

THE USE OF A GLOBAL MANAGEMENT SIMULATOR TO CONSOLIDATE TRANSVERSAL KNOWLEDGE

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ABSTRACT

Business decision-making in real context involves high risks and a long time to know the impact of decisions. Using the simulator, students know the results of decisions in a few hours, without incurring financial or personal risks. The management simulators were conceived for the training of corporate cadres, but they play an important role in the training of Management students. The business and market context is very complex and the simulators are able to reflect this reality, contributing to improve management practices.

It is intended to encourage students to manage a virtual company, analyzing the recent past, outlining strategies for the near future, evaluating results obtained, making decisions in the various functional areas of the company, taking into account the market situation and the competition, aiming to obtain better results to competitors. They are encouraged to integrate acquired knowledge, making decisions that will be submitted to the simulator in a previously established calendar. They analyze historical data, evaluate results obtained in the management reports produced by the simulator and received after each decision making; These reports reflect the impact of decisions taken on adjustments to accounting and various operational parameters. Then they validate or reformulate the strategy and evaluate the competition in the different markets.

Keywords: Simulator, Strategy, Decision, Diagnosis.

1. CONTEXT

Several authors argue that simulation-based training (SBT) makes it possible to fill a gap in management teaching regarding the combination of theory and practice in student training. For example Salas, Wildman and Piccolo (2009) believe that SBT can potentially convey theory and practice simultaneously and that the nature of management work in general lends itself to simulation-based training because many of the skills needed to be a Business manager can only be acquired through practice; Are the cases, for example, of leadership and strategic decision-making and communication skills. According to Cook and Swift (2006) and Lane (1995) SBT provides a more complex and realistic learning environment than other types of training ... and trainees can practice their skills. For Salas, Wildman and Piccolo (2009) one of the main objectives of simulation is to imitate real-life situations and allows learning to be based on a context that is directly relevant to management students.

The management simulators were designed with the purpose of training company cadres, but can play an important role in the training of students of the course of Business Management. The context of companies and markets is very complex and management simulators can reflect this complex reality, contributing to improve management practices. Decision-making in real context in companies involves high risks and a longer or shorter time until one knows the impact of decisions on the company and the market. Using a simulator, students get to know the results of their decisions in a few hours, without incurring financial risks, although they are subject to other risks inherent in the competition, which encourages them to consider risks in decision making. This is because all decisions have positive and negative impacts on the company. Thus, trainees will be more likely to think creatively and test various strategies to deal with high-risk situations.

According to Keys and Wolfe (1990), cited by Salas, Wildman and Piccolo (2009), in a simulation environment the learning curve can occur at an accelerated rate as students adopt decision-making processes and adjust their strategies because feedback is immediately provided allowing you to acquire the skills and competencies that would normally be gained

over years of experience. Each team will manage a company in the market where other competing companies operate and its members will develop new skills of: strategic management, decision making, teamwork and leadership.

The use of the management simulator in the consolidation of transversal knowledge is in line with Merrill (2002, pp. 44-45) that wrote: “training is promoted when students are involved in problem solving in the real world [,] .. when the existing knowledge is activated as a foundation for the new knowledge [,] ... demonstrated to the learner [,] ... applied by the learner [,] ... [and] integrated into the student world. “

2. DESCRIPTION OF THE PEDAGOGICAL PRACTICE

The main objective of the introduction of the simulator as a pedagogical tool was to increase the practical component of the Management course, with emphasis on the simulated practice, promoting a greater interdisciplinary between the curricular units and contributing to a greater student motivation in applying and integrating knowledge acquired in the previous curricular units attended during the course. The aim is to encourage students to manage a company, analysing the recent past and outlining the strategy for the near future, analysing the results obtained, making decisions in the various areas of the company (production, commercial, financial and human resources), taking into account the competitive situation and the economic situation of the market, in order to obtain the best results from its competitors. These results are mainly reflected in stock prices, market shares and company efficiency in terms of profitability and productivity, etc. Students are encouraged to integrate the knowledge acquired and to make their own decisions in teams of 3 to 5 elements, assuming responsibilities for the consequences of these decisions, which will be submitted to the simulator in dates and time previously established without any flexibility; the responsibility for meeting deadlines is the leader of each team. SBT makes it easier for reality to be simplified and manageable, its complexity attenuated and training flexibilised, so that simulator-powered competition is possible (Cook and Swift, 2006).

2.1 Target Audience

The simulator is being applied in the discipline of Business Simulation, 3rd year of the Management course, day and post-work students, at the School of Technology and Management of the Polytechnic Institute of Portalegre. The exchange of experiences between the students of the day course and the post-work course facilitates learning in a competition that implies decision making by the students as managers of a virtual company. Former students and entrepreneurs from the region have also participated in this global management competition with the objective of increasing the competitiveness of the competition and involving the local community. The SBT environment is sufficiently realistic to stimulate critical thinking and enable the student to acquire knowledge in a practical way while allowing sufficient control of the trainer on the situation to guide learning in the desired direction ... providing an environment to test and practice innovative techniques (Salas, Wildman and Piccolo, 2009).

2.2 Methodology

The curricular unit start with a training based on theoretical and theoretical-practical sessions to explain in detail the support manual for the construction of tools to support decision making based on the management techniques learned during the course in Management. Subsequently, the training is complemented with practical sessions to support each group throughout the simulation and with some theoretical-practical classes focused on specific themes pertinent to the management game. The challenge for the various student teams is to manage a virtual company that competes with 7 other companies in the European Union, NAFTA and Internet markets (global market) with 3 long-lasting products.

The participants (8 teams with a maximum of 5 elements) must analyze the past performance of the company, at the level of the internal diagnosis, make the external diagnosis and design the company for the future, defining strategic planning based on available resources (and to be obtained in the future), the strengths and weaknesses detected in the internal analysis and the opportunities and threats found in external diagnostics. There are 2 experimental decisions in which the students test the simulator, the decisions of the competitors and prepare for the competition that will begin with the 5 definitive decisions established in a pre-defined calendar.

Students have to analyze the company's historical data, evaluate the results obtained in the management reports they receive after each decision making, and which reflect the impact of the decisions taken with adjustments to company accounts and the various operational parameters related to each one of the functional areas. They must also validate or reformulate the strategy and assess competition in different markets.

The management reports inform the companies about the operational data: the Means of Production, Raw Materials, Human Resources, Sales Channels, Products, Transportation; And Financial Data: Balance Sheets, Income Statement, Administrative Expenses, Cash Flows and the Quotation Value of the Shares.

These reports, produced by the simulator after each decision, also present information (free and other paid separately) on the activities of competing companies in the areas of prices, total employees, salaries, agents and distributors, market shares, consumer opinions and Expenses incurred by competitors in areas such as Advertising, Research and Development and website efficiency.

The categories in which decisions are made (phased in 5 steps) are distributed across the various departments of the company: there are marketing, production and distribution decisions, finances and human resources. Decisions are also broken down into nine product / market strategic segments: 3 products placed in 3 different markets. Investment in each of the strategic segments, such as advertising and R & D, should be affected. Based on the simulator, this discipline becomes

very demanding, requiring students to justify, theoretically and with calculations in excel, in detail all the decisions made and strategies implemented, after a detailed diagnosis of the company, a detailed analysis of the variables that influence each decision and estimate its repercussions on the company.

This training can be used to simulate crisis events such as catastrophic business failures, providing a relatively free opportunity for management students to apply emergency measures without fear of negative personal problems or organizational consequences (Salas, Wildman and Piccolo, 2009).

2.3 Evaluation

The data generated by the simulator is very detailed, constituting a very useful management information to be explored in practical cases by the students in others disciplines, as for example in the Control of Management and Accounting of Management I and II. When students use the information generated by the simulator in previous disciplines, they have a greater ease of adaptation and integration in global management and strategy competition.

In the classroom context, the simulator reinforces the group spirit and the competitiveness among the teams, in addition to the students verifying that they are applying the knowledge acquired in several disciplines, testing this knowledge and obtaining, in real time (a few hours later), the results of decisions taken that resulted from the application of their knowledge. This feedback is made up of a management report for each team that is provided by the simulator.

In the end, the students are evaluated based on 5 decision making, pondering the quotation of the actions achieved by each company and the technical capacity in the justification / grounds of the decisions. Each team presents orally, after the fifth decision, the remaining teams and the teacher a summary of the decisions taken, the results obtained and the strategies adopted for discussion in the classroom.

According to Merrill (1975), SBT is a way of student-controlled training that learns at its pace, facilitating effective learning.

3. RESULTS

With the use of the simulator, students apply knowledge in new competitive situations, albeit in a simulated way. The winning team at the school level (and others who also wish to participate by finding a sponsoring company) competes with teams composed of staff from large national companies and students from other polytechnics and universities competing in the Global Management Challenge (GMC), contributing to the additional motivation and self-esteem of the students.

The results achieved contribute to the feeling that they have received adequate training to compete in the labor market, that is, the students feel more motivated and more prepared to face the active life and the business reality. The use of the simulator introduces an innovative differentiation in terms of learning and teaching methods in universities and polytechnics, providing students with a stimulating teaching / learning experience.

This teaching methodology has been a success, with positive feedback from students, and has resulted in greater personal achievement of most students. Students have adhered quite well to the simulation where dynamics group have worked perfectly, in most cases, and the competitiveness among students has been a factor enhancing their motivation that leads them to work many hours out of classes to give requirements of the management game. The students' learning is based on the sharing of work with their colleagues and with the teacher and on the active involvement in the teaching activities.

The best results obtained by ESTG students from Portalegre occurred in 2009/10 with the participation in the final of the Global Management Challenge and the conquest of the 4th place at the national level. In 2014/15 the team representing the school also participated in the final of the national GMC and in the following year the same team reached a second time the final of the national GMC, but representing Caixa Geral de Depósitos. In the 2008/09 and 2015/16 school years, the ESTG teams from Portalegre reaching the 2nd round of the national competition, although they did not reach the final.

4. TRANSFERABILITY

According to Salas, Wildman and Piccolo (2009) the SBT (Simulation-Based Training) is an ideal complement to improve the quality of management training ... an opportunity to improve existing management curricula ... allows the development of management skills at a pace much higher than usual, making it an ideal technique for management education programs ... perfect opportunity to improve the quality of our business sooner in the careers of graduates.

Based on the results obtained, and considering that it is intended to share pedagogical practices that prove to be successful, it is believed that the use of a management simulator should be considered in the curricular plans of the management courses of other higher education institutions. The practical application of knowledge related to the various curricular units of the Management course, their integration and interdisciplinarity, as well as teamwork, make this teaching methodology very dynamic and motivating.

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