

Higher Education Practices and Perspectives Series

Volume I

**INNOVATING IN TEACHING  
ENTERPRISE, BUSINESS AND  
MANAGEMENT IN HIGHER  
EDUCATION**

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# Student-Industry Co-creation for Skills Development

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*The chapter aims to explore an ongoing approach towards enhancing student employability skills and building confidence. This approach draws on literature related to soft skills development and issues surrounding student confidence. It provides an innovative approach involving students, academic faculty and external organisations in a collaborative problem-solving activity known as 'Innovation and Global Growth week' (IGG). The outcome of this week of events is realigned with the factual needs of participating businesses and aims at generating creative ideas and innovation in order to address challenges faced by the participating businesses. This approach stimulates contextual skills and knowledge learning for students, faculty and the enterprises involved.*

## Context

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, the inexorable growth and sophistication of science and technology. The Department for Businesses, Innovation and Skills, 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 UK 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.

The School of Business, Law and Social Sciences (Abertay University) with its partners in industry and commerce shares the view of the Department for Business, Innovation and Skills 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 context and to meet the economic challenges it faces.

Consequentially, there has been close examination of the worth of Universities in meeting the demands of business, at a time of a massive expansion in the number of people accessing study in the HE sector. Politicians have recognised education as the way to increase social mobility and change the UK workforce away from traditional manufacturing and low skilled service jobs to those that require knowledge workers. Therefore, HE institutions have experienced an influx of students from non-traditional and disadvantaged backgrounds. Abertay University, in Dundee Scotland, has always been a magnet for local people who seek a more practice based education. Many of our students report seeing the opportunity for educational attainment and personal growth in a non-threatening and employment-oriented programme of study as being the way to better their employment prospects.

However evidence suggests (Peng and Li 2018), that students from poorer backgrounds suffer from low confidence that affects all aspects of their lives and, the writers suggest, impact on their employment opportunities. Therefore improving this confidence is a significant issue for HEIs if we believe education leads to social mobility.

### *Dynamics of employability research*

Employability skills, or simply employability, in higher education and respective attempts of higher education institutions (HEI) to enhance employability prospects of their graduates have been paid relentless attention by researchers, government policy, employers and students.

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 and life) experience, degree of subject knowledge and understanding, generic skills and emotional intelligence are linked together by reflection and evaluation and 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.

Quality Assurance Agency for Higher Education (2015) offers a subject benchmark statement in general business and management that promotes engagement with real industry challenges, business knowledge and skills and a positive attitude to innovation and change. Other contributors to the employability debate 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 (Gijsselaers, 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).

### *Are employability skills too simplistic for university teaching?*

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 fit with employer's requirements and expectations and that can be helped by HEIs.

However there is a tension. Universities continue to seek ways to increase employability skills but often there is a feeling that skills are somehow inferior to knowledge - that skills are things taught at levels below that of higher education or only in early stages. When we describe these skills what we find are that these are normally what would previously have been described as 'soft skills'. We might expect that skills such as good communication are innate, but we have found that, particularly depending on the student background, this is not necessarily the case. Good communication, for example, is not simply about being able to ask questions but being able to ask the right question of the right person at the right time and in the right way. To be able to correctly identify the cultural norm of the situation you are in also requires the student to be aware that there are differences in approach and to identify these prior to the communication. Gaining mastery of such skills is not the same as simplistic teaching at sub-university level. Hora et al (2018) describe this more complex view of skills development in their work on the Cultural Capital Paradigm.

On the next page is their view of how this compares to the more simplistic views of soft skills development:

Soft Skills Paradigm	Cultural Capital Paradigm
<i>How skills are conceptualized and learned</i>	
Skills are either “hard” and “cognitive”, meaning difficult and rigorous or “soft” and “Non-cognitive”, meaning easier and undemanding	Human competencies are not inherently easy or difficult, simple or complex, or valuable or valueless
Teaching a pedagogy are overlooked	Teaching students skills takes pedagogical expertise and training in the technical knowledge and cultural norms of a discipline
<i>How skills are related to situation, context, and practice</i>	
Soft skills are generic, discrete, context-free, and universally applicable	Skills are context-dependent, culturally determined, and subjectively valued
Soft skills are easily obtainable, via short workshops or college courses	Skills and dispositions are internalized through long periods of enculturation and socialization
<i>How power, diversity and exclusion are related to skills debates</i>	
Skills discourses are innocent and objective	Skills discourses reflect power, social and cultural position
Student interests are best served by instilling skills that allow them to meet employer demands in the short-term	Student interests are best served by instilling disciplinary expertise and diverse forms of social and cultural capital.
The acquisition of technical expertise and soft skills leads to employment	Job market trajectories are determined by merit, social networks, business cycles structural inequality, and discrimination

Table 1. Comparing the paradigms; Source: Hora et al. 2018, p. 32.

While basic level skills, such as being able to construct and speak a grammatically correct sentence, undoubtedly fall within the ‘Soft Skills Paradigm’ and would not be expected to form part of higher education, it is often the more nuanced use of such skills within the recruitment process, and later employment, that shows a deeper and more complex skills set, such as that espoused by Hora et al’s ‘Cultural Capital Paradigm’.

Many of the students at Abertay University come from economically deprived backgrounds. Despite the significant increase of university student numbers in the UK, many of our students are the first in their family to undertake this level of education. Such students do not come to study with the same social and cultural

capital as their peers at more ancient universities. They often display feelings of insecurity and lack of confidence in their abilities to perform in employment to the same level as others who come from backgrounds where there is socialising with people working in professions or senior positions from an early age. In our experience, this can lack of confidence can affect the employment expectations of such students post study resulting in them seeking work significantly below their ability. Therefore even before experiencing the bias that may exist within the employment process, these students discard themselves from the process by failing to apply. These show very clearly the relevance of the Cultural Capital Paradigm (Hora et al 2018) and the need for universities to help students develop skills that go beyond the simplistic view of the Soft Skills Paradigm.

### *What kind of skills do graduates need?*

Although the work by Shah et al (2015) examines employer views of university graduates in Australia, it would be reasonable to expect similar views from UK employers. Over the 10 year period under study, the views of employers remained very consistent with dissatisfaction with graduates in areas such as team-working skills, business and customer awareness and lack of work experience. This paper reports a government study identifying 5 skills as being most highly valued: flexibility; adaptability; capacity for independent and critical thinking; creativity and flair; enthusiasm. The writers of this paper would suggest that while some of these can be taught as skills, others are more behavioural and attitudinal. Another reported study found: teamwork; specific knowledge and skills for the field; written and oral communication skills; research skills; autonomy, self-organisation and flexibility; and critical thinking and analytical skills to be key to employer requirements of graduates.

Jordan & Bak (2016) (Table 2) suggested the need to look at a wide range of graduate skills for employment. This UK based review considered academic literature from 1994 to 2015 and identified the following skills listed from multiple sources (see next page):

Strategic skills	Process Management skills	People Management Skills	Decisions-making skills
<ul style="list-style-type: none"> <li>• Boundary spanning management</li> <li>• Work experience/partnering with industry</li> <li>• Market understanding and customer service</li> <li>• Business Ethics</li> </ul>	<ul style="list-style-type: none"> <li>• Project Management</li> <li>• Training</li> <li>• Regulations</li> </ul>	<ul style="list-style-type: none"> <li>• People management</li> <li>• Teamwork</li> <li>• Leadership skills</li> <li>• Collaborative learning</li> </ul>	<ul style="list-style-type: none"> <li>• Problem solving</li> <li>• Organisational Skills</li> <li>• Planning skills</li> <li>• Flexibility</li> <li>• Initiative</li> </ul>
Behavioural skills	Quantitative skills	Negotiation skills	
<ul style="list-style-type: none"> <li>• Communication</li> <li>• Time Management</li> <li>• Motivation and enthusiasm</li> <li>• Stress management</li> </ul>	<ul style="list-style-type: none"> <li>• Finance and numeracy</li> <li>• Information technology</li> <li>• Analytical and statistic skills</li> </ul>	<ul style="list-style-type: none"> <li>• Management of complexity and change</li> <li>• Negotiation</li> </ul>	

Table 2. Supply chain skills; Source: Jordan & Bak, 2016, p. 620.

The above is extensive and demonstrates the complexity of the employability skills required by organisations to enable the graduate to make an effective contribution. Although it is relatively straight forward to develop these skills in isolation, it is their aggregation and sophisticated usage that moves learning towards the Cultural Capital Paradigm and enables students to access higher levels of employment.

Harvey (2001) suggests examining 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. However these often require large numbers of organisations to be recruited to allow them to be undertaken by students. To do this there must be a compelling benefit for the organisation.

### *'Innovation for Global Growth' as method of developing deeper skills*

The writers propose an example of learning that seeks to put students in an unusual seat of active collaborators with several industry players, enables the integration of their years of advanced skills development. This learning event, called *Innovation for Global Growth* (IGG) is designed to enable students to generate solutions to the concrete and often strategic problems participating organisations have been facing as a part of their normal day-to-day operations and beyond looking towards new business approaches and strategies. 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, unknown to students prior to the event. Such unconventional engagement is thought to be stimulating the development of such deeper employability skills, as well as having a positive effect on student's self-confidence and experience.

The module that contains IGG is a capstone of student work on Business degrees at Abertay. It does not, however, stand alone. As found by Zapko et al (2018) students find simulations most successful when they are undertaken on multiple occasions. Through the reinforcement of success in each setting, students gain confidence in their own abilities. Although students experience guest lectures in each of their semesters of study, we seek to go beyond this to have more realistic work-based interactions with employers. Philosophically, a core programme would be designed around 'assessment for impact' – students would be able to demonstrate their contribution to making change happen to potential employers. Engagement with clients representing all sectors of the economy starts at stage 1 of student studies.

Stage 1: Students, in groups, produce a short documentary of a third-sector organisation. To do this they need to understand the vision and goals of the

organisation, the challenge it faces and the societal contribution it makes. Students develop: a deeper understanding of the problems associated with managing in the voluntary sector, technical skills involved in film-making, ethical requirements and narrative production. The documentaries have been used in many organisations such as the Brittle Bone Society to strengthen their social media presence.

Stage 2: Students work on a client inspired project with peers at an overseas university. This project work involves students at Abertay designing a product for the US market (Heineken is the 2020 client) in conjunction with a partnering US institution. This involves the development of a market research report testing product viability. The project enables intercultural working and greater understanding of different market needs.

Stage 3: As work experience is highly prized by employer (Shah et al 2015) the majority of students undertake a work placement. This gives them practical experience of a sector or organisation they may wish to work for in the future. Those who do not undertake the work placement are often mature students who already have work experience as part of their CV. A default module for students for whom the placement will not augment their skills base is a practical management project where students, working with clients, produce solutions to problems they face. These students are supported through careful supervision by an appropriate member of academic staff.

### *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 and national employers. It goes beyond the common course provision based on the disciplinary content knowledge and skills, workplace awareness, 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, Hora et al 2016).

The contextual factors are represented by utilising involvement of real organisations instead of abstract case studies. Participating companies are drawn from all sectors of the economy. We deliberately seek to have a mix of organisation type and size – local to international, charities and social enterprises to large public sector and blue chip companies. Utilising a range of organisation enables students to experience different challenges but also to recognise that they share common issues. For example, although the implementation of a piece of technology may be pervasive and potentially cost millions of pounds for one organisation however the issues surrounding the management of change and interacting with staff and customers remain the same regardless of the project size. Instead, what changes is the scale of any intervention with these groups and the politics that surround their activities.

### *The implementation of the IGG approach within a module*

The IGG event originally ran as an extra-curricular activity with students volunteering to attend. However there was an overwhelmingly positive response from students who wanted to take this learning further. In 2016 a module was created around the event.

The module 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 - *IGG 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.

Despite the ongoing interaction with industry throughout their course, even at stage 4 students show trepidation in undertaking the IGG event. Therefore, during phase 1 mock events were introduced as part of the workshop programme and prior to the event itself. At these mock events internal/university clients present problems to students and they have the same 3 hour period within which to come up with solutions. These mock events contain real questions such as ‘*how do we promote greater awareness of health and safety within the staff and student bodies*’ and ‘*redeveloping the library as a study space: what would facilities would students want*

*to see as part of the new centre*'. At the end of client projects students are asked to reflect on what went well in their client interactions and what could have been done better. Students have reported that these mock events help them to better understand the need for preparation and organisation prior to the event and give them confidence that they 'can actually do this'.

At the start of phase 2, IGG week, students have no prior knowledge of the problem. Each client (as they are described to the students) will introduce their problem and the context within which it sits. Students then work in groups, asking questions and developing solutions that are fed back to the client through oral group presentations after approximately 2 hours. We have experimented with the timings of the different client events and find that compacting them into a single week helps to create a feeling of 'specialness' for students. They are taken away from their normal studies and for 1 week they act as consultants. As they are final year students they are encouraged to think about what they might wear to interview and to 'dress-up' for the event in professional attire. This appears to have the effect of helping to promote more professionalism in the students as they then see themselves as 'the consultant' rather than 'the student'. It also helps them to visualise themselves within a work environment.

Senior representatives of the organisations provide the challenges for problem-solving that are taken from their current operations but are often long-term and strategic in nature. It is important that the people who represent the organisations are sufficiently senior to be able to answer wide-ranging student questions. The tutors meet with the representatives in advance to provide a briefing and to ensure that it is understood that we seek a complex and taxing real question. They are told to consider students to be as consultants, employed by them, at the event and therefore if there is something they disagree with or dislike they should say so. In reality it is rare that the clients are anything other than impressed by the students. We have also found that when such people show their enthusiasm for the ideas students generate this has a very positive impact on student confidence.

In most instances the participating companies do not have a solution for the presented challenge, hence explicitly putting the students in the position of solution co-creators. Students are given the name of the organisations they will

work with in the week before but will not be given the challenge. There are two reasons for this:

1. We want students to feel that they are in the position of an employee where the senior manager has come in and given the problem which needs resolution as an immediate priority. This helps to create a feeling of urgency at the ½ day session and a managed stress environment unlike that generated from using a standard case study.
2. The second reason is a pragmatic one – we want real, current challenges from the client and this can mean a late change to the topic they want covered. On one occasion a client bought another company on the Friday and presented the problem of integrating the new company into their group and brand on the Monday. The ‘realness’ of the situation brings out unexpected (to the students) layers of knowledge and skills within the student group as they gain pride in rising to the occasion.

In Phase 3, post-event, students develop their preliminary solution by incorporating the received feedback and chosen strand of theory in order to develop a full-scale solution and implementation plan. In order to deepen the metacognitive dimension of student’s learning, each student is assigned one client for whom they must further 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. Students are not limited to the findings of their group on the day of the event, but can explore other solutions based on evidence they gather in researching the problem.

### *IGG Participant Views*

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 pragmatic and meaningful manner. This would then 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”*

*“Assessment is exciting”*

*“One of the best, most interesting and most practical modules out of the whole 4 years”*

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

*“It’s been a real privilege working with some of the brightest young minds in Scotland.”*

Head of Marketing and Donor Engagement NHS Scotland Blood  
Transfusion Service

The event has also been commented on by government officials.

*“Earlier this week I visited Abertay University in sunny Dundee – renowned already for its pioneering work to establish an international reputation in the video games industry and to provide a bridge from academic study to the world of business. What particularly impressed me was the innovative approach taken by the university’s Business School, linking up with major Scottish and UK businesses to provide students, working together, with an opportunity to come up with creative solutions for real problems confronting those businesses.*

*The results from this exercise are impressive. This is not an altruistic gesture in corporate social responsibility. It is generating real business benefits for the companies concerned. And the key to success is creating a positive environment in which students are given the confidence to think outside the box.*

*This is also a challenge for our schools to rise to – in short educating for confidence.”*

Lord Dunlop UK Minister – Scotland Office (2016)

British Telecom (BT) took part in IGG in 2017. The challenge posited was that BT had decided to enter a congested mobile phone market with a new product targeting SMEs. Potential commercial applications were proposed that resulted in BT’s decision to re-engage with the students to develop their ideas further. Five of the students were chosen to present their ideas to the CEO of BT Business in London. Of the five ideas they presented, BT implemented three commercially. It cannot be understated the significance of this: presenting to the CEO of Business, the fourth largest brand in the UK, demonstrated the acquisition of confidence gained throughout the previous three years of direct interaction with external clients.

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 undertake the activity again. One organisation put the value of their day with students at ‘around £40,000 for the same consultancy work’.

The above examples show the level of benefit being accrued by organisations taking part in this activity. It is, therefore, not surprising that we now find ourselves in a position of turning away potential client organisations each year.

### *IGG and employability skills creation*

Due to the complexity and cross-disciplinary nature of the industry posed questions in the IGG Project we can see that many of the skills identified by Jordan & Bak (2016) feature strongly. For each question the students must work in groups to question the client and defend a preliminary oral presentation of findings. They are then required to produce an individual industry based report that provides context to the question, analyses the current position, proposes solutions and provides an implementation and resource plan. Therefore, regardless of the question set students are likely to encounter the need for the following skills (those in underline are used during the content of discussions, those in bold/italic are used as part of the group working) (Table 3).

Strategic skills	Process Management skills	People Management Skills	Decisions-making skills
<ul style="list-style-type: none"> <li>• <i>Boundary spanning management</i></li> <li>• Work experience/<i>partnering with industry</i></li> <li>• Market understanding and customer service</li> <li>• <i>Business Ethics</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Project Management</i></li> <li>• Training</li> <li>• Regulations</li> </ul>	<ul style="list-style-type: none"> <li>• People management</li> <li>• Teamwork</li> <li>• Leadership skills</li> <li>• Collaborative learning</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Problem solving</i></li> <li>• <u>Organisational Skills</u></li> <li>• <u>Planning skills</u></li> <li>• <u>Flexibility</u></li> <li>• <i>Initiative</i></li> </ul>
Behavioural skills	Quantitative skills	Negotiation skills	
<ul style="list-style-type: none"> <li>• <u>Communication</u></li> <li>• <u>Time Management</u></li> <li>• <u>Motivation and enthusiasm</u></li> <li>• <u>Stress management</u></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Finance and numeracy</i></li> <li>• Information technology</li> <li>• <u>Analytical and statistic skills</u></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Management of complexity and change</i></li> <li>• <u>Negotiation</u></li> </ul>	

Table 3. Supply chain skills; Source: Jordan & Bak, 2016, p. 620.

Table 4 shows examples of some of the industry questions/challenges posed to students. In addition to the skills produced as part of the IGG process (above) the specific skills and knowledge required include:

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*Industry question 1: How can company X (a large independent accountancy firm) utilise technology to provide a better service to customers?*

- Market understanding and customer service
- Information technology (perspective of operational and communications software)
- Training
- Regulations

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*Industry question 2: How do we (a multi-site law firm) complete in the complex insurance claims market when we are disadvantaged by not being the 'in-house' legal firm of customers' insurers?*

- Market understanding and customer service
- Understanding of social media and online marketing (IT)

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*Industry question 3: A small, local charity has been successful in gaining funds for a building for the community. What should they use the building for to ensure that it is self-sustaining financially and still meets the needs of the local community?*

- Market understanding and customer service (beyond to social engagement rather than simply customer)
- Understanding of demographics and application to communication methods (Numeric skills)

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*Industry question 4: How does a large national banking chain adapt the services it provides to businesses in relation to foreign exchange transactions? In particular how can it leverage technology but not lose the personal connection with these customers?*

- Process and market understanding
- Understanding of business client needs

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*Table 4. Examples of skills developed answering industry questions.*

The types of questions also demonstrate the need for skills that go well beyond those Hora et al (2016) regard as belonging to the ‘Soft Skills Paradigm’. They require cultural awareness of the employment field to be successful in reaching their clients. A prime example of this is in the tone used to write their individual report. The tutors spend time explaining to students the need for a ‘diplomatic touch’ in their writing. Students need to learn that writing that a client does some-

thing particularly badly will likely be met with a poorer reception than if they simply discuss how the current situation can be improved to greater effect. This sensitivity in the communication goes far beyond basic communication skills and the mere grammatical expression of the student findings and ideas.

### *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 comment was received the first time this event had been part of the curriculum and therefore assessed. The academic tutors’ view was that phases 1 and 2 had gone 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 made available to students in the next iteration was anonymised previous student work (student permission had been sought). A specific session on writing, focussing not only on the re-

quirements of the report assessment but also on the need to develop a professional and diplomatic tone were also introduced. By seeing both good and less good work and through greater emphasis on personal creativity students were better able to understand that there is no 'right way' and that they need to seek their own path to presenting a solution.

Another challenge arose when a non-business group (law students) joined the module. In the first year, 2018/19, this was made a compulsory part of their final year study. Although some students embraced the opportunity to study something new and interact with their peers from other programmes, others felt too far from their comfort zone.

*“Sitting in class for this module as a law student has been very different as compared to other modules. I have had no guidance as to what exactly I am supposed to be doing. I have no idea what is expected from the coursework and having no business background of any sort has not helped either”*

It was clear that this module was outside the norm for this student group and rather than embrace the difference and see it as an opportunity for growth and creativity some put up mental barriers early in the module. It is interesting to note that when we analysed the assessment results at the end of the module and compared this module to the rest of their results they either performed as well, or slightly better than their average. However, in the following year this was changed from a core to an option module for law students and although nothing about the delivery changed, the attitude of the students was considerably different.

*“This module has been a breath of fresh air for me, being a law student. As I am unsure whether or not I will follow the natural path of my degree and become a solicitor, this module allowed me to explore other avenues. Although I didn't have the base knowledge that other business students would have, I felt we were provided with the essential information needed to complete the assessment. The highlight of this module was definitely the IGG week. This was a fantastic experience and highly beneficial as it allowed us to investigate real world business problems and not only utilise the business skills we had acquired in the lectures, but also implement a fair degree of creativity which is something we rarely get the chance to do in law.”*

What we believe this demonstrates is that students need to be ready and willing for this kind of interaction. For the business students this module was part of a series of modules that had started in stage 1 and therefore there was unquestioning acceptance of this approach. However, for students not used to such approaches and taken out of their cognate area their mental preparedness for a different pedagogy might be missing, leading to resistance.

The final challenge faced was in relation to student feedforward/back. Although in phase 3 students were expected to bring work they had undertaken and discuss it in groups this was patchy. Some students made full use of the staff and group time but others had not progressed sufficiently to gain the advice they needed. We were also fairly lax with regards to attendance and the end results showed that those who had not attended often lacked the deeper skills sought and a small number misinterpreted the brief. As a result we intend to introduce an early feedforward activity for students to undertake and get feedback on. This will take place within 2 weeks of the event and will force students to start engaging with the work earlier and encourage better time management. It will also enable us to identify students who are struggling to understand either the client brief or the assessment requirements. As we mean for this to be a mainly formative assessment, but want to ensure all students will undertake it, we will give it a small weighting within the overall report grade (10%). This will allow students who perform poorly at this early stage to rectify the situation for the later report (5 weeks later).

### *Variations tried and Future directions*

Originally it was planned that the IGG initiative would 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. However the effort involved in planning and running such events has led to a different approach being developed (see previous section for industry based activities at each level of study).

As stated by Zhang et al (2017) students from impoverished backgrounds often exhibit feelings of inferiority and underestimate the value of their own ability. We have experimented with the IGG model in various ways over the years and on one occasion invited masters students from a nearby traditional university, with a very high league table position, to join our undergraduates at the event. This proved to be an eye-opener for both groups. In observing both student groups the Abertay group were overhead saying '*we are just as good as them, maybe even better*', in an amazed tone. Likewise, those from the collaborating institution, where students are likely to have come from wealthier backgrounds and often private schooling, noted that they had expected our students to be academically weak but that they had found this not to be the case. The atmosphere in the class changed after this session with higher degrees of confidence being shown, with students who would not have previously contributed their ideas to class now feeling able to do so. Although it has not been possible to repeat this activity, merely telling students the story of what happened appears to have a positive outcome.

Another variation was to seek to include students from different cognate areas from across the University in the event week. The aim was to introduce a broader range of ideas and to include students who had a deeper cognate knowledge of the area under investigation e.g. Food Science students where the customer was from that industry. The hope was that business students would gain a better insight into the cognate area from their peers and the non-business students would gain an opportunity to think more about the business aspects of their industry. Unfortunately it proved difficult to inspire much of an uptake and encouragement activities were very time consuming on staff with little reward. It might be that offering the module as an option across the University would be more successful, but plans to do so have been met with operational difficulties.

At the moment the title 'innovation for global growth' only really lives up to expectations in relation to a small number of the organisations we work with. A variation we would like to try in the future is to pair up with organisations and universities in different parts of the world to create a truly global experience for all 3 parties: students, staff and industry.

## Conclusion

Reports from both students and industrial partners show that this approach to co-creation of solutions is valued by both groups. Tutors also report higher levels of student engagement and drive to achieve their best work.

Through exploration of some of the literature surrounding employability and provision of an ongoing case study of 8 years, this chapter has demonstrated that the participation of real businesses, with their unique concerns and situational complexity, is more important than ever in today's business and management education. 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 further skills development.

This chapter outlined 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. However over-arching all, and fundamental to the activity, is the desire to improve employability skills, increase student confidence in their abilities and to enable them to recognise the value of *their* potential personal worth to organisations. We hope, and have seen examples, of how this has motivated many from non-traditional HE backgrounds to be motivated to fulfil that potential through seeking ambitious employment opportunities.

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