The Ultimate Problem Based Learning: Run Your Own Business

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Subject area: Engineering Enterprise & Computer Networks.

This case study has been developed from data gathered through observations of the teaching component; interviews with the tutor; a questionnaire to students and a student focus group.

Background

This study concerns a module in which students, working in groups, set up and run their own business for seven months. In doing so they learn about enterprise and entrepreneurship, and develop organizational, team working, communication, negotiation, and problem-solving skills. The students are second year undergraduates in either computer and networking engineering courses or an enterprise engineering course. There are a few mature students and a few overseas students, but most of them are home students aged 19 to 21, with a diverse range of pre-entry qualifications and from a diverse range of family backgrounds. The students also have a diversity of experiences of the business world, with a few already running their own "back bedroom" businesses or having had previous employment in business, some having knowledge through family connections and others having no business knowledge. The module spans two semesters, and is taught by two staff: one leading the course design and delivery, the other providing support for half the tutorials. There are twelve lectures and workshops in the first semester and tutorial support in the second semester, the intention being that the module is up-front-loaded with the information the students need, making quite intense, and then there is a light touch in the latter half. The lectures and workshops comprise a wide variety of activities including guest lectures from experts in accountancy, marketing etc., activities or management games, and "Dragons' den" pitches, all with the aims of illustrating business concepts such as market research, how to analyse company accounts, and the role of a CEO. The students self-select their groups, but the Myers-Briggs and Belbin type inventories are used to illustrate the different roles they each might take within a group. As a group they come up with an idea for a business, which they pursue with a small amount of start-up capital (but no overdraft facility). The types of business are diverse, from computer support through to selling party supplies. The legal aspect is important: the student groups are partnerships with a binding partnership agreement that lays out the professional and ethical basis to which the students must work, and includes provision for how the partnership shall operate and how any profits would be divided. As well as company records, students maintain a blog or personal journal, and receive feedback on their group progress and documentation during tutorials; towards the end of the second semester the students give a short presentation telling the story of their venture. Students are assessed on the basis of the quality of their business idea and plan, on the quality of their final company report and financial report, the final presentation, their individual journals and a 1000 word reflective report they write at the end of the module. There is also provision of an alternative assignment should any student or group not be able or willing to complete the business venture, for example should a student be "sacked" by their partners.

Reasons

The aim is to develop the students' professional and employability skills in such a way that places their knowledge into a practical context and prepares them for future employment in business by showing how their role as engineers contributes to the business overall. The students have a technocentric worldview and tend to focus on the technical aspects of their work and "haven't yet learnt how to articulate actually what [their work] could do for the business". As a result they are unable to contribute as much as they should to the success of a business. The aim is not that students should all become entrepreneurs, but that they should understand what it means to be entrepreneurial. The initial impetus for the form of the course was the increase in the time allocated to it from eight to 24 weeks, and feedback from students that the previous approach to teaching it (problem based learning based on a hypothetical business scenario) would not be suitable for the extended module. The tutor knew some of the students had real business experience but didn't always recognise its relevance and so wanted a way of providing all students with this experience and highlighting its importance.

Lecturer's Perspective

In developing the module the tutor had support from the CETL for Employability (based at her institution), HSBC bank, and from local entrepreneurs and business leaders. She also had support from senior management in her institution, who recognised the alignment of her approach with the University's strategic aims. This support from management was important in overcoming the misgivings of some of the more riskaverse elements of the University system. As well as the usual teaching and learning administration issues this initiative involved the University's lawyers, insurers and conference/estate managers. Input from the University lawyers was important and helpful in getting the legal basis of the student partnerships correct. The conference managers were involved because the location that one group of students identified as the ideal place for their business was managed by the University conference facility who raised issues relating to University policy on the use of its facilities and health & safety. A plethora of bureaucratic delays in getting permission for the businesses to operate were sometimes only resolved by involving other parts of the University, for example going directly to pro-vice chancellor, the senior manager in charge of the relevant policy or the health and safety manager.

The tutor has seen how the real experience of running a company has built individual student's confidence in what they can achieve, given them valuable experience for their CV or to talk about in interviews. Sometimes the learning experience has been a hard one, for example realising the amount of effort required to get even a good idea to work or finding out that leading a team is difficult. The quality of learning is evidenced in the quality of the students assessed work and reflected in the survey feedback from the business leaders who have been involved in the course. The tutor acknowledges that some students resent the amount of time required for this module, it offers no easy option of last minute cramming instead of continual effort, and that some students think that only technical subjects are relevant to their engineering education. However she is convinced that the module is extremely relevant to the students since it increases their employability skills and development: "they can't be just professionally and technically able [...] they still end up highly unemployed because they're not employable. Businesses have long since moved away from the guy in the server room who doesn't have to talk to anyone and some of the students still perceive that is what their going to be doing."

Students' Perspective

Some of the student feedback reflects that this approach deliberately takes them out of their comfort zone. A question asking for the three aspects of the module that students least liked elicited complaints that the workload was too great, and the objectives not relevant to network engineers. There were also complaints about the open nature of the learning, that there were problems with the course structure and that some students felt "thrown in at the deep end". As is common with any group work, there were some problems with group dynamics and interpersonal tensions. On the other hand, among the popular themes for responses to the question asking for the *benefits* of taking the module were better team working skills, skills relating to professionalism, experience of how business enterprises work and communication skills. This was confirmed by the questionnaire showing that a sizeable number of students recognised that the module had helped them develop their communication skills (28 out of 46 returns agreed with this), their commercial awareness (26 agreed), team working skills (25 agreed), interpersonal skills (25 agreed), personal confidence (23 agreed) and problem solving skills (23 agreed).

In the interview, students raised a similar range of issues. They appreciated that this module allowed them to develop skills and gain knowledge that would not otherwise be covered by their course, for example professionalism, "getting used to reading contracts through properly", and "putting together a business plan and at the end as well, a business report, gives you a bit more of an insight into what's expected from a business—how much detail actually goes into it."

Issues

- The timing of some of the elements of the course is tricky. As a result of feedback from last year, the module was front-loaded to provide students with guidance before they started, however this year there were complaints that starting their business was delayed and that there was too little support in the second semester while the businesses were running.
- The objectives and benefits of some of the course elements, e.g. some workshops and the group role inventories were not clear to some students. Perhaps this was an issue with timing.

Benefits

- This approach develops a range of employability-related "soft" skills that are difficult to foster through conventional teaching of technical subjects. These could be evidenced when applying for jobs.
- Some students at least recognised that the knowledge about how businesses work would be useful to them in the future if they wanted to start their own business, and (as one student said) "even if you are just planning to go as an IT technician, it doesn't hurt to know how the company you're in is running".

Reflections

This module is challenging for both student and some parts of the University system; it is no easy option for the tutor, who needs commitment and perseverance to implement this innovation. However the provision of an authentic situation for learning crucial employability-related skills is clearly an important part of the students' education. Even the negative comments from students who don't see how this is relevant to technical education serve to validate the starting assumption that students need to be shaken out of a technocentric worldview that is at odds with the demands of employers. For many students this module is confidence building and develops an impressive range of skills relevant to employability.