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The gamification of ERP – A value creation tool for educators

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Abstract

Enterprise Resource Planning (ERP) systems have always been a beneficial tool to firms around the world. Graduates are expected to have technology-based knowledge, on the systems in place and its integration with the business world. Traditional academic teaching provides the theory and possible application based, but its effectiveness in achieving learning outcomes have been questioned by past researchers. This research aims to assess the feedback from 17,015 students who have used MonsoonSim; a game based learning platform, built on the SAP ERP knowledge. This qualitative research aims to assess (1) the motivation of students (2) preference to incorporate it as part of the syllabus (3) comparison to the traditional method of teaching and learning.

Keywords: ERP, MonsoonSim, Gamification, Game Based Learning, Disruption

Introduction

Enterprise Resource Planning (ERP) was a term originally used to describe the advancement of business software to integrate all components of a business (Barton, 2001). Today, it has become a critical asset of businesses around the world, developing from a complex and expensive tool, to more user friendly, and a more affordable budget from businesses. Just like the typical business world, the ERP has become equally as "disruptive". Though normally perceived negatively, "disruption" in the modern context is a positive force. It is the process by which innovation transforms a market whose services or product are complicated and expensive into one where simplicity, convenience, accessibility and affordability characterize the industry (Christensen, Horn & Johnson, 2008). Modern business thrives on this, looking at crucial data and information to make informative decisions especially in times of Big Data, Artificial Learning, Machine Learning etc. This change has not just affected businesses, but also all forms of organisation as diverse as armed forces (Fastabend & Simpson, 2004) the motto "adapt or die" has been embraced to promote transformative change through innovation. This has also impacted the education sector. The demands of a knowledge-intensive economy also have induced considerable change in colleges and universities (Tierney and Lanford, 2016).

Disruption in the Education Sector

The typical teaching and learning education environment has largely been about lectures, assignments, tests and exams. Although, it may have been sufficient in the past, the current generation of graduates unemployed is a cause of concern and reflect the urgent need for change in the education sector. Although, there could be other factors that impact the unemployment rate, a key issue raised is that formal education is not producing people to take on jobs, as there seems to be a gap between the requirements of the industry and the skills and knowledge of the fresh graduates.

As much as it is a concern, the distress is more towards what has been done to curb this phenomena? An article in The Times Magazine in 2006, titled "How to build a student for the 21st century?" raises key questions on whether an entire generation will fail to make the grade in the global economy because they can't think their way through abstract problems, work in teams, distinguish good information from bad or speak a language other than their own. Moving forward to 2017, the prediction has come through in more than one way. An article in Forbes (2014), highlights two lacking skills, professional communication and the inability to critically analyse a situation to arrive at a viable situation.

In order to bridge this gap, significant changes need to be made to the education sector. Business schools have been criticized both on the outdated process as well as the irrelevance of the management theory being taught to students (Avramenko, 2012). Likewise, Moratis, Hoff, and Reul (2006) identified relevance and development of innovate learning methods for educating students as two major challenges facing management education.

The Gamification of ERP as a "disruptive" teaching and learning tool

As mentioned earlier, ERP has become an integrated system, reflecting the environment, process, controls, documents, transactions, etc. of a business. Graduates are expected to have exposure to ERP systems, as one of the key critical skills of employment. Hence, most education providers may recommend students to focus purely on getting certificates based on the typical popular modular based ERP platforms, as per the typical teaching and learning methodology. However, a key question arises on whether undergraduates are able to truly grasp the magnitude of information and processes that are embedded within the system, and to apply the concepts and knowledge gained over their undergraduate studies. Léger (2006) identifies the lack of Information Technology (IT) experience as one of the major barriers in teaching ERP concepts to business students. In addition, students struggle with the understanding of the importance of business integration utilizing ERP systems. Springer and Borthick (2004) believe that students need opportunities to learn to solve problems by constructing their own representation of the situation and creating their own understandings of what it means to develop and present acceptable solutions.

Although the ERP systems have definitely become more user friendly, undergraduates would need to have an overall idea of application based on the need and requirement of the firm, which can be diverse depending on the industry and product or service. Lacking corporate experience, with perhaps minimal exposure through their internship, may just enhance the challenges faced by the students in including ERP certifications and applications to their resumes.

A solution to this would be the "gamification" of ERP systems and to subsequently use it as Game Based Learning (GBL). The terms "gamification" and "GBL" have been interchanged by many researchers and articles. However, distinctions remain between the two terms, regardless of the similarities. GBL relates to the use of games to enhance the learning experience in comparison to gamification, which is the idea of adding game elements to a non-game situation (ASCD, 2015). Ispring (2017) enhances the discussion of the gamification terminology by including four (4) concepts: mechanics, reward, measurement and behaviour. Walters, Coalter, and Rasheed (1999) concluded from their research that simulations are an effective tool in a classroom and allowed students in a business policy course to implement strategic concepts with some degree of realism. Furthermore, the study noted that "business games and simulations appear to be an effective pedagogical tool at the undergraduate level" Therefore, GBL in this research aims to use the gamification of ERP to teach students to have critical thinking skills using scenario building and strategy setting, work in teams with time constraints, applying business theory to practice, and understand the overall concept of ERP and business skills.

Methodology

This research is qualitative, and aims to assess the perception of students who have been exposed to GBL, through the gamification of the ERP system. The platform that was selected to be used for this research is the MonsoonSim ERP software. Key reasons on why this platform was selected include its ability to simulate various business environment, clear criteria of goals and measurement (scoring matrix) and its capacity to motivate creativity and innovation to achieve sustainable strategies, yet flexible enough to react to market conditions. It is built on the idealogy and framework of the SAP ERP system, which is a popular ERP system worldwide.

Using this platform, students experience managing virtual companies in real time, using twelve (12) integrated business modules – Finance, Production, Material Requirements Planning(MRP), Warehousing and Logistics, Forecasting, Procurement, Asset Maintenance, Retail, Wholesaling, Marketing, Customer Service, and Human Resources. The students are grouped in teams of five (5) and each play a crucial role of discussing and deciding the strategy forward, and updating the group members on their actions. Various scenarios can be built based on the market mechanism in place depending on the actions of the groups (competitors), and the resolution put in place by the administrator, which can range from a simple business to a complex multi-product, multi-consumer and multi-country scenario.

In order to assess the impact of using this platform, the researcher assessed the feedback mechanism in place, which was the online questionnaire filled by 17,015 students after using MonsoonSim ERP and interviewed two lecturers who had incorporated it within their business modules.

Results and Discussion

Both groups (lecturer and students) had positive feedback on using the MonsoonSim ERP as a GBL. The lecturers both agreed that the module learning outcomes had been achieved, which clearly incorporated the need to understand the various business strategies, application to market based scenarios and incorporating critical thinking skills. Students were able to understand the

complexities of the business such as inventory management, pricing, demand and supply, competitor and market driven changes etc.

It was also encouraging for them to see the evident student's motivation and enthusiasm. Since this was an open platform where multiple games could be played during the semesters, the students did not seem to tire of the game, and instead had requested the lecturer's to increase the number of games, including over weekends and nights.

Another aspect that the lecturers agreed on as a plus point for the overall success of including this platform was the clear idea of the scoring matrix. The ability to select a purely profit based matrix or a mixed matrix based on cash flow or profit and other elements, appealed to the lecturers. Likewise, the different levels and modules enhanced the learning process depending on the student's level of knowledge. The students were from various backgrounds, and not limited to purely business students. Students from engineering and Information Technology (IT) were also part of the assessed group, and at times, were more successful in managing the business in comparison to the business students.

Similar feedback was received from students as well. The students indicated strongly that they preferred this method of teaching and learning, in comparison to the traditional style of lecture slides and theory. Due to the critical thinking skills and scenario building, the students were able to relate better to the integration of department, processes, business environment and technologies. At the same time, the groups that scored better also claimed that clear strategy setting and communication were key to their success. The challenge of beating the rest of the competitors (groups) within the game setting made it fun, challenging and taught the students to interact and work within their group. The students also were not intimidated by the game or the mechanism behind the game since there were different levels of guided learning. Also, with the ability to practice more, and with the assistance of their lecturers and team mates, they were comfortable with the pace of the games, encompassing different speeds of learning and balancing the requirement for traditional classroom style and experiential learning. The students also found that this integrated approach of teaching and learning made the application between lecture slides, theory and practical business environments more effective.

Conclusion

Technology plays a significant role in modern education. Disruption and innovation impacts every industry, including education. Therefore, educators need to keep abreast of the latest technology as well as the best possible way to implement new styles of teaching and learning in order to motivate students to higher levels. Modern learners interact with multi-sensory touchscreens at a very early age, and this could have a positive impact on student's readiness to learn due to its fun based learning. Although the generation gap between academics and students is evident, with some academics reluctant to bring in "somewhat trivial games" as part of their teaching methodology, an open mind is required in order to encompass the growing trend. Both the academics and students feedback from this research reflect the glowing optimism of this GBL – gamification mix, and can indeed be considered a success story. Academics who successfully incorporate relevant GBL and the gamification of technology can definitely be assured of the sustainable value creation in their classroom and modules, impacting the key skills of their students and future employability.

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