

Learning labs — New types of laboratories have been emerging across Europe, breaking away from traditional academic practice and encouraging a hands-on, transdisciplinary approach to learning. Is this the model of future education?
Words by *Veronica Simpson*



Universities are no longer the gatekeepers to knowledge.

With access to unlimited information online, why would anyone sign up for a geographically inconvenient, often overpriced, possibly outdated and narrow, subject-specific university education when they could learn live in a transdisciplinary laboratory?

The lab is increasingly where it's at for the curious creative. Some have been around for a decade or more, others are newly hatched, but all of the different models we are highlighting on these pages offer a flexibility and focus that accommodate individual preferences and reflect the requirements of the real world, rather than the bureaucratic, precedent-based practices of academia.

The modern lab-style education can concentrate on questions that need answering, and take a critical position on the cultural, social and environmental issues of the day. Contrast this with contemporary institutional practice in the UK and USA in particular, where education is increasingly hamstrung by the need to answer questions that only their funding agencies and sponsors want to ask. Labs can take up that moral position – that desire for personal and social growth, for civic advancement and enlightenment – which many of our institutions seem to have forgotten was once their guiding principle.

Jan Boelen, one of the leaders of the groundbreaking Atelier Luma in Arles – and also curator of this year's education-focused Istanbul Biennale (see page 48) – differentiates today's learning lab from the spaces for making, the 'fab labs' that started proliferating across the globe a few years back. 'Ten years ago, I was also really fascinated by these fab labs and their ideas,' says Boelen. 'But in fact, they are not questioning the existing system. They are very affirmative. [At Atelier Luma] we are questioning the networks and the relations between the producers, the manufacturers and so on. We are breaking and disrupting these traditional approaches.'

With the right kind of funding the modern lab has the freedom to invite whatever participants are of most benefit to their research, opening up access way beyond anything universities can aspire to – be they farmers, weavers, industrialists or tech specialists. They can also address bigger issues in ways that can bring tangible benefits to a region or industry. 'People need to start to look again at the streams and the cycles that are around them,' adds Boelen. 'Every region has a waste stream or a certain product or mineral that you can start building a certain economy around. We used to think that materials are abundant and can be used and applied everywhere around the world – but they are not abundant. We believed that information was scarce. Information now is abundant. That's why the economy is in such imbalance – we are in a kind of crisis.'

The worlds of design, art, technology and science have been cross-fertilising with increasingly fascinating results over the past decade. The learning lab represents a shift for these initiatives from the realms of the arty and speculative to the pragmatic and propositional. Design is the key to unlocking the potential in this educational evolution. As Boelen says: 'If you build a wall, you make things impossible. If you build a bridge, you make things possible.'

**FoAM
Brussels,
Belgium
and across
Europe**

FoAM was founded in Brussels by Nik Gaffney and Maja Kuzmanovic nearly 20 years ago as a transdisciplinary network 'at the interstices of art, science, nature and everyday life'. It was initially funded as an arts laboratory by the Flemish Ministry of Culture, 'but we recently changed direction', says Kuzmanovic. 'The nature of this funding wasn't suitable any more. Instead of supporting experimental organisations, there is now more pressure to institutionalise. This radical bureaucratisation doesn't fit our ethos.'

FoAM's focus has always been flexible and international, working with partner organisations and institutions (such as Central Saint Martins) interested in asking critical questions about how science, technology, art



and design disciplines could be harnessed to imagine different, more sustainable futures. FoAM's activities are now dispersed across five studios: FoAM Brussels, FoAM Amsterdam, FoAM Nordica (Stockholm and Gothenburg), FoAM Kernow (Penryn, Cornwall) and FoAM Earth (Tallinn).

Each studio's activities reflect the skills and interests of the individuals running them. The UK studio is working with new technologies and citizen science, collaborating with organisations like the Eden Project and the British Science Association. Recently it started a series of workshops called AccessLab, pairing scientists with citizens from different backgrounds (for example artists, designers, journalists and policymakers) to help people

find reliable information on issues relevant to them, using skills from scientific research.

With some 20 core members spread around FoAM studios, each one draws on a network of between 50 and 100 people, depending on topics of interest and available resources. 'Such flexibility makes the organisation more resilient in these uncertain times; low overheads and no giant infrastructure,' says Kuzmanovic. The network could be seen as a virtual faculty of hundreds of teachers, programme directors and associates; it is already something of a mini-university. 'We have talked about how what we do could be formalised in some way,' says Kuzmanovic, 'become like an alternative university or academy. Most of the work we are doing is outside of the academic context, but we work with universities as partners. This allows us to remain light on our feet, flexible and adaptable. Even if our workshop programmes aren't part of formal education, they are focused on people learning stuff – often from each other.'

FoAM studios are currently funded on a grant basis, through commissions and partnerships, both local and international. For instance, the Gulbenkian Foundation recently funded FoAM to apply its 'lab approach' to the UK marine sector. The Marine CoLABoration brought together nine NGOs involved in ocean conservation to explore how human values and the value of the ocean can be articulated to intensify conservation. FoAM designed and facilitated the Lab, using co-creative processes to help people work 'more systemically, together.'

The motto that summarises FoAM's ethos best, says Kuzmanovic, is: 'Grow your own worlds. It's about growing things together, creating worlds rather than artworks. It's about supporting a hosting culture where you are not just doing stuff together but you are supporting the people who are there to grow themselves.'

Outcomes of FoAM's workshops vary. Sometimes prototypes emerge, at others philosophical frameworks. There is a constant drive to refine and improve the toolkits and techniques to make FoAM's processes more adaptable and accessible. And networks are constantly evolving and enriching. >



1 (previous page) 'Tangible mathematics' experiments at the Mathematical Arts workshop in FoAM Brussels

2 FoAM workshops 'are focused on people learning stuff – often from each other,' says Kuzmanovic

3 A Viruscraft workshop at FoAM in Cornwall

4 The former FoAM Brussels space in an old mill, where the organisation started





CIID
Copenhagen, Denmark

The Copenhagen Institute for Interaction Design (CIID) is one of Scandinavia's best-kept design secrets. Borne of the groundbreaking Interaction Design Institute Ivrea – set up by Olivetti to explore ways in which scientists, artists and designers could 'humanise technology' – it developed when six people from Ivrea decided to up sticks after the research initiative petered out around 2005, and take their networks and knowledge to Copenhagen. Two of them, Alie Rose and Simona Maschi, are now running CIID, a unique place that hosts education, research, training and incubation platforms. One of these is the Interaction Design Programme (IDP) that recruits talent from multiple disciplines and hothouses them in the art of interaction design over the course of one intense year.

The course, in scope and rigour, is equivalent to a master's degree. The curriculum, focused on peer-to-peer learning, has literally been grown in-house. It took two years for Rose and Maschi to raise funding for a pilot

of the IDP. And in 2008, having compiled their dream team of potential teachers from the leading companies working across design and tech, they invited applications from potential students. 'We had 150 applicants for a course that didn't even exist,' says Rose. 'We chose 21 people who came from all over the world to help prototype a curriculum with us. And what we have today is almost the same structure as we had in the beginning. The content has evolved, but the structure and teaching philosophy of learning-by-doing has remained.'

Students are drawn from many different disciplines: graphics, product and industrial design feature strongly, but with growing representation from science, humanities, business and economics. Most unusually, for an educational entity, students are selected not just for their own talent but for their collaborative potential. 'We don't just select amazing people but people who work really well together,' says Rose. 'To make a peer-to-peer learning platform work, you need to share.'

The curriculum runs from January to

December. Split into three sections, the training first involves a Foundation period where students get up to speed with a range of digital skills, from people-centred research to physical computing. The second part, Investigations, gets them testing out these skills with user interfaces, learning about the importance of content as much as delivery. The final part throws students in at the deep end, devising and refining their own solo project, on which they are assessed. Towards the end of the year, the students get to work in partnership with sponsors (IKEA, Volvo, Mozilla, Google) in the form of an industry project.

Such a bespoke design education comes at a price: around £25,000 a year. But its alumni are snapped up by some of the leading global firms, from Google to IDEO, OgilvyOne to YouTube. 'After our students graduate we have almost 100% employment in the field,' explains Rose. 'They are moving into industry, into agencies. Increasingly we see people moving into startups, as well as academia.'

'We are not academic. We don't grade people. We do tell people if we consider their final project to be a pass or fail, or with honours, but we tell them to their face and we don't share that information around.'

In line with CIID's original vision, they launched the CIID 'nest', an incubator space, in 2014. 'So many good ideas come out of our school we felt obliged to have a platform that could support these ideas,' says Rose. Since 2014, more than 17 different companies have emerged.

More recently, CIID formed a partnership with the UN, running a summer school at UN City in Copenhagen, using the Sustainable Development Goals as inspiration. This year's took the form of 20 different one-week workshops over a period of five weeks. The summer school also ventured to Costa Rica this year, and there are plans to go to India, Barcelona and Istanbul, to take the learning platform to people in a different context.

'The way we remain this agile is by being free,' says Rose. >

5 For Bjørn Karmann, a student on CIID's 2017 Interaction Design Programme, the coaching, peer-to-peer learning and interaction design training resulted in Objectifier, a series of tools that allows people to train the 'smart' objects in their house to respond to their unique behaviours and preferences

Atelier Luma is a crucible of research and making at the core of Maja Hoffman's ambitious arts campus – Luma Arles – in the Camargue region. A few years ago, this wealthy philanthropist and patron of the arts bought up the former regional train depot, and is part-way through transforming its sprawling sheds into spaces for exhibitions, residencies and collaborations across the arts, from dance to theatre to architecture; its final phase will see a trademark, crinkly building by Frank Gehry complete in 2019.

Atelier Luma was first scoped out in 2016 and then launched officially in summer 2017, as a place to foment new ideas about how the resources of the region – environmental, material, intellectual – can best be harnessed through collaborative projects between scientists, technologists, environmentalists, artists and designers. Here, in a hangar-like shed where trains used to be repaired, The Mécanique, researchers have been looking, for example, at the material possibilities of salt (which the region exports) or wild reeds and even sunflower stalks as new biomaterial, or turning the dense, stringy algae that proliferates in the marshy flatlands into a bio-laminate. Research is focused around six themes developed by Atelier co-founders Jan Boelen and Henriette Waal: Waste Matters,



Producing (in) the City, Healthy Mobility, Next Hospitality, Food Circle and Circular Education. Boelen says: 'It's not just a laboratory of ideas and materials, but it is becoming a place where things can be realised.'

Funded by Hoffman, the Atelier enjoys a luxury unheard of in today's increasingly sponsor-centric world of academia: to focus the Atelier's attentions where they are needed most; in this case, enriching a regional economy too heavily dependent on tourism. In doing so, the Atelier can bring in whichever stakeholders are of most interest – from struggling farmers or local producers, to industry and manufacturing – in order to both identify the real problems and realise useful new solutions. Working with industry (arguably, those who exploit and pollute the environment) Boelen says he has been accused of 'dancing with the devil... But if you don't use the tools of industry we will never be able to bypass the system itself. So we have to use the power of the system to overcome its faults'.

Educating and inspiring the local community is a fundamental part of the Atelier's mission, to which end many schools



and community groups have visited, to see 3D printing at work, learn about robotics, as well as about algae and the riches on their doorstep. The Atelier also functions as incubator space, offering studios for local creatives.

Only one year after launching, the Atelier's core staff has grown to 17, who work alongside associates on a project-by-project basis. They will soon be enjoying the completed interior framework, set within the 800 sq m hall, by Rotterdam-based Ooze Architects. An innovative expression of spatial strategy, it is more like a piece of adaptable furniture,

6-9 Workshops, laboratories and incubator spaces (including 3D printing and robotics) take place in Atelier Luma's adaptable 800 sq m hall



facilitating both enclosed workshops and open laboratories, office space and an auditorium, using steel scaffolding poles, plywood (for the mezzanine office floor, plus the lab auditorium/stair leading up to it), insulated wall panels (for noisy workshops, called 'cabins') and translucent polycarbonate. Ooze co-founder Eva Pfannes says: 'Normally people go to a museum to look at artworks, but here people go to look at processes and people working, and action... So the structure serves different purposes: it becomes a tool to work together and eventually produce together.' >





Tucked away in a 19th-century Madrid slaughterhouse – which was stripped down a few years ago and reborn as a government-run space for the creative industries – Factoria Cultural (the Culture Factory) is probably the most densely packed and (arguably) hard working of all the creative businesses sited within its vast brick spaces. There are 120 individuals crammed into its award-winning, multifunctional and low-budget interior, ingeniously wrought from wood and plastic by Madrid-based architect Angel Borrego.

Launched in 2014 by Sandra Stuyck, Lucia Ybarra, Rosina Gómez-Baeza and Antonio Bazán, the Factoria Cultural (FC) is both incubator space and school. Its mission is to hothouse the talents of entrepreneurs aged 20-50 in a combination of six months of on-site training, collaborating and mentoring, while also offering shorter, highly focused courses to the wider creative community.

There are two open calls a year; the themes and numbers are dictated by the public and private sponsors that fund each individual round. A typical open call may be for 60 individuals or practices, working across design, fashion, cultural tourism, architecture and new media. This autumn there is a particular focus on food, looking at distribution, transportation and production, through the lens of urban sustainability. The successful applicants are given desk space at the FC, and three months of classes, which might cover everything from pitch development to digital marketing, supplemented with one-to-one mentoring from relevant industry figures. For the second half of the programme, a project is set to be completed by the end of the six months, when all the ‘viveristas’,

as the FC entrepreneurs are dubbed, have to pitch their ideas to a roomful of professionals from the relevant sectors.

To bring in extra funds for the incubator programme, there is a year-round Factoria Escuela (school), with a growing faculty of diverse industry specialists who offer courses of anything between four hours to 20 hours. This aspect of the FC is being expanded this September with a new ‘masters’ programme, albeit with study concentrated into five months rather than the usual year or two (two days a week, it is designed to run concurrently with a day job). There are four ‘masters’ topics for this initial launch, including Creativity in the Professional Field (how to apply design thinking and methodologies to your job), and Digital Transformation (adapting existing businesses to the digital world).

FC is now in expansion mode. Last year it opened up an outpost in Murcia, covering the same broad spectrum of design fields as the Madrid original. Game design has become a major focus in FC’s evolution – and Playstation is a huge supporter. Now three other FC outposts are launching focused on game design: one has launched in Seville, one in Malaga, and a new one is due to open in Hospitalet, just outside Barcelona.

The outcomes for those who pass through the FC vary, from emerging with a honed, market-ready project, to refining and improving businesses to meet the requirements of today’s digital consumers. But the networking potential is possibly uppermost – both in the alliances that might arise between viveristas, and the job offers that have often arisen from the many consultants and businesses that offer the Factoria their expertise. ■

10 (previous spread) **Factoria Cultural occupies a former 19th-century slaughterhouse in Madrid**

11 **FC’s mission is to hothouse the talents of entrepreneurs aged 20-50 working across architecture, design, fashion, tourism and new media**

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