Developing digital literacies through an Enterprise Flexible Module Framework

Subject area

An enterprise and entrepreneurism module in undergraduate education, providing a stepwise approach to developing digital literacies via an established and proven transferable flexible module framework.

Scope and context

A repurposable module framework has been designed to introduce students to theory and practices involved in commercialising ideas and products. The flexible module structure is tailored to the needs of a specific discipline or for multidisciplinary delivery. This allows it to be adapted and embedded into any course where the subject matter has the potential for commercial application. So far the main areas of adoption have been in the colleges of physical and life sciences, with successful integration into engineering and biosciences degree schemes. Work is currently in progress to incorporate it into mathematics and business programmes of study.

Rationale and aims

There is a suggested 12 week syllabus that is adaptable and scalable with much of the learning designed in a standalone modular fashion. This means programmes of study can easily adapt the syllabus to suit particular needs, both in terms of topic areas addressed and module length/contact time.

The module framework guides learners in setting up company teams and is designed to stimulate the commercialisation of a technology or product in response to identified discipline relevant problems or market needs. A number of contemporary experiential and reflective learning centred pedagogies are employed.

Module aims:

- Implement pertinent and meaningful commercial awareness learning delivered in the context of (and building upon) relevant disciplinary learning, related industries and/or common professional destinations.
- Provide an interactive introductory overview of the commercial process that addresses and simulates a typical process by which an idea or solution is taken to market.
- Offer a broad range of active learning opportunities that enable learners to appreciate, apply and articulate a range of enterprise oriented skills and behaviours.

Learning objectives:

In addition to encompassing the enterprise related learning outcomes proposed by the QAA in their Enterprise and Entrepreneurship Education Guidance the module seeks to engender the following outcomes as they relate to the discipline in question:

A student will have experience of:

- Applying their discipline specific knowledge to solve problems, recognise opportunities, and make decisions in the context of a simulated commercial setting.
- Taking decisions and reaching group consensus that are informed by discipline specific learning, commercial awareness, and associated knowledge and skills.
- Regular research and presentation of strategically important commercial topic areas (employing peer to peer teaching)
- Developing application and articulation of fundamental enterprise skills complimented by a broad understanding of their value within professional and organisational contexts.
- External speakers (CU alumni when possible) imparting their direct experience of aspects of the commercial process informing both module learning and learner career aspirations.

Digital literacies addressed

The module framework and broad variety of learning activities creates many opportunities for focusing on the development of learning literacies. Presentations and presenting were identified as an area where there were good opportunities to embed additional resources and activities to enable the students to develop the range of literacies associated with this particular practice. Students were required to do a number of presentations during the module, both individual and as part of a group. They were introduced to a variety of approaches and tools for developing and giving presentations and provided with opportunities to experiment and develop their skills.

Overview

For each task students are introduced to a range of resources and activities designed specifically to develop knowledge and skills that enable them to participate fully in the key tasks identified.

Due to the constrained periods of time allocated for the module, this limited how much could be done in addition to the core tasks. So, wherever possible opportunities were created to make students aware of additional resources and alternative approaches that could adopt to perform their main work task. For example, when students had to design, produce and deliver presentations they were informed of the different approaches and styles of presenting and hence to resources and tools that would help them understand and decide what format would be most appropriate for their needs, such as pitching to a venture capitalist.

Students are required to:

- Work collaboratively in small groups, to think creatively, generate ideas, plan and manage their tasks, e.g., mini research tasks have been found to be very effective for targeting essential topics
- Perform research that requires them to search, retrieve and manage and distil a broad spectrum of data and information.

- Repeatedly, synthesis complex information sources into brief reports and presentations, e.g., write a feasibility report as a group task, and deliver a presentation as a pitch to a 'Dragon's Den' scenario.
- Individually produce a module portfolio of their weekly tasks, and reflective log and report - a concise reflective log is submitted fortnightly along with a final reflective report that addresses module learning experiences and their relevance.

Digital resources and know how used

References and links to presentation resources were provided as a part of their instruction and resources about presentations and presenting. Students were introduced to these resources and encouraged to explore them more fully in their own time.

Using Prezi to Present on Presenting - http://prezi.com/yu-8hlox-khb/using-prezi-to-present-on-presenting/

Incorporating images and links that reference resources in the Knowledge Hub - http://cmapspublic3.ihmc.us/rid=1KD72T6HT-152KZ14-CXV7/Presenting.cmap

Benefits and impacts

Experience gained from implementing the framework in two different disciplines (supported by learner feedback) has demonstrated the approach to be extremely effective in terms of achieving intended learning goals as well as being inspirational at a personal level for many learners.

The module provides a ready made and effective context for highlighting and promoting the development of a range of learning literacies.

From the perspective of students such 'external' first-hand experience advances value on two levels. Firstly, in offering genuine real world 'warts and all' accounts of the commercial process and component aspects it serves to contextualise relevant theoretical concepts and practical learning activities - and thereby serving as a very effective mechanism for the development of a range of learning literacies. Secondly, it demonstrates real world career pathways as they relate to the disciplines concerned, and in doing so exemplifies (and demystifies) the transition from academic study to professional practice.

From a digital literacies perspective, working directly with the module leaders allowed for the adaptation of existing learning activities to incorporate new methods and additional resources to promote the development of specific kinds of knowledge and skills. Students were required to perform a number of presentations, both individually and in groups, throughout the 12 week module.

A redesign of this component of the module allowed students to be introduced to more in depth consideration of the presentation task, alternative presentation techniques and appropriate resources and tools.

This was achieved in the existing timeframe of the module activities.

Feedback from the students on the module was very positive with many commenting on how they presentation skills had improved as a result of the opportunity to explore alternative methods and tools for presenting.

> "I proposed the use of the Prezi, which I created as well, and I really think it helped push the idea of 'change'. I felt that, with a product that was going to have such a radical change on the fuel industry, using a PowerPoint with Comic Sans font just wasn't going to cut it." - TE

> The great thing I find about presenting is that you never reach a 'peak' you can always improve it is a skill that can be constantly developed in multiple environments and it is a skill I enjoy improving and expressing." - TE

> We began with PowerPoint presentations which were an effective visual representation of what we wished to convey but by the end ELO had moved onto Prezi which was a far superior presentation tool. I found using very simple text as prompts was the best for each slide to keep the readers interested without overwhelming them." - ZG

> "I have learnt that a presentation is much more than just reading off a PowerPoint presentation. There are several things to consider when making an effective presentation including; presentation structure, content and duration, audience interaction, method of delivery, use of props, and preparation/practise methods." - EM

Conclusions and lessons learned

In the instances where the module has been taken up and run its course it has been well received by academics and students alike. The aim is to make this a sustained component of the course.

Links to further information

Stuart Abbot and Neil Coles. Developing Enterprising STEM Graduates Case Study - National HE STEM Programme. Cardiff University

http://www.cardiff.ac.uk/racdv/students/ent-curriculum/Abbott,%20S.%20&%20Coles,%20N.%20%282012%29%20Developing%20Enteprising%20STEM%20Graduates.%20HESTEM%20Case%20Study.pdf

Dr Kelly Bérubé (Biosciences) and Stuart Abbott (Cardiff University Enterprise) – A generic framework for implementing innovation and commercialisation oriented curricula embedded learning.

http://learning.cf.ac.uk/events/event-reports/conference-reports/cuskills/

Further opportunities

A number of additional undergraduate courses, e.g., mathematics and business studies, have been identified where the Enterprise and Entrepreneurism module will be embedded in the academic year 2013/14. This will enable further validation and refinement of the resources and activities for developing digital literacies associated with presenting, as well as create opportunities to focus on other tasks and practices, such as those underpinning

group work, collaborative writing, information seeking and retrieval, task and project management and meetings.

Contact details for further information

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