

# Dundee and Angus College

## Inspiring exploration, innovation and creativity with 21st century technology (December 2016)

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### Summary

The Learning Lab at **Dundee and Angus College** is an innovative 'maker space' where staff and learners come together with expert support to create, play, explore and innovate with the latest technologies. Learners on courses across the curriculum – art and design, computing, care, construction, business and marketing to name but a few – are finding inspiration in this hands-on, technology-rich environment. And with the growth in the creative media industries in the area, the Learning Lab is giving a boost to learners' employability skills as well as their imaginations.

### Organisation

Dundee and Angus College came into existence in November 2013 with the merger of Dundee College, a community college in Angus and a number of smaller centres across the region. The college, which delivers a full range of further education (FE) and higher education (HE) programmes between levels 1-10 on the Scottish Credit and Qualifications Framework, aims to align its curricula with the local and regional economy. Providing creative learning spaces and facilities that are dynamic, inviting and inspire success is part of the college's core mission.

### The challenge

Inspiring young people to be passionate about learning is not always easy, but Dundee and Angus College has shown that a safe, neutral space which encourages learning through experimentation and play can make a difference. Once they have had the experience, learners can't wait to return:

*"I've been down to the Learning Lab about four times and every group I've used it with has just been in awe of the technology."*

Business lecturer, Dundee and Angus College

## The solution

The Learning Lab came into being when a funding opportunity coincided with a space becoming available in the college's new business and enterprise incubator space for start-up businesses. The grant, which came from the Scottish Library and Information Council (SLIC), enabled the purchase of cutting-edge technologies; match funding by the college's senior management team then covered the cost of furnishing and staffing the facility.

Launched in November 2015, the Learning Lab was introduced to staff and learners as a space for 21<sup>st</sup> century learning experiences. Teachers were invited to visit in groups for continuing professional development (CPD) or with their classes to get hands-on experience with up-to-the-minute technologies. Demand proved strong; in its first eight months, the Lab hosted 43 team-based CPD sessions, 19 set CPD events and nine twilight sessions in addition to seven or eight drop-in sessions each week. In total, this amounted to over 1200 hours of input from the learning technology team in less than a year.

For hard-pressed teaching staff, the Learning Lab has become a golden opportunity to develop confidence and expertise with digital technology while exploring innovative learning and teaching solutions. The choice is impressive: virtual and augmented reality, 3-D printing, 3-D capture, programmable cars, Minecraft, gesture control and video capture tools vie for attention in the Lab alongside time lapse cameras, Xbox gaming and drones.

During 2016-2017, the focus has turned to learner-staff partnerships. Drop-in times for learners to visit independently are advertised college wide to encourage all learners to experiment and create with technology. In addition, special interest groups enable learners and staff to work together, improving their team-working, problem-solving and employability skills as well as their capability with digital technology. All that participants need to bring along is their interest and willingness to learn:

*"We have the technology, but we want to pair this up with your skills, enthusiasm and expertise to use the technology to its full potential and provide you with an opportunity to develop your skills with our support."*

Joy Howat, team leader for learning technologies, Dundee and Angus College

Outcomes are showcased through blogs, the college's annual Learning Festival and through the enthusiastic response of participants:

*"It was very, very cool to have a chance to try out new technology. Love to see more!"*

Learner, Dundee and Angus College

## Impact

While only a year old, the Learning Lab has whetted an appetite for learning at all levels across the curriculum. Success stories range from learners with additional support needs to learners on fashion, computing, construction, building and surveying, art and design and creative media courses. Examples of their work include:

- A time lapse film of an annual fashion show organised by learners on a retail course to provide an insight into the collaborative working required in the fashion industry
- A drone used by construction and surveying learners to undertake real-world surveys of historic buildings
- Augmented reality 'living' workbooks and posters reinforcing knowledge and understanding through 2-D images
- Virtual reality explorations of the human body
- Christmas cards made in Microsoft® Publisher® by supported education learners with personal messages in augmented reality

And while the emphasis is very much on fun and experimentation, this does not preclude improving learners' digital capabilities or enhancing their essential skills:

*"Our Pro-bots (programmable cars) have been used in core skills and introduction to computing to engage learners in problem solving and logical skills whilst providing innovative ways in which to deliver and develop numeracy and basic programming skills."*

Joy Howat, Dundee and Angus College

## Outcomes

With the range of technologies available, it's not hard to see why Dundee and Angus learners have a head start in employment in the local area, where industries such as virtual games, computer-based art and design and animation have become established. Demonstrations of technologies gaining ground in the workplace, such as augmented reality, have also opened learners' eyes to careers they had not thought of – for example, in computer-based art and design, marketing and tourism.

*"It was something the students had never envisaged they would be able to do whilst at college and certainly not straight away."*

Lecturer in computer art and design, Dundee and Angus College



From a business and employability perspective, the Learning Lab has enabled the college to forge links with local primary and secondary schools as well as employers. School link days have brought in as many as 400 pupils to visit the Lab, raising the profile of the college as a leading provider of modern, vocational education in the area. Local tourism enterprises including the Dragon Matrix augmented reality theatre have also offered work experience to students.

Not least among the benefits of the Learning Lab is its impact on classroom learning. Teachers are already reporting improvements in concentration and understanding after a session in the Learning Lab:

*"What I have found is, because they have had a practical element to their learning, because they have had some experience of augmented reality or 3-D printing, when we've gone back to class... they have that practical knowledge to relate back to. It worked fantastically well."*

Lecturer in business, Dundee and Angus College

In summary, the Learning Lab has helped create:

- Enrichment of the curriculum including known 'problem areas'

- Links forged with real-world organisations, businesses and projects
- Enhanced learner employability
- Increased digital confidence and expertise among staff and learners
- A passion for learning at all levels, with the potential for outstanding learner outcomes
- An improved image for FE as the 'go-to place' for creative, modern, interactive learning

## Tips for effective practice

The Learning Lab team's tips for establishing a high-tech space for creative learning and teaching are:

- Identify a space which can be dedicated to exploratory learning with technology; make sure both the room and the technology it holds can be secured when not in use
- Bring staff and learners together to share knowledge and ideas and collaborate in innovative ways, then support them in working with the technology
- Ensure staff or volunteers are available to facilitate use of the space
- Allow users to develop their own digital capabilities and interests
- Ensure the enterprise is inclusive; run lots of sessions, invite groups from across the curriculum, hold open days and provide drop-in opportunities to raise the profile of the space and to demonstrate what can be achieved by learners at all levels
- Get into conversations with as many people as you can. Discuss real-life examples of how innovative technologies are being used in the real world and bring in representatives from industry to highlight employment opportunities
- Don't be afraid of what you don't know. Learn and build on knowledge as you go and learn from others. Build up your own digital capabilities
- Create a learning hub; don't let the technology collect dust! Look for opportunities to work with groups externally as well as internally

*"FE should be the home of vocational, hands-on creativity and imagination."*

Abi Mawhirt, head of people and organisational development, Dundee and Angus College

## Find out more

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**Further information on the technologies featured:**

**Oculus Rift and Gear VR** headsets for virtual reality

**DJI Phantom** drone

**Ultimaker** and **Formlabs 3-D printer**

**Kahoot** and **Nearpod interactive lesson tool** for mobile learning

**Augment** and **Aurasma** for augmented reality

**SketchUp** software for 3-D design

**Structure sensor** for 3-D scanning

**Go-Pro** and **timelapse** camera

**Girpotic 360** camera

**Pro-Bot** programmable cars

**Myo Gesture control bands**