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Placing games in the teaching toolbox for entrepreneurship education in Puerto Rico

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Abstract

The world of business and entrepreneurship must align with current developments in education. Games that offer real-world simulations, role playing scenarios, table development and negotiation situations are tremendous educational tools that university professors have used to teach course material to students in fun and effective ways. In the present study, the researcher discusses an original plan for a table game that has been adapted for business and entrepreneurship students of the Inter American University of Puerto Rico at San Germán Campus. The researcher will discuss how games contribute to learning about entrepreneurship, marketing, business theory, internationalization, and how this method compares to traditional ways of teaching business at a rural university in Puerto Rico.

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Introduction

According to Peppler, Danish, and Phelps (2013), board games, video games, and online games have received significant attention in recent years due to their impact on educational outcomes, one of the main interests of the present study on the transfer of knowledge using game rules and behaviors that are typical of game settings. Jun (2008) has shown that participants in observation and reflection of game-related exercises obtain better scores on post-tests than in pretests, and they obtain better results in business simulations than participants who do not engage in game-related activities.

Jun's research is important to the present study because it suggests that perceptions about experience learning are positively correlated with results of performance in game simulation. The researcher argues that business and entrepreneurship students at a rural university in Puerto Rico can benefit from game playing and simulation experiences.

The present study is entitled: "Placing games in the teaching toolbox for entrepreneurship education in Puerto Rico." The purpose of the study is to stress the need for innovative and effective methods for teaching business and entrepreneurship in Puerto Rico, specifically at the Inter American University of Puerto Rico, San Germán Campus.

Student Engagement in Light of Puerto Rico's Economic Crisis

Puerto Rico's economy is in a recession (Serra, 2018, exposing on Lobato, 2012). The profile of the migrant for 2016 from The Institute of Statistics of Puerto Rico shows that about six out of ten people aged 25 or older emigrated from Puerto Rico with some secondary education. This has been growing since the previous two years, which showed 47% and 53%, and 5% and 7% in 2016.

This situation is further aggravated when one takes into account emigration brought about by Hurricane Maria. The same study shows that over 65,000 net passengers left from Puerto Rico in recent years.

The data show that many Puerto Rican students tend to leave the island upon finishing their studies, causing in turn a stagnation in economic growth, which then affects the development of the island's economy. The Report on Employment and Unemployment in Youth of the Department of Labor and Human Resources of Puerto Rico shows that for 2017, the participation rate of young people between 16 and 24 years old was 24.8%. This represents some 103,000 young people participating in the market labor of Puerto Rico.

The total number of unemployed people for 2017 was 119,000, according to the number of people registered in the Department of Labor and Human Resources of Puerto Rico.

The 19.2% of the total number of unemployed represents persons 16 to 24 years old. Given these numbers, universities have to prepare themselves to educate young people so they can create their own business and are not dependent on other people. The Inter American University of Puerto Rico at the San Germán Campus has a class in its General Studies Program that focuses on Entrepreneurship. Zooming in on this existing resource, the researcher stresses that educators must begin to maximize student learning in those classes by implementing effective strategies to teach concepts in entrepreneurship, for example, using interactive games in which students learn by having fun.

Objective and Expected Outcomes of the Proposed Study

The objective of this research is to develop an educational game in the business field where it can be used as an educational benefit for entrepreneurship students.

Education and business management are of the utmost importance for the economic development of a country, since it generates jobs and instills responsibility. López (2012) indicates that students need training to undertake entrepreneurship. However, students do not know how to be entrepreneurs and they need assistance to be guided correctly in developing their ideas.

According to Delfin and Acosta (2016), education and business training play extremely important roles in the economic development of a country, and games are effective ways of simulating those types of training. The authors showed that playing games in the classroom can be used as alternative methods of teaching entrepreneurship that creates interest and learning.

Sayers (2011) in his research entitled: "Computer Simulation and Gaming in Technical-College Curriculum: Online Student Perceptions", explores the educational use of computer games in simulations and virtual games in adults.

The study was carried out with people who were enrolled in a two-year technical course during the year 2010. They surveyed 626 people and used a partial adaptation of the progress inventory of a survey as an evaluation tool.

The findings of the study were that 75% of the participants did not have experiences related to the type of learning using technology. Sayers concluded that the data showed that the course would be more interesting and educational if they use these alternative methods.

Furthermore, the data showed that games and simulations were beneficial and should be incorporated into the curriculum. Sayers says that the benefits of incorporating these methods can provide an immediate assessment and increase students' critical thinking skills while having fun that in turn improves students' technological capabilities.

La Guardia (2014) argues that one of the main implications of entrepreneurs' education is to help students acquire skills and knowledge that are crucial for the development of an entrepreneurial mindset. In his article, A Game Based Learning Model for Entrepreneurship Education, describes a combined model based on the use of a [serious] game. The model of learning and [serious play was designed to build a learning space that fosters the entrepreneurial mindset of the learner through experiential learning. La Guardia deduces that education for entrepreneurship must be integrated into a coherent and integral way in national curricula. The model results will be integrated into the entrepreneurship schools of several countries such as Italy and Spain.

The game provides an opportunity for students, to have a chance from the simplest stage to a more complex one and that can be focused on the main concepts of business management, with the objective to make the best decisions and improve the results.

This may help improve learning. The game is conducted in a guided manner to obtain efficiency and effectiveness in business management. In this way, students can enjoy the game and learn the topics to improve the educational results and their scores in while playing.

Romero (2013) in his study: "Game based Learning MOOC" explain that entrepreneurship could help society overcome the crisis. At the same time, the game-based learning technique could allow a large number of participants to enroll in business education. This study establishes students to take advantage of game-based learning to develop entrepreneurship through a methodology based on the act in a way open to anyone, anywhere. Faria (1989), in his research called: "Business Gaming: Current Usage Levels" examines the growth and use of business games in management training programs and university business courses.

It is concluded that it is quite high in both, and it is recommended to those who are not familiar with this method of instruction.

Wolfe (1976) in his study entitled: "The Effects and Effectiveness of Simulations in Business Policy Teaching Applications" establish that the politics of business games are analyzed according to the criteria contained in business policy courses and their teaching objectives. Wolfe states in his study that the results determine that games of chance support the aims for personal and group skills for decision making in an organization. On the other hand, the data of his study shows that it seems that they fail in the structural elements and in the evaluative and control functions of the business policy.

Fonseca (2014) says that business education is being promoted more, driven in modern societies with respect to its benefits for the development of various professional and personal attitudes and skills. This includes; business experience, creativity, risk assessment, or responsibility. Several authorities have been actively developing policies and activities to enhance the business culture of young people.

It is known that games have an essential role, and the potential in education and social networks arose in the last decade as the platform preferred by many people to socialize, play, or perform professional activities. Royce (2007) states that the game is an innovative teaching strategy that research has proven to be effective in improving the learning outcomes of nursing students. Specifically, the game improves knowledge retention, promotes problem-based learning and motivates nursing students to become more involved in their learning. His literature also indicates that the use of play during nursing education promotes active learning, fosters critical thinking. The game makes learning more exciting and can replicate real-life scenarios.

Barkley, et al. (2009) conducted a study to investigate the use of games to support learning in the classroom in the health sciences. A search was made of studies published between January 1980 and June 2008, using the appropriate search terms. All publications and theses identified through the search were evaluated for their relevance. We included 16 articles that reported on empirical studies or reviews that involved the comparison of games with didactic methods. The limited research available indicates that while traditional teaching methods and games have been successful in increasing student knowledge, none of the methods is clearly more useful for students. While the use of games can be seen as a viable teaching strategy, care must be taken in the use of specific games that have not been evaluated objectively.

Lewis (1989), in his research, *Gaming: A Teaching Strategy for Adult Learners*, exposes the development of stimulating and innovative educational episodes poses a challenge for nurses' educators. The technique of the game is returning to the educational scene since it facilitates the internalization of concepts and promotes effective learning and the application of psychomotor skills. Establishes and discusses the use of the theory of game strategies, development, implementation, and applicability in the development of personnel. The author concluded that educational games are favorable for teaching.

The current study aims to extend the findings of Delfin and Acosta (2016) to the Puerto Rican context of entrepreneurship education. The research questions that will be addressed in the presentation are the following:

1. How do students perceive games as ways to teach entrepreneurship at Inter American University of Puerto Rico, San Germán Campus?

2. To what extent is student learning maximized by using games as alternative methods of teaching entrepreneurship at Inter American University of Puerto Rico, San Germán Campus?

To address the research questions, the presenter will discuss the game that he has developed as an alternative method for teaching students of business and entrepreneurship at Inter American University of Puerto Rico at the San Germán Campus. Participation in the Doctoral Consortium will permit the researcher to receive critical feedback on how to improve design (structure and layout of the game), as well as methodology (curriculum-specific assignments and exam preparations that could benefit from game playing and simulation experiences).

The researcher will share testimonial experience on creation of the board game and student-learning outcomes that have been observed to date through the implementation of the game in a business course of the General Education Program on the San Germán Campus.

Experiences

The game was used in a seminar for teachers of the Department of Education of Puerto Rico, as part of their development to create entrepreneurs in public schools at Puerto Rico. The teachers played the game called "Juego y Emprendo". It was part of the appraisal of skills related to entrepreneurship, entrepreneurship, marketing, and theories.

The game created great enthusiasm among the participating teachers, and they realized that playing is still a meaningful and relevant way to learn new concepts. After the game dynamics, each teacher evaluated the game and gave his opinion about it. The total number of participating teachers, more than 20 teachers, agreed that the game attracts teaching.

All the teachers emphasized that they would use the game as a new teaching method since they themselves, learned new concepts about entrepreneurship, marketing, and theories. Many teachers saw the opportunity to make this game not only to the areas mentioned earlier but also to be adapted to other subjects in the classroom.

On the other hand, the game was tested by adults from a business training program in two different cities. The first group was a group of unemployed people from the rural area of Puerto Rico, who were being trained to start their businesses. This game "Juego y Emprendo" aims to provide basic knowledge about entrepreneurship. The reaction of the students was very similar to that of the teachers. Each student evaluated the game positively and stressed that they learned about entrepreneurship issues very easily.

The second group of people were also unemployed adults from an urban municipality in the western area of Puerto Rico. These people were trained to form their own business. The reaction of the people was also similar to the previous groups. Fun took control of learning. The participants declared that it was a different way of exposing a topic in their evaluation to the game and, while having fun, they could learn terms that they can put into practice in their future business.

Lastly, Dr. Caroline Ayala, used the game as a review in her entrepreneurial class at the Inter-American University of Puerto Rico, San Germán Campus. Dr. Caroline Ayala used the game with her students. The professor evaluation of the game was excellent. She stressed the relevance of providing different and new ways of teaching, especially entrepreneurship. Ayala indicated that students were enthusiastic about the game, so much, that they wanted to play it again and, they also evaluated the game. The game participants found it very entertaining and educational.