**Experiential Learning vignette 1: – Transforming to Experiential Learning**

**Rationale**

In many parts of the education system, students are taught, or trained in, the skills to be able to process a predictable set of questions for a specific exam.

The reason activity-led learning is so successful is that it’s a refreshing change, it is ‘doing’ engineering. It’s an enlightening relief to be given some new learning that isn’t as formulaic as the school system.

Activity-led learning introduces many possibilities for education. Theory only gets you so far and if we take a broadly theoretical subject like mathematics, we must only view that subject as contributing to enabling engineering activity for its place in the programme experience, rather than ticking boxes for accreditation or theoretical underpinning.

The learning that takes place during an activity is much deeper than simply learning how to answer exam questions. How does mathematics contribute to, say, communication skills and design literacy?

Approaching a whole programme design in that way allows there to be a cohesiveness between theory and activity-led learning.

This vignette is derived from an interview with Prof Roger Penlington Department of Mechanical & Construction Engineering. Head of Equality, Diversity and Inclusion, Northumbria University. It forms part of a [Collaborative Enhancement Project](https://www.qaa.ac.uk/membership/collaborative-enhancement-projects/student-experience/incorporating-experiential-learning-fully-into-stem-education-a-toolkit-for-enriching-the-student-experience) funded by the QAA.

**What is the approach?**

A standard undergraduate engineering course has been transformed into an activity-led, experiential programme. Student satisfaction in the old programme had declined over a number of years and it was clear that some form of transformation of the programme was required. An institutional desire to make changes to student satisfaction created the space for innovation of the whole programme experience, rather than the typical in-module transformations we often see.

The changes involved creating a whole-programme experience where activities are the core or spine of the learning and everything else hangs off the activities. Dedicated activity-led sessions are delivered to the cohort which incorporate learning from other modules. This removes the modular feel to the programme and is much more aligned with the student view of studying at a university; a whole programme experience.

The development team believe the programme governs everything. Innovation within a module is fine but improvements in one module without improvements in another can make the student experience worse. Students see an unevenness in the learning experience which makes them question why all modules aren’t improved in a similar way. To create a truly experiential learning programme, the whole programme must buy into the ethos.

**Results/Experiences**

The physical space and facilities to run proper activity-led sessions has been key. We had to persuade timetabling to release some rooms for us to facilitate the experience of coming to campus and attending one locale, rather than moving around a campus. Students come to campus and study in non-lecture theatre rooms which are more conducive as a ‘home’ for activity-led learning.

There is consistency in delivery of each session. They all have a lectorial style and the students know what to expect from the on campus attendance. For our programme they have 3hrs, 1 subject and 2 staff at any session.

The best activities reach beyond the most basic elements of the teaching. An old activity involved designing a beam that was tested for strength. The new activity incorporates the same strength testing but is based on an aerofoil. This means students are still required to design to the same strength-based requirements as before but the new activity illustrates fundamental components within an aerodynamic system design. This pushes the students to think about the multi-faceted nature of design whilst learning the same basic concepts as before.

**This approach, allowed us to:**

• Reduce contact time whilst improving the taught experience.

• Provide whole days of learning in a single location, maximising the value of attending campus.

• Design activities that draw upon learning from multiple modules.

• Build guidance and support in to the timetable, as the cohort are all on campus together, improving the support provided.

Assessments can be varied and allow the students to move away from traditional exams. Assessments can include, posters, presentations and an end of term VIVA. The key is having reflective exercises to make the student show they understand the learning.

Staff become experts in the scenario-based sessions which draw upon the learning from other sessions. This enforces the programme view and makes students think of the whole programme instead of just the singular module or session.

Some staff are converts to the model but some are not. Traditional based teaching still has a place and not all programmes will convert to this style, for example ore specialist MSc programmes. Some staff have a confidence issue in working as a team in delivering activity-led learning. In an ideal world, staff development time would be built in and we could give all staff the time to work on this style of learning.

**Recommendations to others**

Don’t tinker around the edges.

It’s useful to have carte blanche to enable evidence-based change. Institutional and department buy-in is key. There needs to be a will listen and allow a programme team to make changes. Getting staff on board that are keen on the learning style is crucial. Staff need to understand the programme as a learning experience and the broad aims that are being aimed for.

Don’t expect too much at the module level; take the time to transform the approach of the whole programme.

Look at ways of finding out from the students what would influence them. We have paid students to test parts of our programme and feedback on them. This has proved invaluable.