



Thank you for downloading this document from the RMIT Research Repository.

The RMIT Research Repository is an open access database showcasing the research outputs of RMIT University researchers.

RMIT Research Repository: <http://researchbank.rmit.edu.au/>

Citation:

Huq, A and Gilbert, D 2017, 'All the world's a stage: transforming entrepreneurship education through design thinking', *Education and Training*, vol. 59, no. 2, pp. 155-170.

See this record in the RMIT Research Repository at:

<https://researchbank.rmit.edu.au/view/rmit:42554>

Version: Accepted Manuscript

Copyright Statement: © Emerald Publishing Limited

Link to Published Version:

<https://dx.doi.org/10.1108/ET-12-2015-0111>

PLEASE DO NOT REMOVE THIS PAGE

All the world's a stage: transforming entrepreneurship education through design thinking

Abstract

Purpose

The purpose of this paper is to present an alternate approach to entrepreneurship pedagogy development through an iterative journey of co-ownership between students, industry partners and academic course teams to enhance student satisfaction and learning outcomes.

Design/methodology/approach

Utilising design thinking, the pedagogy evolved over a three-year period (2013 to 2015) through iterative innovation in the delivery model and assessments, underpinned by notions of classroom community, constructivism, justice and equity, humour and role-play.

Findings

The findings strongly validate the integration of notions of justice and equity, constructivism, humour and role-play as learning principles and delivery elements in entrepreneurship pedagogy to enhance student satisfaction and learning outcomes. A critical outcome of this design and delivery process is the reduction of barriers between students and teachers and the impact this has on creating a shared learning journey; a journey that in this case has resulted in meaningful outcomes for all involved.

Research limitations/implications

Further research with longitudinal data is needed to validate the link between design-led entrepreneurship pedagogy and enhanced student learning outcomes as well as implications

relating to graduate employability. In global settings, further data collection could also validate whether the findings are culturally neutral or culturally sensitive.

Practical implications

Entrepreneurship educators will benefit from this pedagogical approach in seeking to meet the needs of business start-ups, intrapreneurial capacity-building and potentially, enhancement of graduate employability. The model also offers promise for other learning contexts.

Originality/value

Design thinking has received scant attention in entrepreneurship pedagogy. This case study demonstrates how design thinking can enhance student satisfaction and learning outcomes by integrating notions of constructivism, justice and equity, humour and role-play in entrepreneurship curricula.

Key words: entrepreneurship education, design thinking, student satisfaction, graduate employability, student feedback

Article classification: Case study

Introduction¹

In today's connected, knowledge intensive world the notion of didactic approaches to pedagogy development appears at odds with expectations from students, employers and societies at large in fostering capabilities better able to deal with uncertainty, ambiguity and volatility. Moreover, in the field of entrepreneurship education the learning journey is

¹ The authors gratefully acknowledge the insightful feedback of the reviewers on the earlier drafts of the paper.

shaped by the need to bridge the gap between knowledge creation and delivery and action in transforming concepts to viable realities. The case of one entrepreneurship programme and how a co-created curriculum was designed and delivered is presented in this paper highlighting the efficacy in reducing hierarchical ‘barriers’ between educators and students by avoiding jumping straight to solutions. A design thinking approach was adopted in stepping back from solution mode (i.e. ‘I know how to fix this’), to discover what the problem was in terms of dissatisfaction with the current approach, in order to shape an empathetic, user-centric lens on what could be. The paper begins with a discussion of the ontological, theoretical, pedagogical and practical challenges associated with entrepreneurship education. We then present a review of relevant literature that led to a synthesis of five key questions to consider in developing a pedagogical framework for entrepreneurship education. The paper then in greater detail presents the case study of the reimagining, redefining and delivery of a foundational entrepreneurship course at Royal Melbourne Institute of Technology University (RMIT) in Melbourne, Australia, co-designed using design thinking from 2013 to 2015 by the course team, students and industry advisors. Following this, the journey map of the iterative development of the pedagogy, including positive and negative experiences and outcomes, is presented and in subsequent discussion the findings section reports how the new curriculum – and, crucially, its approach to design and delivery – enabled an appropriate alignment of the learning principles and elements with the content, pedagogy, assessment items and learning outcomes. The paper concludes with an outline of the implications of our findings for higher education providers and future research.

Entrepreneurship education in the new economic era

Over the past 20 years, universities are increasingly being held accountable for the student experience, treating students as consumers, and producing work-ready and entrepreneurial

graduates (Darlaston-Jones *et al.*, 2003; Rae, 2010; Cable, 2011; Millican, 2014). The skills that have been identified by employers as most important in the United Kingdom, United States (US) and Australia are communication, teamwork, critical thinking, problem solving, initiative and enterprise, self-management, and learning through technology (Casner-Lotto and Barrington, 2006; Australian Industry Group and Deloitte, 2009; Lowden *et al.*, 2011; Gilbert, 2012). In the context of the changing role of universities, a debate has reopened around the extent to which the focus on employability conflicts with a holistic approach to learning (Giroux, 2010; Ramsden, 2011; Millican, 2014). Nonetheless, the increasing demand for entrepreneurship education globally is well recognised (see De Faoite *et al.*, 2003; Finkle, 2007; West *et al.*, 2009).

At the ontological and theoretical levels, there is no consensus regarding what entrepreneurship education is trying to achieve (Gibb, 2002; Katz, 2003; Kuratko, 2005; Blenker *et al.*, 2008; Pittaway and Cope, 2007). Systematic analysis of the different themes within entrepreneurship education highlights that enabling an understanding of entrepreneurship, enhancing graduate employability and encouraging graduate enterprise are the three distinct outcomes of entrepreneurship education (Pittaway and Cope, 2007; Hindle, 2007; Fayolle and Gailly, 2008; Rae, 2010; Seikkula-Leino *et al.*, 2010, Gilbert, 2012; Huq and Gilbert, 2013). Such analysis further postulates that “debates about entrepreneurship pedagogy sit within the context of what entrepreneurship education is understood to ‘mean’ ... axioms that are themselves guided by contextual factors. It is also inevitable that these contextual factors are further influenced by the wider society and particularly its culture” (Pittaway and Cope, 2007, p. 485).

The ontological dimension of a teaching model for entrepreneurship education requires a clear definition of entrepreneurship as a teaching field and what “education” means for

educators and students within the entrepreneurship context (Fayolle and Gailly, 2008; Blenker *et al.*, 2008; Gibb, 2002). While there is little debate about these expectations within the domain of entrepreneurship education, it is important to recognise that its outputs cannot be delivered by a ‘one size fits all’ approach to entrepreneurship pedagogy. They are the collective result of various learning approaches within the entire entrepreneurship programme experience where graduate attributes are systematically and progressively developed through well-designed curricula. The success of such a programme calls for educators in foundational entrepreneurship courses to adopt learner-centred teaching skills and strategies that support students not only to achieve a successful academic and social transition to higher education (Parker *et al.*, 2004), but also to develop a sense of ownership of their learning while building a community of learning (Chory-Assad, 2002; Summers and Svinicki, 2007). Educators thus play a central role (Seikkula-Leino *et al.* 2010) by shaping attitudes and providing knowledge for affective learning (Kearney, 1994), enabling students to be enterprising in their approach and sending them out to industry as entrepreneurial agents (Anderson and Jack, 2008). According to Hannon (2006), Hytti and O’Gorman (2004) and Seikkula-Leino *et al.* (2010), entrepreneurship educators are now at a crossroad where several transformations pertaining to entrepreneurship education are coming together. Furthermore, entrepreneurship educators need to view entrepreneurship education as a method that requires many different approaches to teaching and learning – some of which have not yet been applied in entrepreneurship curricula (Neck and Greene, 2011). Approaching entrepreneurship education as both a “process” and a “method” enables students to go beyond understanding, knowing and talking to using, applying and acting. This requires entrepreneurship curricula to be inclusive and affective; facilitate a learning community where students are able to observe the world through a different lens and create opportunities; and include businesses as course work, serious games, role-play

and simulations, design-based thinking, and reflective practice (Blenker *et al.*, 2008; Neck and Greene, 2011; Fayolle and Gailly, 2008; Pittaway and Cope, 2007).

The university enterprise context

Stanford University's contribution to the development of Silicon Valley that led to what has been described as "inventing the entrepreneurial university" calls for universities to harness increased collaboration with industry, particularly since both federal and state funding is being cut to support the operation of the university (Nelson, 2001). A range of studies that explore how universities can act in "entrepreneurial" ways (Poole and Robertson, 2003) including those that argue that universities are already at the forefront of innovation and hence should act entrepreneurially (Conceicao and Heitor, 2002; Jacob *et al.*, 2003) and encourage academic entrepreneurship (Shane, 2004); affirm that the university leadership, organisational culture and strategy; the existing university-business interface; and the interaction between students and entrepreneurs all create important contexts within which entrepreneurship education is applied (Pittaway and Cope, 2007). Despite this general consensus around the context in which entrepreneurship education takes place, business schools are still being criticised for their "persistent deficiencies in certain non-technical graduate skills" (Jackson and Chapman, 2012, p. 96). Crebert (2002) and Jackson and Chapman (2012) argue that outdated curricula, inappropriate pedagogical techniques and inadequate opportunities for work-integrated learning are some of the major reasons for such deficiencies.

As captured in its founding motto dating back to 1887 - "A skilled hand, a cultivated mind", RMIT University has maintained its strong commitment towards making a significant contribution to graduates' work and industry readiness, specifically the development of the core skills and capabilities of practice (RMIT WIL Policy, 2007).

Following a series of high-level workshops and staff consultations, RMIT declared that its 2015 Strategic Plan was to combine teaching, research and partnerships to create value in the global economy, support enterprise, and serve the needs of diverse communities (RMIT, 2015). Evidence of the application of this strategy within curricula can be seen across the university, particularly in the entrepreneurship programme, through the Fastrack Innovation Program (Gilbert, 2012) and work-based learning in social entrepreneurship (Huq and Gilbert, 2013). The pedagogical innovation examined in this paper supports RMIT's strategic vision. Further impetus for the iterative pedagogical innovation underpinned by design thinking was drawn from the following five key questions for a pedagogical framework in entrepreneurship education identified through literature synthesis:

1. An entrepreneurship education course should have a clear objective at the micro (participant) and macro (organisation, society) level – *the why?*
2. An entrepreneurship education course should be designed around a thorough understanding of the profile and background of the participants – *for whom?*
3. An entrepreneurship education course should identify relevant evaluation criteria in line with the course objectives and the participant characteristics – *for which results?*
4. The content of an entrepreneurship education course should be explicitly designed around five knowledge dimensions – know-what, know-how, know-who, know-why and know-when – *the what?*

5. The choice of pedagogical methods for each entrepreneurship education course should be based on the objectives, contents and constraints imposed by the institutional context – *the how?*

(See Blenker *et al.*, 2008; Neck and Greene, 2011; Fayolle and Gailly, 2008; Pittaway and Cope, 2007).

The aim of the pedagogical reinvention was to focus on the learning “process” and “method”, rather than solely on the “content”. Students were seen as active participants rather than an audience and the teacher as a “learning facilitator” rather than an exclusive content expert. The pedagogy thus had a strong focus on design-led experiential and interactive learning, role-play and reflective analysis to enable students to develop lifelong learning skills and the confidence to apply them in both study and work (Conrad *et al.*, 2007; Stefani, 2009). The course team became a ‘design team’ and adopted the design thinking (Beckman and Barry, 2007; Martin, 2009; Brown, 2009) approach to work alongside students, graduate entrepreneurs and industry partners in designing and delivering the new curriculum in response to a co-designed problem statement. While entrepreneurship educators at institutions such as Babson College in the US have experimented with alternate or innovative pedagogical practices such as the use of serious games (see, for example, Neck and Greene, 2011), we endeavoured to create a sense of ‘journey ownership’ with students through the co-design process. Notions of justice and equity, constructivism, humour and role-play emerged from design thinking’s divergent then convergent approaches underpinning a human-centred, empathetic approach to realising better educational outcomes. Our approach is discussed in more detail below.

Application of design thinking in the context of entrepreneurship education curricula

Neck and Greene (2011) reflect on Simon's (1996) observation that, while entrepreneurship is an applied discipline, it is more often than not taught and researched as if it was a natural science. They argue that entrepreneurs "think and to some extent act like designers" (p. 65), highlighting alignment in the way both diverge and converge around identifying and then acting on realising what could be, in response to an opportunity or problem. This requires skills in "observation, synthesis, searching and generating alternatives, critical thinking, feedback, visual representation, creativity, problem-solving and value creation" (p. 65) – quite a range and depth of skills for educators to enable and facilitate.

Design thinking is fundamentally concerned with human needs. Proponents of design thinking such as Tim Brown, Chief Executive Officer of IDEO, highlight that it is not a "linear, milestone-based process". Rather, it is an interaction between three spaces: "*inspiration, ideation and implementation*" (2008, p. 88). Brown argues that design tools can be effectively utilised in other disciplines, such as business and education, to overcome the "we know the solution" approach. The use of empathy and engagement in designing and delivering experiences that are different and more effective is a critical aspect of the co-design process. This approach engages end-users and other key players in the service value chain and sees concept iteration as starting with the concrete and analytical mindset by looking at what does not work, then diverging into the abstract by reframing the problem and analysing what this reveals. Such synthesis leads to clearer definition of options and applications. This design thinking approach to course design and development in an entrepreneurship programme was first trialled in 2007 at RMIT in the programme's capstone course: Fastrack Innovation Program (Gilbert, 2012). The design and development utilised the Double Diamond Model (2005), that addresses four key iterative cycles in the design process: "Discover, Define, Develop and Deliver". This model also underpinned the later development of a Social Entrepreneurship course in which problem-based learning

was matched to design thinking tools such as rapid prototyping, proof of concept via co-design, service-blueprinting and role-play to enhance students' capacity to think analytically, intuitively and divergently (Huq and Gilbert, 2013).

In the 'discovery' and 'define' phases of design thinking, the afore detailed five questions provided a critical foundation to the design process. These questions addressing *the why, for whom, for which results, the what and the how* were explored and ideated around to define and deliver solutions. The objective was to enable the course team (or design team) to iteratively enhance an entrepreneurship pedagogy through which students would have shared journey ownership underpinned by sound learning principles and elements. This approach was in response to the problem of low levels of student satisfaction and engagement as well as feedback from industry and start-ups regarding 'ideal capabilities' they valued in the businesses of today and those of tomorrow. The design-driven pedagogy for the foundational entrepreneurship course presented in this paper led to significant improvement in student satisfaction, engagement and graduate learning outcomes (with further research to be conducted on impacts relating to graduate employment and involvement in start-ups). The findings support current thinking that entrepreneurship education should consider *the why, for whom, for which results, the what and the how* elements in designing curricula that encompass method, process and learning content. (Hytti and O'Gorman, 2004; Schwartz, 2006; Seikkula-Leino, 2008; Fayolle and Gailly, 2008; Blenker *et al.*, 2008; Jones, 2010; Neck and Greene, 2011). We however depart from mainstream practice by avoiding linear approaches in the design process, rather we actively engaged key actors in the learning experience and co-designed with them in an iterative, experimental way by diverging then converging around the problem, the solution and the delivery.

Students, industry partners, entrepreneur graduates of the programme and the academic team participated in a facilitated design thinking workshop. The problem statement in the discover phase was developed using a ‘how might we’ statement, i.e. how might we better engage and stimulate entrepreneurial (and intrapreneurial) learning with undergraduate students so that they might better understand what is required to take nascent ideas to market? Then using the problem statement, we engaged the five key questions to guide us through the convergence cycle to define possible solutions to be tested and validated. Underlying domains of interest to be investigated emerged that offered direction in this convergence cycle around potential solutions. In particular, justice and equity, constructivism, and humour and role-play in the context of higher learning emerged as potentially useful in the application of required learning principles and elements in designing entrepreneurship curricula (Lobler, 2006; Seikkula-Leino *et al.*, 2010).

Mapping the five key questions to the Double Diamond Model

To enhance the convergence around pedagogical solutions so that we could move from the ‘understand’ diamond to the ‘create and deliver’ diamond, we mapped the five key questions to the Double Diamond Model.

INSERT FIGURE 1 AROUND HERE

This process sought to avoid a push model whereby students were told “we know what’s best for you’, instead, challenging them and programme staff to take co-ownership of the development and delivery aspects of the ‘create and deliver’ diamond. Experimentation was required throughout the design cycles over multiple iterations from 2013 to 2015 as we iteratively fine-tuned our discovering, defining, developing and delivering in response to

the why, for whom, for which results, the what and the how. We present further discussion on these different delivery iterations in the ‘Journey Mapping’ section.

The result of this process was the emergence of two overarching “learning principles” and two key “delivery elements”:

Learning Principle 1 (LP1) – Classroom community/cooperative learning and constructivism

Learning Principle 2 (LP2) – Fairness, justice, equity and affective learning

Delivery Element 1 (DE1) – Use of humour in facilitating constructivist learning

Delivery Element 2 (DE2) – Role-play as a learning method

The following section discusses the theoretical background of these principles and elements in greater detail, before outlining a “journey mapping” exercise undertaken as part of the Entrepreneurial Process course delivery.

LP1: Classroom community/cooperative learning and constructivism

Entrepreneurship educators have the opportunity to reflect in their pedagogy the understanding that entrepreneurship involves different roles and requires a variety of attributes, qualities, skills and knowledge that must be learnt in the context of a learning community. Extant research has demonstrated that students report significantly higher levels of motivation in courses that involve cooperative learning compared to a traditional lecture set-up (Johnson and Johnson, 1998; Rovai and Lucking, 2003; Summers and Svinicki, 2007) as they engender a process of acceptance, mutual liking, respect and trust (Hoffman *et al.*, 2002). Building a learning community is essential when seeking to create a learning environment that is as invigorating, interactive, immersive and informative as the outside world, thus enabling students to (Boyer, 1990; Weimer, 2002) develop their own meanings of entrepreneurship.

LP2: Fairness, justice, equity and affective learning

Instructional communication scholars (see, for example, Gorham and Millette, 1997; Frymier and Houser, 2000) suggest a link between perceptions of fairness and student motivation and affective learning. Affective learning in foundational courses can influence student behaviour in later years of higher education and beyond, making it an important student outcome (Kearney, 1994; Chory-Assad, 2002).

The application of organisational justice theory and equity theory to the instructional context provides further insight into student learning and the functioning of the student–teacher relationship. Just as employee perceptions of fairness in organisations impact employee job satisfaction, so do students’ perceptions of justice in the classroom affect their learning. This pedagogy has attempted to build the association between classroom justice, fairness and equity and the affective learning experience of students by drawing on three types of justice – distributive justice (Laventhal, 1976), procedural justice (Cropanzano and Greenberg, 1997) and interactional justice (Brockner and Siegel, 1996) – provided by instructional communication research and organisational justice–related theory and research.

DE1: Use of humour in facilitating constructivist learning

Research suggests that humour through the use of anecdotes and jokes, and humorous comments related to instructional content, encourages students to see things from multiple perspectives, which in turn correlates positively with their cognitive understanding (Opplinger, 2003; Garner, 2006; Wanzer *et al.*, 2010). Glenn (2002) and Garner (2006) observed that humour can break down structural hierarchies and reduce anxiety and stress levels, thereby fostering a trusting and positive constructivist learning environment. The

deliberate use of humour in the classroom can be difficult; but when humour is effectively applied, it is possible to engage and encourage a student cohort from diverse cultural, ethnic and linguistic backgrounds.

DE2: Role-play as a learning method

The degree to which role-play is already being used in entrepreneurship education has not been confirmed, although Shepherd (2004), Anderson and Jack (2008) and Collins *et al.* (2006) support its use to help students learn about the practical aspects of entrepreneurship. Shepherd (2004) recommends role-play as an element of entrepreneurship pedagogy to manage the emotions around learning from failure. Anderson and Jack (2008) suggest that entrepreneurship educators should demonstrate that “to be entrepreneurial requires individuals to be professionals, technicians, artisans and artists” (p. 269). One particular challenge associated with role-play is that it is very time consuming to design, implement and evaluate (Alden, 1999). Further, many teachers are reluctant to use role-play as the outcomes can be unpredictable (Brown, 1994).

It is also important to understand that the learning principles and in particular the delivery elements may not necessarily remain stable. The iterative nature of cycling through the design process brings with it inherent fluidity that is characterised by experimentation, evaluation, further creation, development and delivery. This is highlighted in the journey mapping presented following detailing this process over a two-year, six semester period.

Journey map of the enhanced pedagogy

The evolution of the pedagogy for the Entrepreneurial Process course began in Semester 1 of 2013 with the integration of the lecture and tutorial into one three-hour session under the new delivery model of the “lectorial”. Although the lectorials became more interactive as

students were encouraged to offer their own perspectives on the learning content, the student presentations tended to be repetitive and did not facilitate an engaging or dynamic environment.

In Semester 2, 2013, following further co-design among academic staff, students and industry partners, the student presentations evolved into a debate structure that required students to work in a team and present research-informed arguments in a dynamic format. This approach was effective to a point; however, after two semesters (until Semester 1, 2014) it was found that the debate groups did not prepare adequately, and the arguments lacked depth and involved few divergent perspectives.

The ‘design team’ returned to the three spaces of design thinking – *inspiration, ideation, implementation* – in Semester 2 of 2014 and introduced a unique assessment task to replace the debates. This approach revolved around the creation of a Q&A-style panel of (between six and eight) students who role-played diverse characters to assess a predetermined hypothetical entrepreneurial opportunity. One of the lecturers acted as a facilitator, ensuring that the narrative stayed on track with the course learning outcomes. The class was encouraged to engage with the discussion through face-to-face questions or comments via a Twitter feed, which was projected onto the screen. This assessment task was further developed and renamed “Board Room Meeting” in Semester 1 and 2 in 2015, with the introduction of new characters and a group submission in the form of recommendations for the next board room meeting. This assessment approach has been highly successful overall, resulting not only in positive learning outcomes and student satisfaction, but also in a great deal of laughter and engagement among the students. The journey map demonstrating the positive and negative outcomes of the iterative innovation in pedagogy is presented in Figure 2.

INSERT FIGURE 2 AROUND HERE

As the journey map depicts, the initial design and development in 2013 met with mixed outcomes, with a slightly higher level of satisfaction and positive experiences than dissatisfaction and negative experiences. We were, however, aiming higher in co-designing an experience that would deliver greater levels of satisfaction and, importantly, establish a solid platform for further developing the critical capabilities identified earlier in this paper as students progressed through the entrepreneurship programme. By 2015, the learning community that had been fostered as a result of our design thinking-led approach was highly engaged, motivated to excel, and thoughtful and constructive in offering feedback on their journey. The traditional push model had been broken down, replaced by a shared model of knowledge creation and development. The graphical representation presented by the journey map is strongly supported by data collected to ensure that the outcome we co-created and delivered reflected the process of “*learning, building and measuring*” inherent to the Double Diamond Model. The following section discusses this data collection process and the triangulation of the various data sources that will help inform future curriculum development.

Data collection

The course team initiated greater engagement among the students in the curriculum innovation through a series of Focus Group Discussions (FGDs) with students and industry partners, qualitative feedback through surveys and Course Experience Survey (CES) data from Semester 1, 2013, until Semester 2, 2015. The CES is administered by the RMIT University survey services centre through an online survey. CES data has approval from the Business College Human Ethics Advisory Network of RMIT and can be used for research

into teaching and learning practice. The CES forms comprise standard questions pertaining to the Good Teaching Scale (GTS) of academics as well as the Overall Satisfaction Index (OSI) for the course. Since 2012, the CES forms have also allowed academics to choose up to eight additional questions relating to various aspects of the course, such as course content, delivery model, feedback, assessment, course team and learning outcomes. Following the introduction of the lectorial model in Semester 1, 2013, the course team carefully chose additional questions for students related to the curriculum innovation. The findings are based on both course statistics and content analysis of the qualitative feedback provided by students.

Student evaluation of the lectorial model for the Entrepreneurial Process course

The CES data and the qualitative feedback provided by students were analysed in relation to the development of the dynamic delivery model and the redesign of assessments.

Students' overall responses and comments

Figure 3 represents students' propensity to comment about their experience of the course. The comments were divided into two broad categories: a) course experience and student satisfaction; and b) suggestions for course improvements – which was critical for the course team and the students in co-designing a positive learning experience

INSERT FIGURE 3 AROUND HERE

The number of comments provided over the six semesters increased by 270%, from 106 to 392 comments. This increased propensity to comment suggests that, over the period, the student cohort felt increasingly comfortable in expressing their views on the course (McMillan and Chavis, 1986; Osterman, 2000), which appears to be positively influenced

by their perception of fairness in the learning environment (Boyer, 1990; Weimer, 2002; Biggs, 2003), as evidenced by the following comment:

S1 2015 “I love the passion of the teachers. It makes it more real, and a lot more fun. It makes me personally feel like I am not just a student who is less important, but rather an equal with the teachers and it makes me feel more confident to speak up.”

GTS and OSI

Figure 4 represents the data on the GTS and OSI.

INSERT FIGURE 4 AROUND HERE

The increase from 79% to 100% in the OSI scores reflects overwhelming support for the new delivery style and pedagogy, as well as the emerging ability of students to actively engage with the course team in the co-creation of their own learning experiences, as is reflected in the following comments:

S2 2014 “I think that the relationship between the teaching staff helped all the students to feel welcome and equal.”

S1 2015 “Love how this course is highly interactive and if you have any questions or are unsure about anything you can ask at any time and you will get an answer that you can understand.”

Perceptions of justice and equity within the course

Table 1 presents the students' comments that reflect their perception of the three types of justice experienced in the course: distributive (Leventhal, 1976), procedural (Cropanzano and Greenberg, 1997) and interactional (Brockner and Siegel, 1996).

INSERT TABLE 1 AROUND HERE

The observations made by the students highlight the importance placed on open and transparent communication between teacher and student (Gorham and Millette, 1997; Frymier and Houser, 2000). Of specific importance is the nature of the relationship between the student and the course team. The students placed great importance on an equal and trusting relationship (Brockner and Siegel, 1996).

This finding is illustrated by the comments below:

S1 2013 “(TS3) engaged with the students, in a manner which was not strictly curriculum-based, makes you feel as though your class is simply a conversation with an intelligent person – as it should be!”

S2 2014 “The course team is so incredibly motivating and the casual relationship that is encouraged helps induce an argumentative learning environment in which I thrive.”

The use of humour and role-play as teaching tools

Table 2 presents the number of observations made by the students pertaining to the use of humour and role-play in the course content delivery. Of the total of 550 comments, 165 (30%) supported the use of humour (Glenn, 2002; Garner, 2006) and role-play (Shepherd,

2004; Collins *et al.*, 2006; Anderson and Jack, 2008) as means by which a learning environment can be created that is supportive, experiential and entertaining. The small percentage (1%) of negative student responses highlighted the need for humour to be proportionate and appropriate (Garner, 2006; Stebbins, 1980).

INSERT TABLE 2 AROUND HERE

The following comments evidence these findings:

S2 2014 “This course is the pinnacle of learning ... different, interesting, funny, and engaging.”

S1 2015 “I really like the assessments in this course, especially the Q&A sessions which are extremely funny and yet insightful as we fuse concepts from class into a real-life scenario. I think that this way of learning is better for us as a student, because we are encouraged to interact with the reality and speak up in the class by sharing our suggestions with everybody as if it was happening for real.”

S2 2015 “I am not looking forward to going back to a dry lecture environment after this experience.”

Constructivism and classroom community

Table 3 summarises the commentary offered by students in relation to the innovations in course assessments aimed at fostering a constructivist and collaborative learning environment.

INSERT TABLE 3 AROUND HERE

The comment below supports the findings:

S1 2015 “I particularly enjoyed the Q&A segment of the course. It is a new way of collective learning of entrepreneurial skills I have not come across in my many years here at RMIT. Including Twitter capability has made it much more enjoyable and easier to include the audience than a standard questions segment at the end.”

The above comments highlight the positive learning outcomes and satisfaction achieved by the students and that they felt part of a greater learning community (Osterman, 2000; Summers and Svinicki, 2007). The overall level of student satisfaction is summed up by one student’s comment:

S2 2015 “Entrepreneurial Process delivers what I believe should be at the core of every course. It challenges the thinking of students, the assessments are practical and have real-world implications, the textbook is something I can keep referring back to as my career progresses, and the assessments are not so heavily weighted that they become stressful. Also there was a good balance of group and individual assignments.”

Conclusions and further research

This case study presents a design-driven pedagogy for a foundational entrepreneurship course offered at RMIT underpinned by notions of justice, equity and constructivism, and the use of humour and role-play. The results demonstrate that the approach to constant enhancement of curriculum informed by five key considerations in the pedagogical framework for entrepreneurship education brought to life through the double diamond model, significantly improved student satisfaction and learning outcomes.

It is reasonable to conclude that there is no one best way of teaching entrepreneurship (Blenker *et al.*, 2008; Neck and Greene, 2011; Fayolle and Gailly, 2008; Pittaway and Cope, 2007). However, this case study demonstrates that student experience and learning outcomes can be significantly improved via the integration of a design-driven pedagogy delivered in an open and constructivist environment in which humour is adapted as a social ice-breaker (Garner, 2006; Wanzer *et al.*, 2010) and role-play used as an experiential learning tool (Shepherd, 2004; Anderson and Jack, 2008 and Collins *et al.*, 2006). The reduction of hierarchical ‘barriers’ in the learning environment empowered students to become comfortable in ‘owning’ their learning journeys and importantly created accountability in acting on that learning.

Further longitudinal research on the impact of design-led entrepreneurship pedagogy on student satisfaction and learning outcomes is required to validate whether the findings of the present study are culturally neutral. Future research needs also to investigate students’ post-university experiences, and whether this pedagogy increases their competitiveness and effectiveness outside the university environment. As the innovative pedagogy has only been successfully implemented in the Entrepreneurial Process course, comparative research is recommended in other courses and disciplines to determine whether our findings can be generalised to other learning contexts, both in entrepreneurship pedagogy and other pedagogy more generally.

References

- Alden, D. (1999), “Experience with scripted role-play in environmental economics”,
Journal of Economic Education, Vol. 30, No. 2, pp. 127–32.

- Anderson, A.R. and Jack, S.L. (2008), “Role typologies for enterprising education: the professional artisan?”, *Journal of Small Business and Enterprise Development*, Vol. 15, No. 2, pp. 259–73.
- Australian Industry Group and Deloitte (2009), *National CEO Survey: Skilling Business in Tough Times*, The Australian Industry Group, Sydney.
- Beckman, S. and Barry. M. (2007), “Innovation as a learning process: embedding design thinking”, *California Management Review*, Vol. 50, No. 1, pp. 25–56.
- Biggs, J. (2003), *Teaching for Quality Learning at University*, Second Edition, Open University Press, McGraw-Hill Education, UK.
- Blenker, P., Dreisler, P., Faergemann, H.M. and Kjeldsen, J. (2008), “A framework for developing entrepreneurship education in a university context”, *International Journal of Entrepreneurship and Small Business*, Vol. 5, No. 1, pp. 45-63.
- Boden, R. and Nedeava, M. (2010), “Employing discourse: universities and graduate employability”, *Journal of Education Policy*, Vol. 25, No. 1, pp. 37–54.
- Boyer, E.L. (1990), “Scholarship reconsidered: priorities for the professoriate”, Carnegie Foundation for the Advancement of Teaching, Princeton, NJ, in Biggs, J. (2003), *Teaching for Quality Learning at University*, Second Edition, Open University Press, McGraw-Hill Education, UK.
- British Design Council (2005), *The Double Diamond Design Process Model*, UK.
- Brockner, J. and Siegel, P. (1996), “Understanding the interaction between procedural and distributive justice: the role of trust”, in Kramer, R.M. and Tyler, T.R. (Eds), *Trust in Organisations*, Sage Publications, Thousand Oaks, CA, pp. 390–413.
- Brown, K.M. (1994), “Using role play to integrate ethics into the business curriculum: a financial management example”, *Journal of Business Ethics*, Vol. 13, No. 2, pp. 105–10.
- Brown, T. (2008), “Design thinking”, *Harvard Business Review*, Vol. 86, No. 6, pp. 84–92.

- Brown, T. (2009), *Change by Design: How Design Thinking Transforms Organisations and Inspires Innovation*, Harper Business, New York.
- Cable, V. (2011), Oral report at HEFCE annual conference, Ashton University, 6 April, available at: www.gov.uk/government/speeches/hefce-annual-conference-2011.
- Casner-Lotto, J. and Barrington, L. (2006), “Are They Really Ready to Work? Employers’ Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce”, report by The Conference Board, Inc., the Partnership for 21st Century Skills, Corporate Voices for Working Families, and the Society for Human Resource Management, USA.
- Chory-Assad, R.M. (2002), “Classroom justice: perceptions of fairness as a predictor of student motivation, learning, and aggression”, *Communication Quarterly*, Vol. 50, No.1, pp. 58–77.
- Collins, L.A., Smith, A.J. and Hannon, P. (2006), “Applying a synergistic approach in entrepreneurship education”, *Management Learning*, Vol. 37, No. 3, pp. 335–54.
- Conceicao, P. and Heitor, M.V. (2002), “University-based entrepreneurship and economic development: a learning-centred model”, *International Journal of Technology Policy and Management*, Vol. 2, No. 3, pp. 220-39.
- Conrad, C.F., Johnson, J. and Gupta, D.M. (2007), “Teaching-for-Learning (TFL): a model for faculty to advance student learning”, *Innovative Higher Education*, Vol. 32, No. 3, pp. 153–65.
- Crebert, G. (2002), “Institutional research into generic skills and graduate attributes: constraints and dilemmas”, paper presented at the Building Learning Communities through Education: Lifelong Learning Conference, 16–19 June, Yeppon, Queensland.
- Cropanzano, R. and Greenberg, J. (1997), “Progress in organisational justice: tunneling through the maze”, in Cooper, C.L. and Robertson, I.T. (Eds), *International Review*

- of Industrial and Organisational Psychology*, Vol. 12, John Wiley & Sons, London, pp. 317–72.
- Darlaston-Jones, D., Pike, L., Cohen, L., Young, A. and Haunold, S. (2003), “Are they being served? Student expectations of higher education”, *Issues in Educational Research*, Vol. 13, No. 1, pp. 31–52.
- De Faoite, D., Henry, C., Johnston, K. and Van der Sijde, P. (2003), “Education and training for entrepreneurs: a consideration of initiatives in Ireland and the Netherlands”, *Education + Training*, Vol. 45, No. 8, pp. 430–8.
- Fayolle, A. and Gailly, B. (2008), “From craft to science: teaching models and learning processes in entrepreneurship education”, *Journal of European Industrial Training*, Vol. 32, No. 7, pp. 569-593.
- Finkle, T.A. (2007), “Trends in the market for entrepreneurship faculty from 1989–2005”, *Journal of Entrepreneurship Education*, Vol. 10, pp. 1–24.
- Frymier, A.B. and Houser, M.L. (2000), “The teacher-student relationship as an interpersonal relationship”, *Communication Education*, Vol. 49, pp. 207–19.
- Garner R.L. (2006), “Humour in pedagogy: how ha-ha can lead to aha!”, *College Teaching*, Vol. 54, No. 1, pp. 177–80.
- Gibb, A. (2002), “In pursuit of a new ‘enterprise’ and ‘entrepreneurship’ paradigm for learning, creative destruction, new values, new ways of doing things and new combinations of knowledge”, *International Journal of Management Reviews*, Vol. 4, No. 3, pp. 56–77.
- Gilbert, D. (2012), “From chalk and talk to walking the walk: facilitating dynamic learning contexts for entrepreneurship students in fast-tracking innovations”, *Education + Training*, Vol. 54, No. 2/3, pp. 152–66.
- Giroux, H.A. (2010), “Public values, higher education and the scourge of neoliberalism: politics at the limits of the social”, Interzone, *Culture Machine*, available at:

www.culturemachine.net/index.php/cm/article/viewFile/426/444 (accessed 9 September 2015).

- Glenn, R. (2002), “Brain research: practical application for the class room”, *Teaching for Excellence*, Vol. 21, No. 6, pp. 1–2.
- Gorham, J. and Millette, D.M. (1997), “A comparative analysis of teacher and student perceptions of sources of motivation and demotivation in college classes”, *Communication Education*, Vol. 46, pp. 245–61.
- Hannon, P.D. (2006), “Teaching pigeons to dance: sense and meaning in entrepreneurship education”, *Education + Training*, Vol. 48, No. 5, pp. 296–308.
- Hindle, K. (2007), “Teaching entrepreneurship at the university: from the wrong building to the right philosophy”, in Fayolle, A. (Ed.), *Handbook of Research in Entrepreneurship Education*, Edward Elgar Publishing, Aldershot.
- Hoffman, M., Richmond, J., Morrow, J. and Salomone, K. (2002), “Investigating ‘sense of belonging’ in first-year college students”, *Journal of College Student Retention*, Vol. 4, pp. 227–56.
- Huq, A. and Gilbert, D. (2013), “Enhancing graduate employability through work-based learning in social entrepreneurship: a case study”, *Education + Training*, Vol. 55, No. 6, pp. 550–72.
- Hytti, U. and O’Gorman, C. (2004), “What is enterprise education? An analysis of the objectives and methods of enterprise education programmes in four European countries”, *Education + Training*, Vol. 46, No. 1, pp. 11–23.
- Jackson, D. and Chapman, E. (2012), “Non-technical skill gaps in Australian business graduates”, *Education + Training*, Vol. 54, No. 2/3, pp. 95–113.
- Jacob, M., Lundqvist, M. and Hellsmark, H. (2003), “Entrepreneurial transformations in the Swedish university system: the case of Chalmers University of Technology”, *Research Policy*, Vol. 32, No. 9, pp. 1555–68.

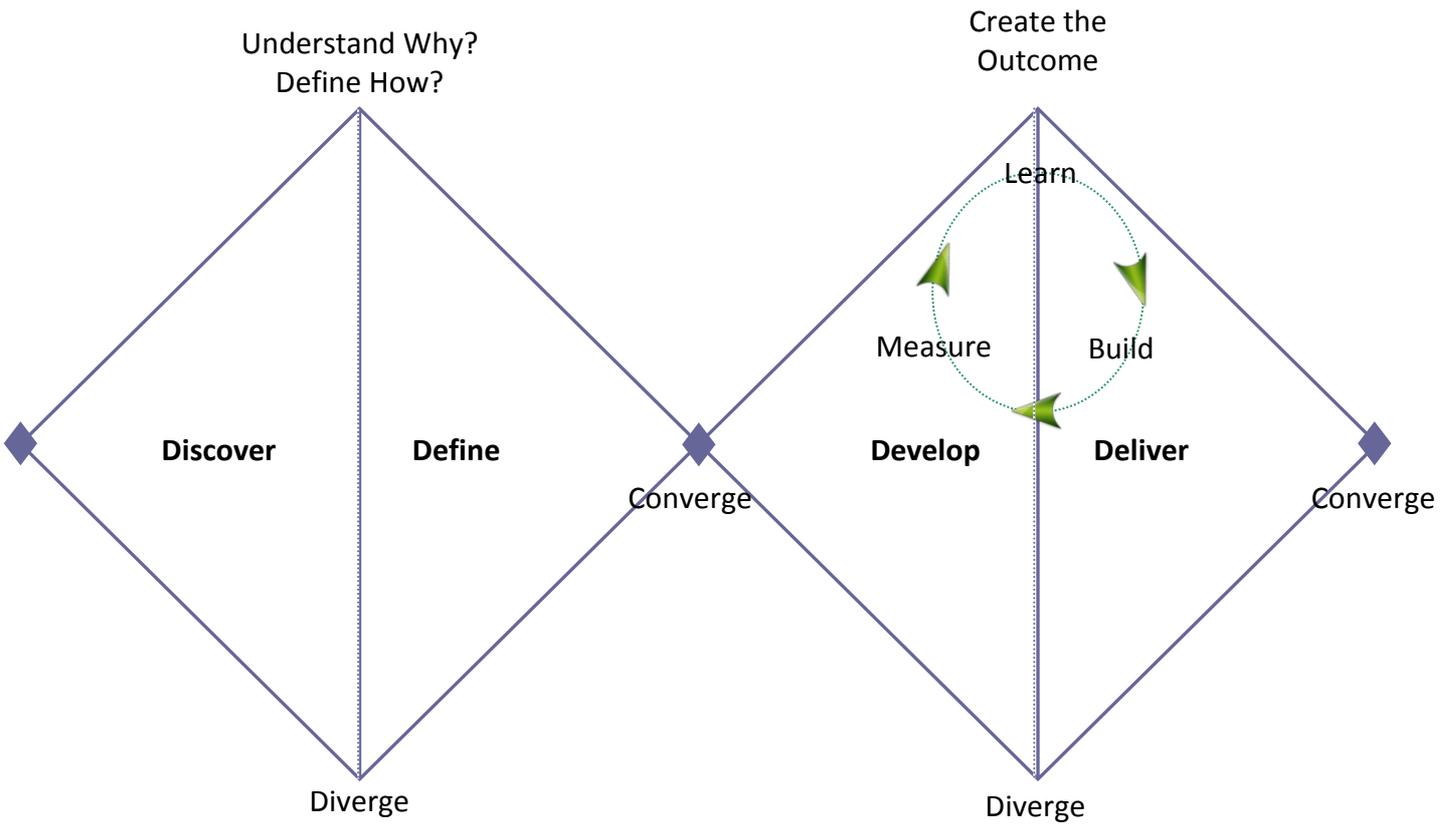
- Johnson, D.W. and Johnson, R.T. (1998), “Cooperative learning and social interdependence theory”, in Tindale, S.R. and Heath, L. (Eds), *Theory and Research on Small Groups: Social Psychological Applications to Social Issues*, Vol. 4, Plenum Press, New York, pp. 9–35.
- Jones, C. (2010), “Entrepreneurship education: revisiting our role and its purpose”, *Journal of Small Business and Enterprise Development*, Vol. 17, No. 4, pp. 500–13.
- Katz, J.A. (2003), “The chronology and intellectual trajectory of American entrepreneurship education”, *Journal of Business Venturing*, Vol. 18, No. 3, pp. 283–300.
- Kearney, P. (1994), “Affective learning”, in Rubin, R.B., Palmgreen, P. and Sypher, H.E. (Eds), *Communication Research Measures: A Sourcebook*, Guilford, New York, pp. 81–5.
- Kuratko, D.F. (2005), “The emergence of entrepreneurship education: development, trends and challenges”, *Entrepreneurship Theory and Practice*, Vol. 29, No. 5, pp. 577–97.
- Leventhal, G.S. (1976), “The distribution of rewards and resources in groups and organisations”, in Berkowitz, L. and Walster, E. (Eds), *Advances in Experimental Social Psychology*, Vol. 9, Academic Press, New York, pp. 91–131.
- Lobler, H. (2006), “Learning entrepreneurship from a constructivist perspective”, *Technology Analysis & Strategic Management*, Vol. 18, No. 1, pp. 19–38.
- Lowden, K., Hall, S., Elliot, D. and Lewin, J. (2011), “Employers’ perceptions of the employability skills of new graduates”, University of Glasgow SCRE Centre and Edge Foundation 2011.
- Martin, R.L. (2009), *The Design of Business: Why Design Thinking is the Next Competitive Advantage*, Harvard Business Press, Boston.

- McMillan, D.W. and Chavis, D.M. (1986), "Sense of community: a definition and theory", *Journal of Community Psychology*, Volume 14, January, pp. 6–23.
- Millican, J. (2014), "Higher education and student engagement: implications for a new economic era", *Education + Training*, Vol. 56, No. 7, pp. 635–49.
- Nelson, L. (2001), "The entrepreneurial university", in A.H. Teich, *et al.* (Eds.) *AAAS Science and Technology Policy Yearbook*, American Association for the Advancement of Science, Washington.
- Neck, H.M. and Greene, P.G. (2011), "Entrepreneurship education: known worlds and new frontiers", *Journal of Small Business Management*, Vol. 49, No. 1, pp. 55–70.
- Opplinger, P.A. (2003), "Humour and learning", in Bryant, J., Roskos-Ewoldsen, D. and Cantor, J.R. (Eds), *Communication and Emotion: Essays in Honor of Dolf Zillmann*, Laurence Erlbaum, Mahwah, NJ, pp. 255–73.
- Osterman, K.F. (2000), "Students' need for belonging in the school community", *Review of Educational Research*, Vol. 70, pp. 323–67.
- Parker, J.D.A., Summerfeldt, L.J., Hogan, M.J. and Majeski, S.A. (2004), "Emotional intelligence and academic success: examining the transition from high school to university", *Personality and Individual Differences*, Vol. 36, pp. 163–72.
- Pittaway, L. and Cope, J. (2007), "Entrepreneurship education: a systematic review of the evidence", *International Small Business Journal*, Vol. 25, No. 5, pp. 479–510.
- Poole, D. and Robertson, B. (2003), "Hunting the snark or leading with purpose: managing the enterprise university", *Journal of the Australian and New Zealand Academy of Management*, Vol. 9, No. 3, pp. 416–30.
- Rae, D. (2010), "Universities and enterprise education: responding to the challenges of the new era", *Journal of Small Business and Enterprise Development*, Vol. 17, No. 4, pp. 591–606.

- Ramsden, P. (2011), "When I grow up, I want to be spoon-fed", *Times Higher Education*, 11 August, available at:
www.timeshighereducation.co.uk/story.asp?storycode=4417059 (accessed 9 September 2015).
- RMIT (2015), "Strategic Plan: Transforming the future", RMIT University website (<http://www.rmit.edu.au>).
- RMIT WIL Policy (2007), "Work Integrated Learning at RMIT: Current Practices and Recommendations for the Future", RMIT University website (<http://www.rmit.edu.au>).
- Rovai, A.P. and Lucking, R. (2003), "Sense of community in a higher education television-based distance education programme", *Educational Technology Research and Development*, Vol. 51, pp. 5–16.
- Schwartz, M. (2006), "For whom do we write the curriculum?" *Journal of Curriculum Studies*, Vol. 38, No. 4, pp. 449–57.
- Seikkula-Leino, J. (2008), "Advancing entrepreneurship education in the Finnish basic education: the prospect of developing local curricula", in Fayolle, A. and Kyro, P. (Eds), *The Dynamics between Entrepreneurship, Environment and Education*, Edward Elgar, Cheltenham.
- Seikkula-Leino, J., Ruskovaara, E., Ikavalko, M., Mattila, J. and Rytkola, T. (2010), "Promoting entrepreneurship education: the role of the teacher?", *Education + Training*, Vol. 52, No. 2, pp. 117–27.
- Shane, S. (2004), "Encouraging university entrepreneurship? The effect of the Bayh-Dole Act on university patenting in the United States", *Journal of Business Venturing*, Vol. 19, No. 1, pp. 127–38.

- Shepherd, D. (2004), "Educating entrepreneurship students about emotion and learning from failure", *Academy of Management Learning and Education*, Vol. 3, No. 3, pp. 274–87.
- Simon, H. A. (1996). *The Sciences of the Artificial*. Cambridge, MA: MIT Press
- Stebbins, R.A. (1980), "The role of humour in teaching: strategies and self-expression", in Woods, P. (Ed), *Teacher Strategies*, Croom Helm, London.
- Stefani, L. (2009), "Planning teaching and learning: curriculum design and development", in Fry, H., Ketteridge, S. and Marshall, S. (Eds), *A Handbook for Teaching and Learning in Higher Education: Enhancing Academic Practice*, 3rd ed, Routledge, New York and London.
- Summers, J.J. and Svinicki, M.D. (2007), "Investigating classroom community in higher education", *Learning and Individual Differences*, Vol. 17, pp. 55–67.
- Wanzer, M.B., Frymier, A.B. and Irwin, J. (2010), "An explanation of the relationship between instruction humour and student learning: instructional humour processing theory", *Communication Education*, Vol. 59, pp. 1–18.
- Weimer, M. (2002), *Learner-Centred Teaching: Five Key Changes to Practice*, Jossey-Bass, San Francisco.
- West, G.P., Gatewood, E.J. and Shaver, K.G. (2009), "Legitimacy across the university: yet another entrepreneurial challenge", in West, G.P., Gatewood, E.J. and Shaver, K.G. (Eds), *Handbook of University-wide Entrepreneurship Education*, Edward Elgar, Cheltenham and Northampton, MA, pp. 1–11.

‘All the world’s a stage: transforming entrepreneurship education through design thinking’ – figures



Source: British Design Council (2005)

Figure 1: Double Diamond Model

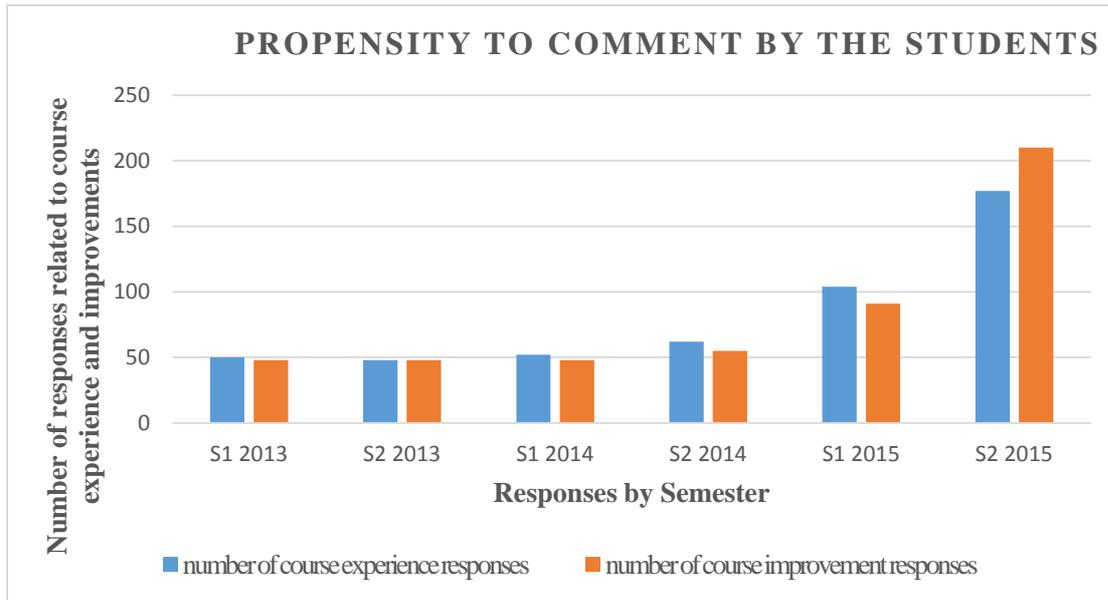


Figure 3: Students' propensity to comment on their course experience and course improvements

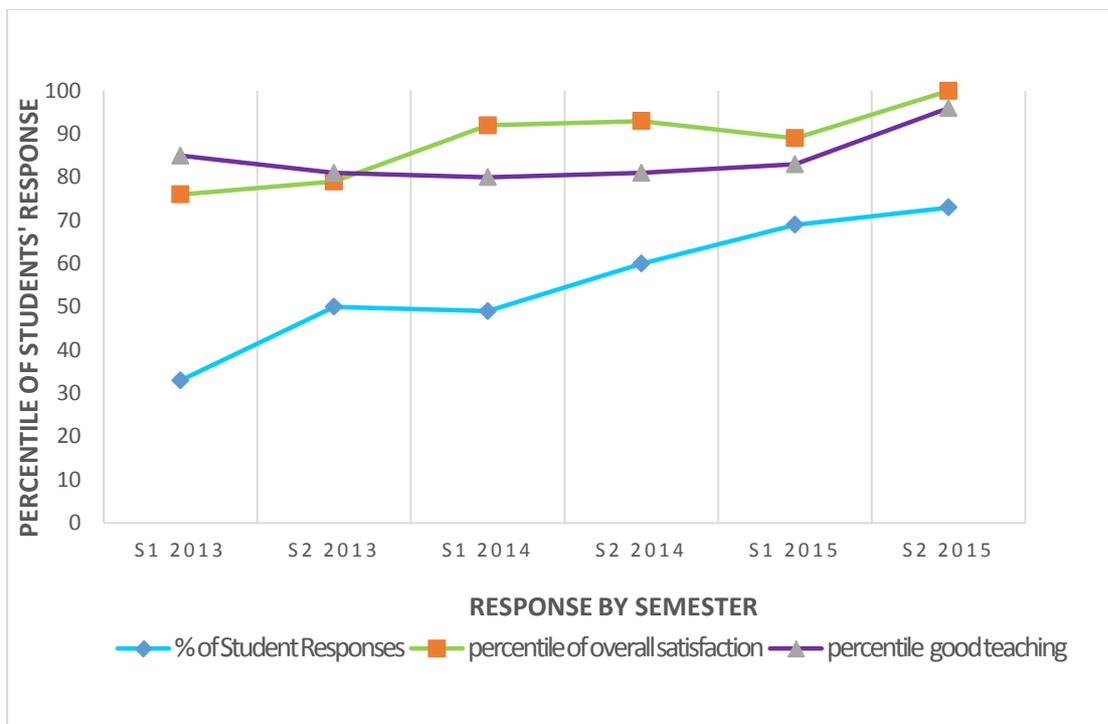


Figure 4: Good Teaching Scale (GTS) and Overall Satisfaction Index (OSI)

Transforming entrepreneurship education through design thinking – tables

Table 1: Frequency and percentage distribution of students' comments reflecting course experience pertaining to justice and equity

Period	Comments							Overall	
	Distributive		Procedural		Interactional		Justice total		
	(n)	%	(n)	%	(n)	%	(n)	(n)	%
S1 2013	1	14%	1	14%	5	72%	7	55	13%
S2 2013	1	7%	3	21%	10	72%	14	48	29%
S1 2014	2	14%	2	14%	10	72%	14	59	24%
S2 2014	1	3%	10	29%	23	68%	34	70	49%
S1 2015	0	0%	8	22%	28	78%	36	103	35%
S2 2015	3	6%	19	37%	29	60%	51	177	29%
Total	9	4%	433	28%	105	68%	1566	51212	30%

Table 2: Frequency and percentage distribution of students' comments reflecting course experience pertaining to the use of humour and role-play

Period	(n) Positive comments			%	(n) Negative comments		
	(n) Humour and role-play	(n) Overall	(n) Humour and role-play		(n) Overall	%	
S1 2013	1	55	2%	0	55	0%	
S2 2013	7	48	15%	0	48	0%	
S1 2014	9	59	15%	2	59	3%	
S2 2014	22	70	31%	2	70	2%	
S1 2015	29	103	28%	0	103	0%	
S 2 2015	97	215	45%	1	215	0%	
Total	165	550	30%	5	550	1%	

