Practice-based innovation: Organising industry input into employability

by

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Abstract
The paper aims to explore an ongoing approach towards enhancing student' employability aiming at an innovative involvement of students, faculty and external organisations in a collaborative problem-solving activity abbreviated as the Innovation and Global Growth (IGG) event. The outcome of this event is realigned with the factual needs of participating businesses and aims at generation of creative ideas and innovation in order to address the issues faced by the participating businesses and to stimulate contextual learning for students, faculty and enterprises.

Introduction
Employability in higher education and respective attempts of higher education institutions (HEI) to enhance employability prospects of their graduates have been paid unflagging attention by researchers, government policy, employers and students. In this paper we refer to employability as the capability of graduates to gain and maintain employment or obtain subsequently another employment if required (Hillage and Pollard, 1998). This capability can be rationalised as a set of achievements, including skills, understandings and personal attributes, which increase graduate's chances in gaining employment and being successful in it (HEA, 2013). Both provided definitions indirectly imply that the graduate's accomplishments need to be fitting with employer's requirements and expectations and that can be helped with by HEIs.

Harvey (2001) suggests to look at employability using separate theoretical lenses for individual employability of students and institutional employability, the latter can be summarised as the efforts of higher education institutions in order to equip students with knowledge, skills and experience. Some professional fields (e.g. medicine, nursing) are closely linked to learning in practice-based settings that are directly related to future employment, whereas in the fields pertinent to business school's education there are no statutory professional practice requirements. In the latter case there are attempts to enhance programmes of study via such devices as placements, employer-linked projects, visits and job-shadowing.

This paper introduces one such attempt seeking to put students in an unusual seat of active collaborators with several industry players in order to generate solutions to the concrete problems businesses have been facing as a part of their normal day-to-day operations. What makes the proposed method distinctive is that not only the students have to engage with real problems of real companies, but they have to work towards solutions in randomly formed multidisciplinary teams within the parameters provided by companies. Such unconventional engagement is thought of as stimulating the development of such key employability skills as group work, decision-making, situational leadership, and persuasive communication, as well as having a positive effect on student's self-confidence and experience.

Background of the project

There can be little doubt that the contemporary business environment is one in which countries, companies and institutions face significant socio-economic challenges in relation to changing demographic societal composition, competition from emerging and emergent economies, and the inexorable growth and sophistication of science and technology. The Department for Businesses, Innovation and Skills (DBIS), The OECD, Scottish Parliament and Scottish Enterprise are clear in their assessments that in order to meet these challenges, innovation is and will continue to be the principal vehicle for economic activity and growth. The Minister for Business Innovation and Skills identified in 2011 that greater cooperation, collaboration and the establishment of joint ventures between business and higher education institutions should be at the heart of regional economic planning and development for the purpose of meeting the challenges of a modern competitive global facing economy.

Dundee Business School with its partners in industry and commerce shares the view of the DBIS that there needs to be a greater emphasis on building and maintaining links between key economic and university sectors for the advancement of economic growth. The Innovation for Global Growth (IGG) initiative is an attempt by the School to foster a community of innovators comprising of businesses, students and public service institutions deigned to promote Scotland within a global economic context and to meet the economic challenges it faces.

Dynamics of employability research

The literature on the main constituents of employability is vast and differs on the account of key representative elements. Pool and Sewell (2007) maintain that the key elements comprise of career, (work & life) experience, degree of subject knowledge and understanding, generic skills and emotional intelligence that are linked together by reflection and evaluation and would contribute to self-efficacy, self-confidence and self-esteem of students. UKCES (2010) has a greater emphasis on employability skills rather than on the dynamic process of interplay of various contributing to employability factors. The way forward advocated in this paper emphasises the *mastery* of discipline, resting on some profound skills supported by the discipline related experience, as leading to self-confidence and to a greater propensity of subsequent employment. The premise of employability skills advocated by the UK Commission for Employment and Skills emphasises the layered approach to skills composition: foundation and fundamental levels resting on the positive attitude towards participation and constructive criticism (UK Commission, 2009).

While the foundation level underlines the effective use of numbers, language and information technology, the fundamental level comprises of four personal employability skills: self-management, thinking and solving problems, working together and communicating and understanding the business in the context of individual's contribution to it. A set of employability skills packaged in such way represent a collection of the skills almost everyone needs to do almost any job. The students of business and management studies need to have an additional level of skills relevant to their chosen occupations. There is no unanimous concord about this level, but it's possible to outline some shared views.

Quality Assurance Agency for Higher Education (2015) offers a subject benchmark statement in general business and management which promotes engagement with real industry challenges, business knowledge and skills and a positive attitude to innovation and change. Other contributors to the employability polemic certainly agree on the inclusion of effective leadership, teamwork, communications skills and critical self-awareness (Rae, 2007; Rees et al, 2006; UCAS, date).

This well articulated demand for a specific set of employability skills, plus ongoing and fairly anticipated changes in higher education as an industry (Friga et al, 2003), creates a certain pressure on business schools to be proactive in their provision of learning opportunities. The scope for innovation in business education typically would encompass innovative course design (Gibb, 2002; Holden and Griggs, 2010; Solomon, 2007; Stewart et al., 2012) and class activities (Solomon, 2007; Stewart et al., 2012; Wright and Gilmore, 2012) incorporating problem- and enquiry-based activities, as well as action learning (Gijselaers, et al., 1995; Milter et al., 1998; Wang, 1999; Wright and Gilmore, 2012). The more recent additions to that list emphasise creative integration of programs with other academic disciplines (Pegg et al., 2012; Solomon, 2007; Wright and Gilmore, 2012) and business partnerships (Gibb, 2002; Milter et al., 1998; Wang, 1999).

This paper outlines an innovative intervention into HEI delivery which allows for integration of multidisciplinary decision-making between students, academics and businesses with the goal of engagement in collaborative problem-solving to address the operational challenges faced by the participating organisations. The aim of this intervention, known as Innovation and Global Growth (IGG) initiative, is to provide a platform for all involved parties for a reciprocal learning, where a) students will have an opportunity for synthesis and contextual application of their knowledge and skills, b) businesses will gain an alternative, external, analytical review of the issue in hand, and c) academics would act as intermediaries in knowledge development and sharing activities, with the business challenges presented allowing for trickle-down of cases to lower levels of analysis.

The Innovation for Global Growth approach

The proposed approach of augmenting student's employability involves all four pillars suggested by Hillage and Pollard (1998), comprising of employability assets, their deployment and presentation, as well as allowing personal circumstances to be matched with such external factors as opportunities represented by involvement with local employers. Furthermore, it goes beyond the common course provision based on the disciplinary content knowledge and skills, workplace awareness and workplace experience, and generic skills (Bennett et al, 1999), as it allows for the contextual application of multidisciplinary knowledge beyond the classroom together with the further development of efficacy beliefs and metacognition (Yorke and Knight, 2006).

The mentioned contextual factors are represented by utilising help of real companies instead of abstract case studies, who provide the challenges for problem-solving that are taken from their current operations. In most instances the participating companies don't have a solution for the presented challenge, hence explicitly putting the students in the position of solution's co-creators. The outcomes of students' collaborative problem-solving have been compared with company's efforts to address the challenge and served as a basis for feedback and interim evaluation. In order to deepen the metacognitive dimension of student's learning each student team has been assigned

further tasks to develop the initial solution into a more wide-ranging theory-based analysis realigned with learning outcomes of one of the modules of their programme of study. This further investigation is undertaken as an individual activity ensuring all students have an opportunity to benefit equally from exploring all aspects of the problem and solution.

The implementation of the IGG approach

The module where where IGG takes place is structured into 3 phases: *the learning phase*, where students are given workshops on activities such as 'acting as a consultant', 'gathering requirements' and 'creative problem solving'; phase 2 - I*GG week* where students are exposed to interactive innovation-centred problem solving in working with the proposing participating organisation; phase 3 - where students *investigate and evaluate the solutions* proposed during IGG week. At the start of phase 2, IGG week, students have no prior knowledge of the problem, to simulate the experience of an unexpected problem arising in the workplace. Each session begins with an introduction of the participating organisation, its competitive environment, internal structure and other relevant details provided by the organisation's representatives. The challenge is presented and an opportunity for the class to ask questions. There follows the main problem-solving activity led by students and supported by the organisations representatives and academic facilitators. The IGG session concludes with each group reporting its possible solutions and gaining feedback from the organisation on innovativeness and operational feasibility.

In Phase 3, students develop their preliminary solution by incorporating the received feedback and chosen strand of theory to a full scale solution. The final outcome, and assessment for the module, is a management report and implementation plan which is also sent to the organisation

It was envisaged, during the conception stage of the IGG initiative, that such a complex organisation of activities, involving the real businesses would enable students to apply their knowledge and skills in a more pragmatic and meaningful manner and that would have considerable impact on student's employability and the way they Abertay students were viewed by external organisations. This has turned out to be the case with students reporting as follows:

"Most enjoyable class so far…it's brilliant that we get the opportunity to work with major companies on real-life business problems"

"It challenged me in terms of presenting & group work. …it will stand out on my CV."

"Forces you to think outside of the box"

This academic year 2016/17 was the first year of operation of IGG within a module and therefore the first time feedback was sought from students in a systematic fashion, however IGG week had run as a co-curricular activity in the preceding four years. Anecdotal evidence from students during this time period suggested that they not only saw the relevance to employability but also gained considerable confidence in their ability to deal with real life business challenges.

From the perspective of participated external organisations, the results have been very powerful. Several blue chip companies have taken the ideas given by students during

the event and have developed them into practical solutions. Comments such as below have also been received:

"We asked the students to work on a proposal that would let Stoneridge maximise sales potential. I was very impressed that within a very short period of time they framed the problem, discussed resolutions and delivered very acceptable potential solutions."
Colin Maclean Stoneridge Electronics

"It is always refreshing to listen to the ideas and views of people who are external to the business. Their ideas and approaches are an excellent challenge to the way we think"
Ian Peart,
Michelin Tyres

In an example of the confidence organisations have gained in our students work, BT not only sent a team up from London for phase 2, IGG week, but were so impressed by what they experienced that they returned a month later to work further with students and finally selected 5 students who were flown to London to present their ideas to the Chief Executive of BT Business. Of the 5 ideas they presented BT have stated that they will implement 3.

All organisations who have participated in IGG week, and now the new module, have been surprised by how much they have gained, and how much they enjoyed, from the experience. Every organisation participant has stated a desire to return to the undertake the activity again. One organisation put the value of their day with students at 'around £40,000 for the same consultancy work'.

Challenges of running this model of external engagement
Although the result of this initiative has been overwhelmingly positive, it has not been without difficulties . Despite all student participants being final year or postgraduate level, some were not ready for the intensity of the experience and for the freedom they were given in designing the solution. This module was undoubtedly different from others they had undertaken. In particular, in the final phase students were expected to be self-motivated, self-critical and to work in a professional peer-supported way. Those who were less academic achievement focussed found this difficult and sought frequent reassurance that they were progressing in the right direction. This was challenging for the academic staff who were trying to encourage the students to 'strike out on their own', be creative and to have confidence in their own work. More achievement focussed students managed this but poorer students were left feeling unsupported as the following quote from module feedback asking for negative points suggests:

"In order to really do my best in the module more feedback is needed. When feedback has been given it has been very general".

This was the first time this event had been part of the curriculum and therefore assessed. The academic tutors' view is that phases 1 and 2 went very well, but after having four previous iterations this was expected as the model from IGG week was now well established and understood. Phase 3 was more challenging, from the tutor perspective. Some students were unprepared for the level of work expected and for real peer support. Although a handbook was given to all students outlining what they should do in their peer groups each week, students seemed to need the 'comfort blanket' of staff reassurance. To try to reduce this need for staff encouragement, one of the resources

available to staff and students in the next iteration will be anonymised previous student work (permission has been sought from the current cohort). It is hoped that by seeing this work and understanding what made a good or less good report students will better understand that there is no 'right way' and that they need to seek their own path to presenting a solution.

Future directions

The IGG initiative has vividly demonstrated that the participation of real businesses, with their concerns and situational complexity, in today's business and management education is more important than ever. In the recent past the potential employers of graduates have been seen as a final element, a sort of consumer, in a long chain of training and education of the potential employees. The IGG initiative has established that employers need to be seen as *partners* in business education not only because they provide a real life case study for the students and faculty, but mainly because of they provide a rich ground for theory application and its further development.

It is planned by Dundee Business School that the IGG initiative will be adapted to different levels of study and across programmes and potentially subject disciplines. This distributed approach would enable employers, and their context, to be embedded in the teaching and learning process within many modules and by that tremendously enriching student's experience, their confidence and subsequently their employability.

Metaphorically speaking, the IGG initiative and its transition to the distributed model can be a core of contemporary teaching activity that is signifying a DNA approach to the business and management education: a quite complex and stunningly simple exercise at the same time. Its complexity would be inherited from the intricacy of organisations operations, and their environment, and management theory attempting to rationalise that multifaceted interplay of intentionality and contingency. How can it be simple at the same time? Because in this complex interaction there are only three active key players: students, organisations and faculty. Their efforts applied in unison may change the landscape of contemporary business and management education.

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