



Scientia Education Investment Fund Grants Final Report

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Learning Hubs - An adaptive, personalised, community centric education model

Art & Design

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1. Executive Summary

Summarise the project, context, priorities addressed, outputs, key findings and recommendations (if relevant)

Project summary

The Learning Hubs concept was conceived to attempt to address the following issues:

- **Students entering courses with a diverse range of ability in required skill sets.** This impeded the class as lecturers would need to help those without the required skills.
- **Inefficiencies with certain skills being taught repeatedly in different courses, or not taught at all.** Examples of this include 5 separate courses across the faculty teaching introductory Photoshop, while rapid prototyping was not being officially taught at all.
- **Studio lecturers are not experts in all skills.** In a creative studio learning environment, there are often multitudes of solutions to a problem, and while the lecturer can guide the creative process, they may not be expert in all the different skills in the creative spectrum. If basic skills were taught outside the studio, the classes could focus on higher order thinking and creative development.
- **Lack of a broader peer community.** Currently students work mainly within their year and discipline cohort, missing opportunities for peer learning from a broader cohort with a range of different skills.

This project aimed to:

- **Establish two learning hubs** that would achieve all of the above, aligned to the analogue (workshops, tools, and physical making) and digital (software, CAD/CAM) areas within the faculty.
- **Establish informal spaces that would support an informal learning community.** The Learning Hubs concept intended to establishment of physical spaces on campus where knowledgeable staff are always present. Students from any year, discipline or course could come together to work on assessments, drop in to get expert help at any time, and continue to develop advanced skills from the support and cross-pollination of ideas of peers and hub staff.
- **Create a learning analytics system** to support, track and advise students on their development of digital and analogue creative skills. This would also enable academics to see where students were at with skill development at any time.

Outputs

Each Learning Hub, Analogue and Digital, form the home for a range of Skills Packages, which provide students the ability to self-evaluate existing skill levels using an online quiz, a face-to-face bootcamp where students could attend to develop basic skills in the area, and an online Leganto collection of online resources available 24/7, specifically curated and organised to support students in developing skills in their own time. This tiered approach was intended to allow students to spend their time where most needed. Outputs of the project are discussed in more detail in the following section. However in summary outputs included:

- **The design and production of 3 skills packages** (798 unique students and 42 staff in pilot):
 - **Adobe Photoshop Skills Package** (629 students and 29 staff)
 - Comprising an online self- evaluation quiz, a 3 hour bootcamp, and an online Leganto resource library for 24/7 self-support
 - Piloted in 6 first year courses across 3 programs
 - Reached 629 students and engaged 29 full time and casual academic staff
 - **Analogue Making Skills Package** (317 students and 13 staff)
 - Comprising an online self- evaluation quiz, and a 3 hour bootcamp
 - Piloted in 2 first year courses across 1 program
 - Reached 317 students and engaged 13 full time and casual academic staff
 - **Adobe Illustrator Skills Package**
 - Comprising an online self- evaluation quiz, a 3 hour bootcamp, and an online Leganto resource library for 24/7 self-support
 - Developed and will be delivered in T1 2020

Completion of the packages earned students a digital badge in the online dashboard which could be seen by them, their lecturers, and professional staff managing our workshops spaces and equipment loans.

Both Photoshop and Analogue making packages were completed and piloted as part of the project in T1 2019. The Illustrator package was designed and produced but not in time to put into operation during the period of the grant funding. It will begin running in T1 2020 with our new intake of first year students into our art and design undergraduate programs.

- **Scoping of 6 additional skills packages for all first year students in the faculty.** The removal of \$41,252 from the project budget by the PVCE in the final months of the project prevented the production of six additional skills packages that had been scoped and fully costed. Because their production involved current academic staff there was no commitment in the budget for external staff or contractors. These packages were to be relied on for all year 1 courses in our three undergraduate programs, and academics had already designed curriculum around the assumption the packages would be produced for 2020. We have now had to work around this as we find alternate funding to scale the project going forward. We do plan on moving forward with the production of these skills packages in 2020 funded by the faculty. The skills packages that were not able to be completed were:
 - Virtual 3D basics
 - Referencing and Citation for artists and designers
 - Camera, Lighting, and Documentation Basics and Documentation
 - Colour Theory
 - Presentation and Communication Skills
 - Laser Cutting and Rapid Prototyping

- **Online dashboard system and analytics tool.** An online dashboard was developed as part of the project to enable staff to build, manage, present and track skills packages. These are called 'badges' as an easy way for students and staff to understand the concept of completing the task and earning recognition. The dashboard exists on the faculty's my.artdesign.unsw.edu.au website, and a full structural diagram of the system is provided in the attached document 'UNSW Hubs User Flows'. It comprises:
 - A personalised view for each student and staff member of which badges need to be done in the current term and for what courses (also showing single badge applied to multiple courses).
 - A list of each user's completed badges. Each badge can be clicked upon for further detail about what it enables the student to do, access, or borrow.
 - A list of courses an academic is convening or tutoring in, with drill down analytics showing individual student progress in obtaining badges. Academic staff can also view a student's dashboard view to see all badges individual students have and their progress at any time.
 - An admin section where staff can build badges by creating an info pack, adding online quizzes, links to resources or other databases, flagging badges as mandatory or optional, and limiting to certain student cohorts if desired.
 - The system is also linked to the faculty online course outline system, enabling academics to attach badge requirements to individual assessments in the course outline. This in turn populates the student and staff dashboards each term.
 - The badges are also connected to the faculty online booking system which is used to grant students entry to certain locations or facilities, and the online borrowing system which students need to use equipment. Professional staff simply scan the student's UNSW card, and are shown the badges the student currently has, determining whether they are qualified to use certain spaces of equipment.
 - Finally, the system also contains a basic analytics capability that shows course and badge relationships, the number of students who have achieved the badge and when, and the timing of the achievements.

- **Acceptance of and willingness to adopt** the Learning Hubs concept amongst a significant proportion of the faculty's academic and professional staff. In fact enthusiasm and willingness to adopt the concept

into teaching practice outstripped the scope of the project to provide enough skills packages. We did not rapidly scale because the project team was committed to undertaking thorough evaluation of the concept first to ensure that it was working as effectively as possible before scaling the concept.

- **Dedicated physical spaces on campus Hubs where masterclasses, drop in support, and informal peer to peer networking may occur.** This outcome was not achieved in the scope of work undertaken in the grant due to the removal of significant funds from the grant in the final months of the project. However, the faculty is moving towards this solution in parallel, informed by the needs and outcomes of this project, and has developed spaces where drop in support, masterclasses and peer-to-peer activity can take place to support the future expansion of the hubs concept.

The faculty was successful in obtaining internal infrastructure funding to redevelop our workshop spaces all along the ground floor of F Block on the Paddington campus. This reconfiguration will open up distinct workshop spaces to provide more opportunity for drop in support, and informal peer to peer networking may occur. This will enable the workshop professional staff to better engage with students in a more collaborative, mentor-type manner rather than the current situation with staff behind counters and students working in a series of walled off spaces. This work will establish the Analogue Learning Hub physical space on campus.

The faculty has also developed a reconfigurable computer lab space with movable workstations, providing a physical space that is able to be used both as a computer lab and also a more open working space. This new type of computer workspace will form the basis of the future Digital Learning Hub.

Key Findings

Overall the Photoshop and Analogue skills packages that were piloted received very positive feedback from staff and students. Students responded very positively to the pilot and reported that the Skills Packages helped them successfully self-evaluate their own existing skill levels, and that the bootcamps and resources helped them develop their skills. Feedback also provided valuable insight on how to streamline and improve the project as we move forward and scale across the faculty, and highlighted some areas for improvement that will be addressed. A full evaluation report is attached ('Learning Hubs Evaluation report'), however the main findings summarised from surveys and focus groups are:

Photoshop Skills Package

- **Student experience:** Students felt an *increase in confidence* after completing the Photoshop CC skills package. Staff and students acknowledge that the content is very beneficial. However there was some frustration evident in students due to the *complex passing threshold for the quiz*.
- **Content:** Students and staff thought that *the content of the package was relevant and very helpful* in developing foundational skills. Staff thought there was an opportunity to align the quiz and bootcamp content more closely. Staff and students acknowledge that a *closer integration between the skills package and the curriculum* would be beneficial in helping students contextualise and apply the skills they have developed.
- **Communication:** *Students understood the Photoshop CC skills package to be a teaching and support resource to increase their understanding and skills in the software.* There was some confusion amongst students with the quiz however, with *some believing they had to achieve a high passing mark rather than it being used as a self-evaluation tool* as intended. This will be clarified as the project moves forward. Some associated courses communicated very clearly with students while others were less active in their promotion and communication.

Analogue Making Skills Package

- **Student experience:** *Students felt an increase in confidence* after completing the Analogue Making skills package. Staff noted the value of the activities *creating a sense of community that extended beyond the classroom*. Staff and students acknowledge that *the content is very beneficial* however, participants acknowledge that a *closer integration between the skills package and the curriculum* would be beneficial in helping students contextualise and apply the skills they have developed.

- **Content:** Students and staff thought that *the content was relevant and very helpful in developing foundational skills* however, some students reported that the *practical activities in the bootcamp took up too much time* and the pace of delivery made it harder to absorb the content. Students and staff found that there was a *lack of clarity* between what was Analogue Making skills package content and what was Design Studio 1 course content.
- **Communication:** Students *were aware of the purpose of the Analogue Making skills package and how they were expected to complete it.*

Dashboard and Analytics

- Overall, students and staff found the dashboard *easy to navigate and effective in tracking their badges.*
- The fact the dashboard development was delayed and ran over into the pilot meant that *the digital environment was constantly changing* while students and staff were using it. This caused some confusion amongst users.

Recommendations

In order to effectively scale the project in 2020 and beyond, there are some considerations that need to be taken into account:

- **Develop a clear communication strategy for staff and students:** The fact that different academics introduced and explained the Learning Hubs concept in different ways to their students and tutors resulted in different levels of understanding and uptake between course (see attached report). Therefore moving forward it is critical to develop a clear and cohesive communication strategy for students and staff about the Learning Hubs and its operation to ensure a more consistent operation.
- **Quiz refinement:** Quiz structure to be streamlined to have a simpler passing threshold, emphasising their non-graded, self-evaluation intent.
- **Scalability:** To make the project sustainable and cost neutral, new workload models for convenors of packages, and for authoring new packages needs to be developed, and a method of integrating the hubs activities into class time needs to be developed to ensure cost neutrality.

2. Outcomes and impact

Describe the major achievements of your project in relation to the outcomes and deliverables. Discuss project impact – how and to what extent has the project impacted students, staff, faculty institution, and higher education as relevant to the project.

The project achieved the majority of its intended benefits to students, staff and the university as outlined in the original grant proposal document. Some of the larger scale faculty level financial efficiency benefits will be realised as the concept is applied across all programs in the faculty in the next year. In particular, the Learning Hubs pilot:

- Proved that the concept can work and can scale across the faculty. This proof of concept is critical in helping the faculty become more adaptive and to provide a more personalised learning experience for students, greater efficiencies for staff, and alignment of faculty processes.
- Helped equalise skill levels of students entering a course, thereby taking a burden away from the lecturer and enabling classes to focus more upon application of skills and idea development.
- Enabled students to engage with support that suited their own personal skill development requirements, allowing them to use their time more effectively.
- Enabled staff to quickly determine which students had completed skill badges by using the data analytics in the online dashboard system.
- Streamlined the administration, tracking, and management of 99 existing inductions, proficiencies and WHS processes for professional and academic staff through the development of the digital badges system.
- Enthused academic staff developing new courses for both the art and design undergraduate programs, helping them plan skills development holistically across the programs.

Include the strategic priorities addressed.

The project was directly aligned to **Strategic Priority A: Academic Excellence** in the 2025 Strategy, particularly the **Scientia Educational Experience – Inspired Learning through Inspiring Teaching** as it:

- Was focused on providing a personalised learning experience for students by addressing differentiation in skills levels and supporting self-evaluation of ability.
- Aligned to the concept that learning occurs in distributed environments (from skills packages, bootcamps, informal peer learning, self-directed online learning, and classroom learning).
- Strived to create communities of learning
- Provides a range of quality feedback from autonomous systems, peers, and instructors

Include the number of courses/programs/students likely to benefit from this project.

In the pilot, a total of 798 students were involved from 7 first year courses in the Bachelor of Design and the Bachelor of Fine Arts. 42 full time and casual academics also took part.

The Learning Hubs concept is designed to operate at a faculty level, sitting alongside and complementing curriculum across all programs. All students and staff are able to take badges to develop their skills, and obtain access to spaces and equipment.

In 2020, the remaining 6 Skills Packages will be developed with academic staff, and will be made available to all 4,000+ undergraduate, postgraduate, and HDR students in the faculty. It is intended to continue to scale the concept to include a range of other skills.

In addition, all 99 existing faculty inductions, WHS, and proficiency processes have been moved over to the new badge dashboards. These include:

- 2D & 3D processes – 55 badges
- 4D (film and photography) – 30 badges
- Academic Professional development – 14 badges

These are more simple badges in that they facilitate simple knowledge tests to provide access and compliance – not skill development like the Skills Packages piloted in this project. However, moving everything onto one system enables students and staff to unify processes and creates great efficiencies. All students at Art & Design use this system.

Work is also underway to link the MCIC workshop badges into our system, so that we may integrate these experiences directly into our curriculum, and track student engagement.

2. Dissemination strategies and outputs

Describe the dissemination activities and events that have been implemented and/or being planned in the future.

The dissemination of the hubs concept began in 2017 with presentations made at the following conferences:

- **2017 Unlocking the Future of Higher Education King's College London**, England (Invited Keynote). *A strategy for synthesising curriculum, peer learning communities, and data* (McIntyre, S.).
- **2017 Learning and Teaching Forum**, UNSW Sydney (Invited speaker). *Learning Hubs - A strategy for synthesising curriculum, peer learning communities, and data analytics* (McIntyre, S.).
- **2017 Ignite the Spark, Fuel the Fire: Innovative Differentiation Conference**, UNSW Sydney and Department of Education, Australia (Invited Keynote). *A blueprint for differentiated learning in an undergraduate design curriculum* (McIntyre, S.).
- **2017 Learning Academy Festival**, Temasek Polytechnic, Singapore (Invited Seminar). *Personalising the curriculum. Synthesising teacher expertise and data analytics* (McIntyre, S.).

The following presentations also took place in 2019:

- **2019 EF Lunch & Learn**, UNSW Sydney. *Art & Design Learning Hubs, analogue and digital engagement in holistic curriculum design.* (Goddard, S.).
- **2019 Connections Seminar**, UNSW Sydney (Invited Speaker), *Blended learning: A holistic faculty approach beyond the inspired learning initiative.* (Watson, K.).

In addition, during the project, a total of 42 academic staff were engaged with development of ideas for Skills Packages aligned to curriculum during formative surveys, and workshops at Art & Design.

3. Evaluation of project outcomes

Describe the evaluation strategy (formative/summative), tools and actions.

Formative Evaluation

The project team undertook several formative evaluations involving stakeholders at key stages in design and implementation stages of the project. These included:

- **Surveys and focus groups with academic staff to determine thresholds for Analogue Making and Photoshop skills packages.** This helped informed what level of skill each packaged needed to develop in students to be beneficial for a range of core courses and electives reliant on these skill.
- **Student focus group testing of the Photoshop Quiz and Bootcamp component.** Students from 1st year courses in art and design disciplines attended a focus group where the quiz component of the Photoshop package was practically examined in a test situation, and feedback gathered about its pitch, content, level of difficulty, and whether it helped students self-assess their own knowledge. The design for the Bootcamp component was also explored and feedback gathered at this point. A summary of the outcomes of this focus group called 'Photoshop Formative Focus Group Summary' is attached.

Summative Evaluation

Summative evaluation of the pilot Analogue Making and Photoshop skills packages analysed data from five data sources:

- **Online Survey – students.** 798 students in all participating courses were invited to take an online survey about their experience. There were 45 respondents.
- **Focus Groups – students and staff.** Separate focus groups were run with students and staff to explore their experiences with eth Learning Hubs concept and operation.
- **MyArtDesign Dashboard data.** The dashboard provided data about the use of the Skills Packages and the number of students attempting and obtaining badges in each class. This was cross-referenced with other data to identify any causal relationships with uptake amongst staff and students.
- **Self-evaluation quiz results and associated data.** Deidentified data from the self-evaluation quiz results from both Photoshop and Analogue Making Skills Packages was analysed to identify any particularly difficult questions, completion times, number of attempts etc.
- **Leganto data.** The UNSW Library provided usage data on the Photoshop Leganto resources for T1. This showed sustained use of the resources over the term.
- **2019 T1 New Course Evaluation Survey.** Since T1 2019 saw the introduction of 2 brand new undergraduate programs, academic staff teaching into the programs were surveyed about their perception of the performance of the courses and other issues, especially in relation to 3+. Courses involved in the project pilot were included, and some staff discussed the pilot in this survey.
- **2019 T1 MyExperience Course Reports.** Qualitative data from course reports involved in the pilot were scanned for mention of the Learning Hubs project, quizzes, bootcamps, or online resources.

Provide an evaluation report on the approach and outcomes and include any results of data collection or analysis.

Full description and outcomes of analysis available in attached report 'Learning Hubs Evaluation report'.





