

## A REVIEW OF THE USE OF BUSINESS SIMULATION TO ENHANCE STUDENTS' EMPLOYABILITY (WIP)

Arwa Asiri, Andrew Greasley and Paul Bocij  
Operations & Information Management Group  
Aston University  
Birmingham, UK

[asiriama@aston.ac.uk](mailto:asiriama@aston.ac.uk), [a.greasley@aston.ac.uk](mailto:a.greasley@aston.ac.uk), [P.BOCIJ@aston.ac.uk](mailto:P.BOCIJ@aston.ac.uk)

### ABSTRACT

This paper investigates the potential use of business simulation games in enhancing employability skills of undergraduate business students in UK higher education institutions. It identifies the meaning of employability to different stakeholders in order to generate a list of skills that are considered important to various stakeholders as employers, government and academics. The benefits and learning outcomes as well as perceived limitations of business simulation games are then defined. Employability skills that can be improved using business simulation games and the importance of mapping and testing employability skills developments in simulation business environment are recognised.

**Keywords:** business simulation games, employability skills, Higher education institution (HEI)

### 1 INTRODUCTION

The educational process is frequently criticized for failing to provide students with employability skills (Bennis and O'Toole 2005). This failure can be divided into two main parts: the management theories being taught are not relevant (Chia and Holt 2008) and the process used to teach students are outdated (Bennis and O'Toole 2005). To overcome these weaknesses, this paper introduces business simulation as an approach aimed at bridging the gap between theory and practice. This is achieved by allowing students to apply theories and develop their employability skills within a business simulation course. The structure of the paper is organized as follows. A review of the literature on employability is presented including definitions of employability and various viewpoints on what are considered important employability skills. Then a review of the use of business simulation games in Higher Education (HE) is discussed in terms of its definition, advantages, learning outcomes, employability skills developed and limitations. Finally further work is outlined as a results of the review presented.

### 2 LITERATURE REVIEW

#### 2.1 Employability

The concept of employability derives primarily from the requirements of employers of which the government aim to support. However, as Cox and King (2006) state, employability is also a matter for students and subsequently universities. The concept of employability is thus reviewed from the perspectives of employer, student and government.

From an employer perspective, employability is the capability of a student to show attributes that employers expect to be necessary for their organization to function effectively. Research conducted with employers suggested three categories of employability skills: professional competencies, business skills and personal attributes. Professional competencies including communication skills, the ability to apply knowledge, logical thinking and critical analysis were found important (Barker 2014). In terms of business skills required, skills of problem solving, work of high quality, team-working, time management and initiative were of high importance (Barker 2014). The personal attributes that considered crucial for employers were enthusiasm, self-motivation, maturity, flexibility and adaptability (Barker 2014). Further research that considers employers view on employability skills highlights the importance of several skills to employers including problem solving, self-confidence, working in teams and positive attitude (Wickramasinghe & Perera 2010). Additionally, Andrews and Higson (2008) identified the lack of interpersonal skills of graduates as an issue that concerns employers.

From a student perspective, employment is not the same as employability, being employed means having a job and employability means having the qualities required to obtain a job and advance in a workplace. Thus, employability from an HE perspective is about producing graduates who have the abilities and capabilities to maintain employability. Similar to employers, academics highlighted important employability skills for graduates to acquire. According to Wickramasinghe and Perera (2010), the most important employability skills for graduates, university lecturers and employers were problem solving, team-working and self-confidence. Female graduates and employers also identified positive attitude as an important skill. Additionally, Sulphrey (2015) suggested that students need more development in basic numeracy and literacy, critical thinking, IT and system thinking skills. Further research taking into consideration employers and students perception of important employability skills states that time management, writing communication, leadership and handling ambiguous situations were found important from both employers and students (Bhanugopan and Fish 2009).

From a government perspective, several government frameworks have provided insight of employability skills and various skills that have been highlighted in frameworks that discuss employability (Yorke and Knight, 2006). In addition there are several initiatives and programs funded by government to support employability skills development within higher education in order to enhance graduates' employability. Some of these programs and initiatives include modifying existing course content in respond to employers' requirements, introducing new courses and teaching methods as well as providing more opportunities for work experience, and introducing work-based learning programs such as placement and internships (Mason, Williams and Cranmer 2009). Because it is important to select the skills that are valuable to all stakeholders, a list of employability skills that can be created based on these perspectives could include aspects such as communication, team-working, problem solving, time management, IT, numeracy, business and customer awareness, leadership, and positive attitude. It is proposed that these are the kind of skills that need to be measured to test whether business simulation can assist in developing employability skills of undergraduate business students.

## **2.2 Simulation as a pedagogic tool**

A computer simulation can be defined as a model or software package which simulates a business decision. Business games are one of the most popular forms of business simulation used in management education. Business games are a form of simulation in which the software is preprogramed (Curry and Moutinho 1992). The use of a business simulation game as a pedagogic tool is not new. It has been around for more than 50 years in the USA. It is argued that the use of simulation games has been found to be effective as a learning tool (Keys and Wolfe 1990). This paper focuses on investigating the role of business simulation in enhancing students employability for a number of reasons: first, due to high pressure on universities to

produce employable graduates, number of initiatives and programs have been introduced (Mason, Williams and Cranmer 2009). One of these initiatives is the use of business simulation games. Studying the benefits of this type of simulation in terms of developing employability skills of students will provide great insight and better understanding of whether these simulation can deliver what it promises to achieve. Second, not all students are able to find work experience, thus, using other pedagogic methods such as simulation can be beneficial to support students in developing essential skills needed in any workplace. Third, despite its established reputation as alternative method of teaching managerial skills and the evidence that simulations are valid teaching methods, researchers argue that the full potential of simulations have not been discovered yet (SALAS et al. 2009; Vos and Brennan 2010). In the UK, many Universities are now utilizing business simulation games to teach their students about small businesses, entrepreneurship and employability skills (Sharif and Ranchhod 2009).

In terms of the educational value of business simulation games, research suggests that students experience valid representation of business issues in the real world (Faria 2006). In the UK, research implies that enthusiasm of students is very positive for business games (Vos and Brennan 2010) with evidence of increased students' engagement compared to a lecture based teaching method (Strachan 2011). In addition, students perceive simulation as an effective learning method compared to case studies (Jennings 2002) and that simulation bridges the gap between theory and practice (Avramenko 2012). It also allows players to compare their performance against each other and against the real-life data of industry and helps them to reflect upon their actions by ensuring quick and detailed feedback (Musselwhite 2006).

As universities are facing continuous pressure to develop creative courses to meet business community demands (Iuliana et al. 2014), serious business simulation games can help students gain the skills awareness that they need as graduates. Reality based and experiential learning is found useful in enhancing employability skills including: strategy development, time management, team building and negotiation skills (Doyle and Brown 2000). Additionally, simulation games encourage decision making and team-working (King and Newman 2009). It is also effective in improving the quantitative skills of students (Whitely and Faria 1989). Because business simulation is designed to replicate real economic, market and business related problems, they can develop problem solving and analytical skills of students (Clarke 2009).

Thus there is growing evidence that business simulation games are a valuable tool to support traditional methods of teaching such as lectures, seminars and tutorials. In addition business simulation can provide a creative provision of work experience for students across different disciplines (Avramenko 2012; Vos and Brennan 2010). However even though business simulation provides a complex view of business environments, they have been criticized for several reasons. First, it is hard to replicate real life experiences and decision making activities although it is accepted that business simulation games are as close to reality as students' will be able to experience without real life experience in a business context (Strachan 2016). Another limitation related to computer-based business simulation in an educational setting is the focus on gaming rather than learning (Doyle and Brown 2000). A possible solution is continuous facilitation to engage the abstract thinking of learners beyond the computer screen restriction (Avramenko 2012). Table 1 presents the benefits and limitations of the use of business simulation in the context of its use for employability.

Table 1: Summary of business simulation benefits and limitations

<b>Benefits/Limitation</b>	<b>Description</b>	<b>Reference</b>
<b>Benefits</b>		
- Simplified real world	Students experience valid representation of business issues in the real world	Faria 2006
-		Vos and Brennan 2010
- Students' enthusiasm	Enthusiasm of students is very positive	
-		Strachan 2011
- Students' engagement	Increased students' engagement compared to lecture based teaching method	Avramenko 2012
- Bridging the gap	Bridges the gap between theory and practice	
- High effectiveness	Effective compared to other methods of teaching	Jennings 2002
-		Musselwhite 2006
- Learning by comparison	Compare their performance against each other	
-		Musselwhite 2006
- Experiential learning	Helps them to reflect upon their actions by ensuring quick and detailed feedback	Doyle and Brown 2000
-		Doyle and Brown 2000
- Skills awareness	Helps students gain skills awareness that they need as graduates	
-		Doyle and Brown 2000
- Strategy development	Gives the players experience in developing strategies	Doyle and Brown 2000
-		Doyle and Brown 2000
- Time management	Provide practice of working towards deadlines	Doyle and Brown 2000
-		Doyle and Brown 2000
- Negotiation skills	Increase the possibility of negotiation among team and across teams of players	King and Newman 2009
-		Whitely and Faria 1989
- Decision making and team-working	Encourage decision making and team-working	Clarke 2009
- Quantitative skills	Effective in improving the quantitative skills of students	
- Problem solving and critical thinking	Develop problem solving and analytical skills of students	
<b>Limitations</b>		
- Not adequate	Cannot replicate real life	Strachan 2016
-		Doyle and Brown 2000
- Gaming	Students do not take it seriously	
-		Faria and Wellington 2004
- Model limitation	Application of relevant theory is limited by simulation model	

---

<ul style="list-style-type: none"> <li>-</li> <li>- Complexity</li> <li>-</li> <li>- Culture differences</li> </ul>	<p>Increased number of variables and their relationship is offered by latest simulation</p> <p>Business games usually do not allow students from different cultures to learn effectively</p>	<p>Anderson and Lawton 2009</p> <p>Chang et al 2003</p>
---	--	---

---

### 3 CONCLUSION

This paper considers student employability definitions and identifies the meaning of employability to stakeholders such as employers, academics and governments. The role of simulation as a teaching and learning tool is then considered. Further work aims to investigate the use of business simulation games in equipping students with the employability skills identified.

### REFERENCES

- Anderson, Philip H. & Lawton, Leigh. 2009. "Business Simulations and Cognitive Learning". *Simulation & Gaming* 40 (2), pp. 193-216.
- Andrews, Jane & Higson, Helen. 2008. "Graduate Employability, 'Soft Skills' Versus 'Hard' Business Knowledge: A European Study". *Higher Education in Europe* 33 (4), pp. 411-422.
- Avramenko, Alex. 2012. "Enhancing students' employability through business simulation". *Education + Training* 54 (5), pp. 355-367.
- Barker, Beverly. 2014. "Employability skills: Maintaining relevance in marketing education". *The Marketing Review* 14 (1), pp. 29-48.
- Bennis, W. & O'Toole, J. 2005. "How business schools lost their way". *Harvard Business Review* 83 (5), pp. 96-104.
- Bhanugopan, Ramudu & Fish, Alan. 2009. "Achieving graduate employability through consensus in the South Pacific island nation". *Education + Training* 51 (2), pp. 108-123.
- Chang, Jimmy et al. 2003. "Business Simulation Games: The Hong Kong Experience". *Simulation & Gaming* 34 (3), pp. 367-376.
- Chia, R. & Holt, R. 2008. "The Nature of Knowledge in Business Schools". *Academy of Management Learning & Education* 7 (4): 471-486.
- Clarke, Elizabeth. 2009. "Learning outcomes from business simulation exercises". *Education + Training* 51 (5/6), pp. 448-459.
- Cox, Sharon & King, David. 2006. "Skill sets: an approach to embed employability in course design". *Education + Training* 48 (4), pp. 262-274.
- Curry, B. U. & Moutinho, L. 1992. "Using Computer Simulations in Management Education". *Management Learning* 23 (2), pp. 155-167.
- Doyle, Declan & Brown, F. William. 2000. "Using a business simulation to teach applied skills – the benefits and the challenges of using student teams from multiple countries". *Journal of European Industrial Training* 24 (6), pp. 330-336.

- Faria, A. J. (2006) "History, current usage, and learning from marketing simulation games: a detailed literature review." *Proceedings of the Marketing Management Association*, pp.138-139.
- Faria, Anthony J. & Wellington, William J. 2004. "A Survey of Simulation Game Users, Former-Users, and Never-Users". *Simulation & Gaming* 35 (2), pp. 178-207.
- Iuliana, P.; Dragos, M.I. & Mitran, P.C. 2014. "Identification of Employability Skills - Starting Point for the Curriculum Design Process". *Economics, Management & Financial Markets* 9 (1), pp. 237-246.
- Jennings, David. 2002. "Strategic management: an evaluation of the use of three learning methods". *Journal of Management Development* 21 (9), pp. 655-665.
- Keys, Bernard & Wolfe, Joseph. 1990. "The Role of Management Games and Simulations in Education and Research". *Journal of Management* 16 (2), pp. 307-336.
- King, Melanie & Newman, Richard. 2009. "Evaluating business simulation software: approach, tools and pedagogy". *On the Horizon* 17 (4), pp. 368-377.
- Mason, Geoff; Williams, Gareth & Cranmer, Sue. 2009. "Employability skills initiatives in higher education: what effects do they have on graduate labour market outcomes?". *Education Economics* 17 (1), pp. 1-30.
- Musselwhite, C. 2006. "university executive education gets real google scholar". *American society of training and development* 60 (5), pp. 57-8.
- Salas, Eduardo; Wildman, Jessica L. & Piccolo, Ronald F. 2009. "Using Simulation-Based Training to Enhance Management Education.". *Academy of Management Learning & Education* 8 (4), pp. 559-573.
- Sharif, Amir M. & Ranchhod, Ashok. 2009. "Using the markstrat business simulation to develop strategic management behaviours". *European and Mediterranean Conference on Information Systems*.  
<http://bura.brunel.ac.uk/bitstream>.
- Strachan, L. 2012. "Teaching employability skills through simulation games.". *Journal of Pedagogic Development* 5 (2), pp. 8-17.
- Sulphey, M.M. 2015. "Patterns of Employability Skills among Business Students.". *IPE Journal of Management* 5 (2), pp. 57-73.
- Vos, Lynn & Brennan, Ross. 2010. "Marketing simulation games: student and lecturer perspectives". *Marketing Intelligence & Planning* 28 (7), pp. 882-897.
- Whiteley, T.R. & Faria, A.J. 1989. "A Study of the Relationship Between Student Final Exam Performance and Simulation Game Participation". *Simulation & Gaming* 20 (1), pp. 44-64.
- Wickramasinghe, Vathsala & Perera, Lasantha. 2010. "Graduates', university lecturers' and employers' perceptions towards employability skills". *Education + Training* 52 (3), pp. 226-244.
- Yorke, M. and Knight, P. 2006. *Embedding employability into the curriculum*. The Higher Education Academy.