VISUAL EXPERIENTIAL LEARNING
Enhanced Entrepreneurial Learning

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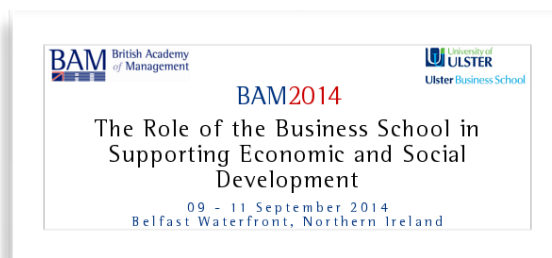Dr Paul Jones, Reader, Futures Entrepreneurship Centre, Plymouth University.
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This study considers the impact of an experiential visual based learning pedagogy on students undertaking a business-start up module. The current undergraduate student is different with a dependency culture on a range of electronic media (e.g. mobile phone, laptop, tablets) underpinning their existence. The term "digitally demanding" has been coined to describe such individuals. Such individuals think and act in a different way expecting immediate personal solutions to problems they encounter.

Thus there is a need to challenge their mind-sets and thought processes to think in a creative and innovative manner to identify appropriate decisions. Educational pedagogy requires a significant mind shift to create enterprising and creative individuals for the modern organisation. The focus of this study is upon enabling students to develop a valid and robust business idea through use of visual learning methods that is described here as "rapid entrepreneurial action."

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Enhanced Entrepreneurial Learning through Visual Experiential learning

Introduction

The focus of this study is to consider the impact of experiential action learning visual based methods on undergraduate students undertaking an <u>entrepreneurial business-start up module</u>. There has been exponential growth in use of the internet, social media and online communication in recent years. As a consequence, the current undergraduate student is different with a dependency culture on a range of electronic media (e.g. laptops, tablets and mobile phones) employed for online communication, social media interaction and information searching. The term <u>"digitally demanding"</u> has been utilised by several technology providers to describe such individuals. Such individuals think and act in a different way, expecting immediate personal solutions to problems faced. Thus there is a need to challenge their mind-sets and thought processes to think in a creative and innovative manner to identify appropriate decisions.

The current UK educational system is typically a <u>linear classroom based teacher led "chalk and talk" model</u> that is driven by the achievement of specific learning outcomes. Such an approach does not effectively support the current digital generation or encourage creativity within individual students. Indeed, students typically adopt a transactional mindset where all activity is focused on the completion of assignments and not a deeper understanding of the subject studied. The purpose of the University sector should be <u>to prepare graduates for both employment and self-employment</u> (Pukelis et al., 2007). However, studies have questioned the effectiveness of the University sector in providing the appropriate skills required by industry (Archer and Davison, 2008). Archer and Deacon (2008) suggest the need to provide graduates with deep intellectual capabilities and a range of practical skills to make them <u>more "work ready"</u>. Educational pedagogy <u>requires a significant mind shift to create enterprising and creative individuals</u> suitable for the modern organisation. The focus of this study is upon enabling students to develop a valid and robust business idea through use of visual learning methods that is described here as "rapid entrepreneurial action."

There is ongoing interest in encouraging entrepreneurial activity for young people on a global basis (Roffe, 2010) and it has climbed the political agenda in the UK (Witty, 2013; Fifth Report by the All-Party Parliamentary Group for Micro Businesses, 2014) Entrepreneurial activity has been proposed as the mechanism to <u>enable economic recovery </u>from a long period of economic recession (Matlay and Carey, 2007; Jones and Jones, 2011) through small business start-up and growth (Rae, 2010). As a result there has been significant expansion of entrepreneurship education provision across the University sector. For example, in 2009, the NIRAS survey identified that 24% of HE students in Europe were engaged in enterprise education, with 48% of HEIs providing it as part of their curricula. However on-going questions remain regarding the effectiveness and impact of this provision in providing fit for purpose graduates capable of undertaking a viable business startup due to the reliance on the chalk and talk approach considered previously. Recently, in the UK, there have been attempts to reconsider entrepreneurial education provision with the Quality Assurance Agency (QAA) (2012) providing detailed guidelines on entrepreneurial education. Within this report the need to <u>create enterprising mind sets</u> is identified.

Moreover, the need to challenge student thinking and make explicit the <u>need for creativity and innovation</u> are emphasized. The next section will consider the key literature associated with this area of study. Thereafter, the methodology utilised within this study will be profiled.   Thereafter, key findings are presented followed by conclusions arising from the investigation.

Literature

Within the Higher Education sector, it is widely recognised that the more <u>motivated students are to learn</u> the more likely they are to be successful in their programmes of study. Effective student engagement has been identified as critical to student motivation during the learning process. This is particularly relevant in the United Kingdom (UK) Higher Education sector where the National Student Survey (NSS) has placed additional pressure on the University sector to <u>provide an effective and engaging student experience</u> within the programme of study. Furthermore, this can prove especially challenging with students from many different nationalities and cultures which is the norm for a UK university.

It is widely recognised that most industrialised countries have witnessed a significant proliferation of <u>enterprise education provision</u> (Matlay and Carey, 2007). This has been driven by the need to encourage economic recovery and create more self-employment opportunities (Jones and Iredale, 2010). Enterprise education has emerged as one of UK Governments' <u>key drivers to develop individuals</u> with higher level general skills, effectively equipped to function in an enterprising manner and capable of recognising and exploiting emerging opportunities (Jones and Iredale, 2010). The primary focus of entrepreneurship education is on <u>starting, growing and managing a business</u> (Roffe, 2010). One method of achieving these skills is through undertaking a business start-up activity with a supporting business plan as part of a formal educational experience. Russell et al., (2008) and Jones and Jones (2011) noted business plan activities have been found to provide several benefits to participants, the most significant being the development of entrepreneurial skills, access to mentors, opportunity for networking and increased self-confidence and risk-taking propensity.
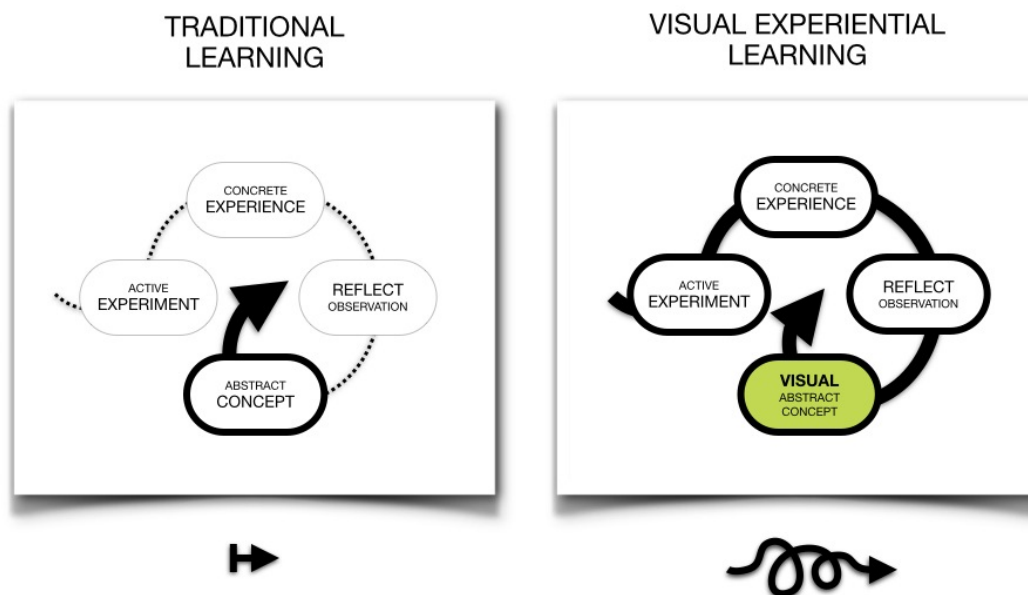
Barringer (2009) describes the business plan as an instrument of risk management through which internal and external benefits can be achieved. Hisrich et al. (2010) describes the <u>business plan as a "road map"</u> outlining a development plan for the business start-up process. However, there has been ongoing debate within academia regarding the effectiveness of taught entrepreneurship education and its effective delivery (Jones et al., 2008). Indeed, Jones (2011) suggests that entrepreneurship education does not provide many student led start-ups. Business Plans have been criticised as resembling a work of fiction that can <u>overcomplicate the start-up process</u>, lead to false directions and impede creativity (Mullins and Komisar, 2009; Jones and Penaluna, 2013). Thus, there is a need to explore and disseminate effective methods of enabling and supporting <u>flexible business start-up activity</u> within the University student population. The next section discusses the methodology employed within this study.

Research Methodology

The study evaluates the use of visual learning methods to enable student learning. In this study, the chosen pedagogical approach was to enhance the student learning experience through visual learning. This decision was made by the academic team and an external consultant (graphic facilitator) who had extensive industry experience of using visual thinking to develop organisations & individuals (including start ups, company turnarounds, change programmes, leadership development etc).

The phenomenon of thinking through visual processing or visual thinking is best described as seeing words as a series of pictures and is typically used by up to 65% of the population (Deza and Deza, 2009). Visual learning draws its theoretical underpinning from several models of leaning styles including Kolb's (1984) Experiential Learning Model (ELM), Fleming's (2001) VARK Neuro-linguistic programming model. Such models promote the value of experiential and visual learning. Use of visuals in the learning process can promote students ability to organise and process information (McKendrick and Bowden, 1999). Visuals can also be utilized to challenge students to think on levels that require higher order thinking skills (Smith and Blankinship, 2000).

Figure 1: Kolbs Cycles for Tradition & Visual Experiential Learning

The process also embeds a cycle of ongoing reflective practice which derived from Schön (1983 and 1987) and Kolb (1984). Within this process was the requirement for receiving continuous feedback from the tutors and fellow students. This enabled the students to reflect on the feedback and acquire new information to enhance the business idea.

The study considers the use of such learning methods to enable the development of a business idea to enable a potential entrepreneurial start-up.

A flexible learning space was developed that enabled both one to one and one to many tutor instruction and focused on the utilisation of visual thinking and facilitation. A pedagogical learning process was developed within which a flexible learning path was designed to provide multiple routes towards the development of a business idea. The entire project was underpinned with core principles of providing a personalised, creative, practical and collaborative ethos. Every step in this process was underpinned with an ongoing reflection with constant redesign and enhancement. To evaluate the effectiveness of this process, several data collection strategies were utilised including semi-structured interviews, focus groups and ongoing staff and student reflections.

Sample and Approach

This study focuses on a pilot study of 20 undergraduate students studying on a Business Start-up module at Plymouth University. At the outset of the learning programme it was decided by the module team to use a novel pedagogical approach to more effectively enable a business start-up process.
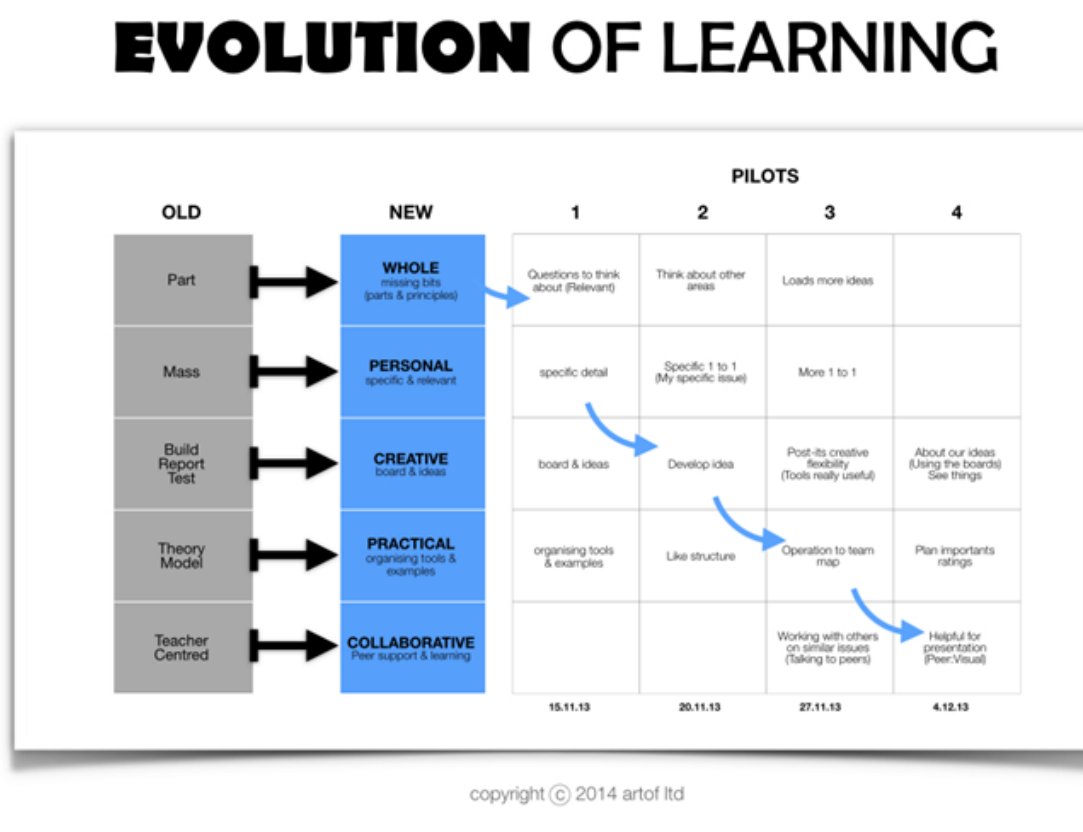
The module team comprised of two experienced full time academics, an external consultant and several entrepreneurs in residence. It was decided not to have weekly lessons but three weekly block sessions. Initially students would meet regularly with tutors on a one to many basis to develop their business idea using a novel visual learning method to construct a valid and robust idea. Once this process was completed students would work on a one to one basis with an individual tutor to further develop their idea to a point where business start-up was feasible proposition.

In the initial one to many stages the business idea was formulated incrementally with a session focused on idea creation, business design & business planning. Within each session, students were asked to consider the focus of the business session and visually construct their thinking using white boards, marker pens and stick it notes. Tutor provided support during this process.   Thereafter, fellow students and tutors provided feedback regarding their thoughts on the individual's presentation. With each session an additional element was added to the business idea. Each student could then reflect on the feedback and then use it to enhance the element of the business idea.

This pedagogical approach is a dynamic, innovative, collaborative and learner led process that places creativity at its core. This visual led pedagogy engages and empowers collaborative and peer learning. This process effectively supports a dynamic business start-up process with a need for iterative as opposed to linear development with ongoing reflection, reiteration and creativity as a central focus. This is a fluid, dynamic, open and creative process that solves problems whilst enabling personal development. The next stage will provide an overview of the results achieved from this process.

Findings

This pilot study provided an insight into a new dynamic pedagogical process. Feedback from students at each pilot session helped develop the pedagogy, Figure 2 below shows this evolved. It profiles the change in mind set from a typical linear structured learning model focused around a one to many teaching centre model to the collaborative, visual approach employed.

EVOLUTION OF LEARNING

OLD	NEW	PILOTS			
		1	**2**	**3**	**4**
Part	**WHOLE** missing bits (parts & principles)	Questions to think about (Relevant)	Think about other areas	Loads more ideas	
Mass	**PERSONAL** specific & relevant	specific detail	Specific 1 to 1 (My specific issue)	More 1 to 1	
Build Report Test	**CREATIVE** board & ideas	board & ideas	Develop idea	Post-its creative flexibility (Tools really useful)	About our ideas (Using the boards) See things
Theory Model	**PRACTICAL** organising tools & examples	organising tools & examples	Like structure	Operation to team map	Plan importants ratings
Teacher Centred	**COLLABORATIVE** Peer support & learning			Working with others on similar issues (Talking to peers)	Helpful for presentation (Peer:Visual)
		15.11.13	20.11.13	27.11.13	4.12.13

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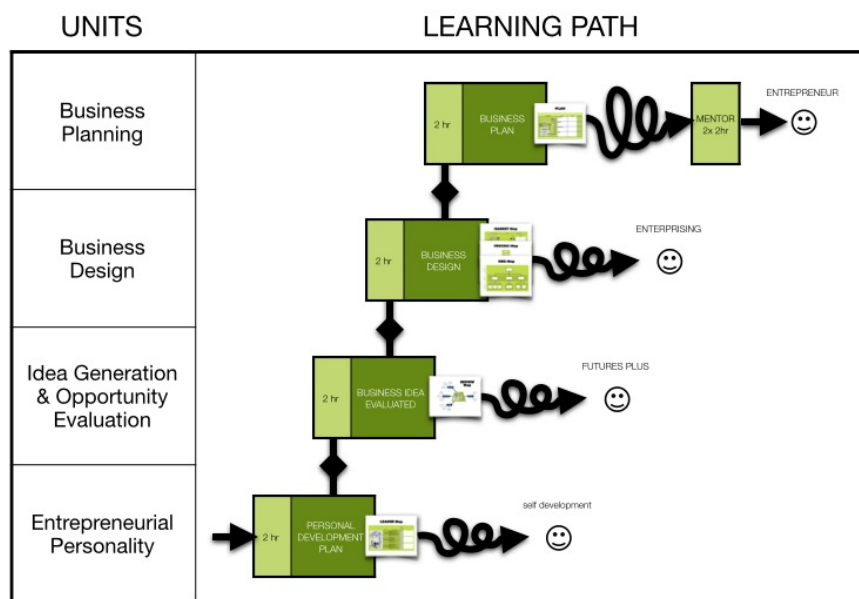**Figure 2**: Leaning Theory Employed & Feedback from Students

It made the business creation process a dynamic and evolving dynamic with regular contributions from all involved. Participants drove the process and sessions were based upon evolving their business ideas. Students were removed from a comfort zone whereby they had to visually construct their business plan and pitch which was open to peer and tutor comment. This allowed the students to demonstrate their ongoing thinking which enabled ongoing creative development and conceptualisation and assessment.

This process allowed the students to recognise mistakes and omissions and enhance their business ideas. Participants were able to recognise problems and develop solutions to complex problems. The visual interpretation of the business idea enabled the students to clearly conceptualise and reflect on the validity of the holistic idea.

It was recognised from the outset of the module that the design of the module was resource intensive with non-standard scheduling required and two academic staff, a consultant and several Entrepreneurs in Residence involved in the delivery. It was felt that this could be justified in attaining the end result of viable business opportunities that could result in a graduate start-up. In the initial weeks there was a need to inform students regarding the nature of the learning experience to come.

The initial experience was that <u>students were conditioned to act as passive learners within a traditional learning environment of a large lecture</u>. This was <u>particularly true of international students</u>. Chinese students in particular felt uncomfortable about having to present their ideas visually. Thus there was a need to practice the skill of visual presentation on a weekly basis to ensure the students feel comfortable with the process. It was also found that there was a <u>need to develop self-reflection skills</u>. Such skills enabled the students to effectively consider the value of the business idea and also <u>their own performance and contribution</u>.

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Figure 3: Curriculum Path & Module Content

Figure 3 diagrammatically describes the components of the learning process. The process initiates with the students choosing the module and the recognition that they need to act in an entrepreneurial manner to achieve the objectives of the module. Thereafter, the focus turns towards the idea and its evaluation. During this stage alternatives are considered and appraised. Students are taken through a number of business idea creation exercises to

support and encourage the development of an innovative idea. Once a valid idea is chose the next stage of business design is undertaken.

The business design process occurs over several weeks. During this stage the students develop the various elements of their idea, e.g. Operations Process (how to deliver the offer), Organisation Chart (personal roles, who needs to be in the team).

Figure 4: The Curriculum Path & Visual Business Design Tools

Visual learning is utilised at this stage for individual students to refine each element of their business idea. This is supported by desk research undertaken by the students to underpin the idea. At each stage the students receive feedback from their peer group and tutor group to further refine their idea.

Figure 5: Visual Tool 'How to' Tutorial

The curly arrow in Figure 2 represents the process of the students receiving feedback, reflecting on their idea and undertaking further refinement to enhance its viability. Once the design stage is completed the process moves from a one-to-many process to an individual mentor stage.

Therein tutors work with individual students to refine their ideas to the point of start-up. Thereafter, students have a choice of seeking internal seed corn funding from the Futures Centre to enable them to undertake a graduate start-up.

Figure 6: Visualising their Ideas

Figure 6 provides a visual example of an students attempts at visual learning for their business idea In this example, the students have constructed their business idea using post-it notes. Figure 7 shows the visualised business plans being presented and collaborative peer learning taking place.

Figure 7: Students Pitching to Peers & Mentoring each Other

It was apparent that there were several barriers to overcome to enable the above process to be undertaken effectively. From a **tutor perspective** there was a need to **act as learning guides and mentors** rather than in a traditional lecturers/teachers role.   Moreover, the tutors had to embrace the iterative and reflective nature of the learning process which took time to perfect.

Similarly, the students found it challenging to change their mindset and learning approach to embrace the iterative and reflective nature of the learning process. In addition, it took time to develop the students skills set to be able to visually represent their ideas effectively. International students found this process particularly challenging.

However, despite these issues it was apparent that the process was fit for process. The process enabled the development of viable business ideas that were viable. The process also supported <u>quick learning</u> whereby students could <u>rapidly progress through the learning and development process to a point of business start-up</u>.

Figure 8: Student Visualising their Thinking at their Own Pace

The student feedback suggested that they found the process challenging but enjoyable and recognised that it had developed their soft skills. The next sections will draw conclusions, recommendations and identify further research on the process.

Conclusions/implications

This pilot study has demonstrated that the use of visual learning as a valid and novel pedagogical process in entrepreneurial learning to enable business idea development. The process proved to be <u>flexible, student focused</u> and <u>effectively enabled individualised</u> learning. The learning journey supported <u>"fast learning"</u> whereby students could progress towards the ultimate goal of business start-up <u>at their own pace.</u> This learning style supported reflective and student led learning with a <u>holistic process of reiteration</u> within a supportive and creative environment. The learning pedagogy supported Kolb's (1984) model of imbedded reflection

Students were <u>not afraid to fail</u> and were encouraged to <u>seek alternative and creative business solutions</u>. A criticism of the traditional University learning process is that knowledge is provided in <u>compartments and silos with no collective merging of the curriculum</u>. This process overcomes this shortcoming and forces participants to develop the business idea as a multi-faceted concept that embraces all elements of the business. Thus the learning process is as important at the end product of the feasible business plan.

A further advantage of the process was that it <u>enabled capable students to act as mentors</u> for students with less developed ideas. The student group were able to evidence a range of soft skills development including enhanced communication, critical thinking and problem

solving. The process supported the development of a business start-up plan that was fit for purpose and had creativity and reflection at its core (Hisrich et al., 2010). Such a strategy overcomes the shortcomings of business plans discussed previously (Mullins and Komisar, 2009; Jones and Penaluna, 2013). The disadvantages of this approach are that it is resource intensive and requires a change in mindset and thinking from all participants to be successful.

The visual learning approach is ideal for entrepreneurship in this it enables the learner to undertake a reflective and creative journey towards idea development and refinement optimising their resources and personal skills towards a business start-up. Such an approach confirms Sarasvathy's view of the entrepreneur as an imaginary effectuator.

In terms of future development, the principles of this learning style could be replicated through online learning systems or business applications to provide scalable mass customised entrepreneurial learning solutions. Use of web applications might make visual learning less resource intensive. There is a need for further evidence to further refine this learning process and disseminate it to the wider community. The authors recognise that this study is limited to one cohort experiences on one module in a single University institution. Further research is required to extend this pilot and assess this pedagogical approach across different educational sectors.

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