention use cases and data dashboards to realise this. Analytics need to take into consideration the context in which learning is occurring, and better support all students.

Anne-Marie Scott, The University of Edinburgh

From the perspective on online learning it is where the experience of interaction is achieved through beautifully crafted functional interface design that enhances engagement in learning.

Creating systems that people want to use, and enjoy the experience of using them.

Enhanced emphasis on the user experience (UX) and understanding the needs of learners.

From the perspective on online learning it is where the experience of interaction is achieved through beautifully crafted functional interface design that enhances engagement in learning.

A move from fixed digitised content to interactive and collaborative student engagement.

The use of machine learning in the education sector is making personal learning environments smarter as they advance the delivery of personalised, adaptive and contextualised services to students. This marks the start of an exciting period where schools, colleges and universities in partnership with technology companies will take their first steps towards developing a personal digital teacher for every lifelong learner.

Aftab Hussain, Bolton College

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Further information and resources

To find out more about this report contact your account manager jisc.ac.uk/contact/your-account-manager

The full report can be found at: https://ji.sc/NDGLE_report

Through our intelligent Campus project, Jisc is working on ways to improve the student experience by capturing and analysing the many kinds of data that can be collected across university and college campuses.

jisc.ac.uk/rd/projects/intelligent-campus