Issues and Considerations Regarding the Use of Enterprise Simulations Early in an EMBA Program

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Abstract

Curriculum and course design have been increasingly recognized as critical to learning. At the same time, there is increasing emphasis on student learning versus the processes of teaching. Simulation-games have long been employed to enhance student learning. Strategic simulations (or enterprise simulations, as we will call them), in particular, have been used extensively in business education to help students tie together and practice what they have learned. This paper considers the design and teaching implications of using an enterprise simulation in an EMBA (or other MBA) program, with special considerations for its effective use as the initial course in the program.

Whetten's Learning Model is used to compare and contrast the use of an enterprise simulation at the start of an EMBA program to its more typical use at or near the end of the program. In addition, the Essential Learning Outcomes identified by the Association of American Colleges and Universities are used to highlight the potential outcomes from this placement.

Introduction

One of the primary objectives in business education is to maximize the amount of learning that takes place in the relatively short time. Continual advances in technology and increased platforms for information sharing provide educators with many opportunities to enhance their teaching strategies. One topic which has garnered the attention of researchers and educators alike is the use of enterprise simulation games in business education. Simulation games constitute a facet of business education (and general education) in which innovation is coupled with sharing of new ideas. The sharing includes how these ideas are applied and how they are (or at least seem to be) working, with feedback and dialogue to improve the future application and refinement of those ideas.

The expansion of opportunities for effective use of simulation games in business education is accomplished in this paper through an example of the use of a strategic simulation – alternatively referred to as an enterprise simulation game – in business education, with special emphasis on its application at the beginning of an Executive

MBA (EMBA) program. Overall, this paper outlines some of the course design issues concerning the use of business simulations at the start of EMBA programs (and possibly other MBA programs) and suggests methods for helping to assure student learning.

Overview of the Use of Simulation Games as Learning Tools in Business Education

Evidence of Success

When implemented correctly, simulation games have been effective as educational tools at both the undergraduate and graduate levels. Through testing undergraduate business policy students, Walters, et al (1997) concluded that business simulation games are valuable tools for exploring strategic alternatives and their consequences. Through testing students of six instructors at three different universities, Faria & Wellington (2005) validated business games by their conformity to the findings of the Profit Impact of Marketing Strategies (PIMS) model. The results of the study support the claim that a successful business strategy will continue to be successful when employed in a similar market environment, that market share and company earnings are moderately positively related in the simulation game environment, and that product quality and ROI are strongly positively related.

The use of simulation games in institutions of higher learning has become widespread. In 2004, an e-mail survey to 14,497 business faculty members at American Assembly of Collegiate Schools of Business (AACSB) institutions revealed that 47.7% of all respondents are currently using or had used a business simulation during their teaching careers (Faria & Wellington, 2004). Recognizing the value of the simulation experience in student learning, Universities have gone beyond just simple classroom implementation to create centers of learning such as the University of Missouri Virtual Experience, a multi-disciplinary distributed laboratory that uses simulation games and active learning to accomplish the University's E-business program objectives (Grasman, et al 2005). The popularity and success of business games in higher education serves to validate the consideration of business simulation games for the purposes of executive higher education.

One trend in business education is the increasing importance of preparing students for a collaborative and integrative business environment where companies continually demand sufficient multifunctional knowledge and good interpersonal skills of their employees. Lainema & Lainema (2008) report on the use of a simulation game to teach students how to have a holistic view of an organization and gain the necessary knowledge to operate a business. The results of a survey reveal student satisfaction both in the game and its ability to develop various functional and behavioral skills related to organization success. Leger (2006) chooses a simulation game to teach students how to implement an ERP system. Through the experience of the simulation game, students are able to develop technical skills through a firsthand participation in enterprise integration where cross-functional knowledge and interpersonal skills can be developed.

Use in an Executive MBA Program

The use of a simulation game in an Executive MBA (EMBA) program aligns with the goals of executive education. The trend in pedagogy in executive education is toward greater learning involvement. Conger & Xin (2000) believe that action learning must play a central role as the pedagogy of choice. Narayandas et al. (1998) also support this position by signaling that there is an overall trend in executive education to blend classroom learning with field learning. The authors capture "the changing face of executive education", presented in Figure 1 below:

The Changing Face of Executive Education

Unique Events	→	Lifelong Learning
Standard off-the-shelf	→	Customized to specific needs
Reactive-fill gaps for today	→	Proactive-Train for Tomorrow's Needs
Acquiring Knowledge	→	Action Orientation
Listen and Learn	→	Ask, Interact, and Learn
Individual Focus	→	Team Focus
Functional Silo Approach	→	Inter-functional Emphasis
Domestic Focus	→	Global Emphasis

FIGURE 1: The Changing Face of Executive Education from Narayandas et al. (1998)

The direction of executive of education has moved towards a more integrative, action approach to learning. It is the duty of the instructor to select teaching methods that are up-to-date with these current trends in executive pedagogy. When implemented properly, the simulation game method can be in direct alignment with the objectives of executive education as it provides students with a team-oriented, competitive, action approach to learning.

Although the research indicates that a simulation game is an appropriate choice for executive education, very little has been reported in the literature concerning the use of simulation in EMBA programs, especially at the beginning of these or any MBA programs.

Gooding & Keys (1990) describe the use of a simulation game in the introductory course of an EMBA program. In this introductory course, entitled The Management Environment, students participate in a simulation game called The Executive Simulation where they are exposed to key issues involving marketing, production, and finance. The course takes place during the first week of the program. Based on an assessment of the use of the simulation in the course, Gooding & Keys conclude that teams form cohesive units more quickly because of inter-group competition and the large quantity of work required of the game, participants with very little or no experience are able to better appreciate the skills required to compete in business, and that the game is interesting and enjoyable, and adds interest, excitement, and direction to a very demanding course. The

only problems noted are that the simulation sometimes generated so much excitement that the students were distracted from class lectures, and that students with limited finance or accounting background had a very tough time reading financial statements.

Although not in an Executive MBA program, Theroux (2006) also uses a simulation game at the beginning of a MBA program. The game is used as part of a pre-program which is offered to students who have not majored in business as undergraduates. This pre-MBA course offers the basics of accounting and economics plus a simulation game, with five rounds of the game being played in about 17 days. Theroux feels that although students are initially overwhelmed by the simulation, they figure it out by the end. In essence, the students without much business background catch up and are better prepared to start the MBA program. We refer to this a "leveling the playing field" in our EMBA program.

A Learning Model and the Simulation Learning Experience

Whetten (2007) uses Bloom's taxonomy of learning in a Management Skills Learning Model. The objective of Whetten's model is to "translate proven knowledge into consistent sound practice through the medium of behavioral skill development" (Whetten 2007, p.354). Whetten and Cameron (2007) point out the widespread applicability of this learning-centered design tool in management education. The five stages of the learning model are summarized in the first column of Table 1. Parallels between the five elements of Whetten's model and some of the learning processes in a simulation experience are proposed based on placement in the curriculum. This learning is first characterized as taking place at or near the end of the program because this placement appears to be the typical location of an enterprise simulation in MBA and EMBA programs. The last column shows that similar learning processes can occur when the simulation, alternatively, is placed at or near the start of the program, as it is in our EMBA program.

TABLE 1: Outline of Learning Model Skills and Elements from an Enterprise Simulation

Learning Model Skills and Elements of Learning from an Enterprise Simulation

Stages of Learning	***Learning Goal***	***Learning process with enterprise simulation at the <u>end</u> of program*** *(typical placement)*	***Learning process with enterprise simulation at the <u>start</u> of program*** *(placement in our EMBA)*
Assessment	Determining competencies	Assessing what is needed to succeed and organizing resources (team) to achieve success	Using available information as a starting point and discovering what you don't know
Learning (subject matter)	Understanding in contexts	Adjusting and adapting to current and projected contexts, including competitive pressures	Filling in the gaps, relative to the simulation contexts through pooling of information, ideas, and knowledge of the team
Analysis	Figuring out the implications	Selecting relevant information and using tools learned in the program to gain insights and unique competitive advantage	Making sense of the available information to gain insights and unique competitive advantage; performing basis analyses such as tracking performance, forecasting, and identifying sources of weaknesses
Practice	Use of results from analyses	Performing sensitivity analysis and implementing the conclusions with assessment and adjustment over time	Applying the new knowledge and insights in the simulation contexts (internal & external)
Application	Translation into practice	Figuring out what all this means, i.e., how to use it effectively in practice	Adjusting and adapting over time and as knowledge and insights grow; Figuring out what all this means, i.e., how it translates into practice and what more is needed to be learned

Thus, one point of Table 1 is that simulations can provide powerful learning experiences. The model also serves as a framework for illuminating the differences and appropriateness of using an enterprise simulation game at the beginning of an EMBA program. These points are expanded in the next section of this paper.

Course Design: Placement and Implementation at the Start of an EMBA Program

Placement in the Program

One critical decision in course design is whether and when to incorporate an enterprise simulation in an EMBA (or any MBA) program. Traditionally, simulations appear to be predominantly used at or near the end of a program, where students can apply the knowledge gained through their prior coursework. However, instructors should also consider the potential advantages to using an enterprise simulation at or near the start of the program, similar to the examples provided by Gooding and Keyes (1990) and Thoreaux (2006). The recognition of the business enterprise as an integrated system can lead to a better appreciation and (possibly) better understanding of course work that follows in the program. There is substantial anecdotal evidence that students have a good context to appreciate later coursework as a result of having seen how the total enterprise system works at the start of their program. The simulation experience reinforces what they do know and, importantly, helps to clarify what they do not know and what they need to learn during the remainder of their studies. They also have an integrative context within which to place much of the detailed knowledge that they study later in the program. As Gooding and Keyes point out, this placement also promotes early team building in the program.

In the application described in this paper, this placement of an enterprise simulation at the beginning of our Executive MBA program has been used successfully for many years. The course is an elective and it is also used in most of our other cohort MBA programs. Cohort programs are those in which students proceed through the program together over a fixed time period for degree completion. An enterprise simulation is not used at the start of our non-cohort programs because it is not clear that the same benefits would accrue. This is because students in non-cohort programs take their courses at their convenience. Thus, they are not necessarily in the same classes together, but rather take courses pseudo-randomly. Hence, the team-building benefits of the simulation are not likely to be realized (at least not to the same degree as they are in our cohort programs where students remain together throughout their coursework).

Choosing the Simulation Game

A number of good simulation games are available, as described earlier. The Capsim® Foundation® simulation (www.Capsim.com) is currently being used in the EMBA

program described herein. Although other, similar enterprise simulation-games have been used in the past, this paper will use Capsim to describe how the simulation is used in this program. Capsim is an enterprise-wide simulation of a fledgling manufacturing industry consisting of six competing firms starting from identical positions within the industry. It has reasonably good balance among marketing (including R&D), production (optionally including TQM), and finance decisions in competitive and strategic contexts. It is a closed system model in that no external factors impact on the industry other than inter-firm competition and customer buying preferences. To familiarize participants with the simulation (and business functions) user manuals and on-line tutorials are available as part of the simulation package. An individual version of Capsim® is offered wherein students individually run their companies in competition with computer-run companies. This form of the simulation is used for homework early in the course. It familiarizes the students with the game and also sets the stage for in-class learning. Once acquainted with the game, students then partake in an inter-team competition, also offered by the software, where up to six teams of students compete against one another. This is the version that is used in the remainder of the course beyond the early introductory sessions.

Formation of Teams

Students in many EMBA programs have a broad diversity of backgrounds, personalities, and competencies, and this program is no exception. Many students have little or no formal business education and have a rather limited field of experience. Some come from fields outside typical business disciplines, such as not-for-profit institutions and a variety of technical fields. In fact, diversity of the entering class is often sought explicitly, as is the case for the program discussed here.

There are several arguments for the use of teams in the simulation course, besides it being common to this and many other EMBA programs. Mutually-supported team learning is one key benefit. The use of cross-disciplinary teams assures that there will be a mix of approaches to the management of the simulated companies. Some students will leverage their prior knowledge and experience, some will use their analytical competencies to figure things out, others will contribute to the team's cohesion, efficiency and effectiveness, and still others will facilitate the integration of the functional pieces of the enterprise into an effective strategic framework.

Another previous application of cross-disciplinary teams in a simulation game is described by Chakravorty & Franza (2005) where MBA students are put in diverse teams with respect to functional areas (as we do in our program). The intent is to better prepare for what would be the most likely scenario in the real world. The response was positive as 60% of students specifically indicated that the exercise helped develop their cross-functional decision making skills.

Preparation of the Students

The foundation for the simulation and course starts with an introductory lecture and an in-class pilot practice session using the simulation. This first session is followed by an

individual homework assignment that includes tutorials provided with the simulation as well as individual practice runs of the simulation. The assignment also includes readings from selected textbooks about important business competencies, ranging from team building to strategic management. In addition, the readings include introductory information about the various functional disciplines of a business enterprise. The readings also help to set the stage for further study in the program, which is one of the purposes of the course, as further explained below.

Two textbooks are used in the course, in addition to the materials provided with the simulation game. One is a general business textbook, consisting of excerpts from Cadotte & Bruce (2003). It provides an introduction to most aspects of business, with a fairly detailed presentation of topics related to managing the total enterprise. Many former students have found this overview text to be useful as a reference text after the course, in addition to it being a fairly comprehensive and inclusive introduction to business and the business enterprise. The other is a book on understanding financial statements that helps those students with little or no financial acumen (i.e., most of the students) to feel a bit more comfortable with this topic (Fraser & Ormiston, 2007). The exposure provided by these books helps new students in the field of business leadership and also serves to prepare them for their future in-depth EMBA studies.

In addition to the readings from the textbooks, students are required to play the simulation as individuals (rather than in teams). The simulation used for this purpose is the same as the one used for inter-team competition during the course. However, this individual practice simulation is run against computer-run companies instead of live teams of competitors. The purposes of the practice simulation are to familiarize the students with the logistics of running the simulation as well as its successful management. Students begin to learn about the functional areas of the business, the need to integrate those functions into a strategic framework, how to assess business performance, and what additional information may need to be developed (i.e., what additional analyses may need to be done) to lead their company to success. By itself, this individual practice simulation is an effective vehicle for learning. However, substantial extension of the students' understanding and insights is realized when this base knowledge is applied in the team setting throughout the remainder of the course, as noted below.

Development of Teamwork and Decision Making Capabilities

The initial team pilot practice round stimulates team development and emphasizes the need to develop explicit processes for team decision making. These requirements are emphasized in the subsequent early team decision rounds of the simulation. Compared to individual decision making, team decision making changes everything, ranging from how team decisions are made to coordination of functional areas of the firm. Teams must decide how to resolve conflicts in decision positions and how to deal with the vagaries of human teamwork.

Such teamwork sometimes involves misguided judgments and decisions, but can also lead to shrewd, brilliant, wise, and successful decisions. Student teams learn from dealing with these issues based on feedback from their collective decisions. Whether these decisions result in favorable or unfavorable company performance depends on the quality of their decision processes as well as luck. However, the decision-performance-assessment cycle typically results in insights and improved decision making over the course of the simulation.

The learning processes shown in Table 1 are developed throughout the course of the simulation by students "discovering" the underlying meanings and implications of various topics. This discovery takes place as feedback from decisions are assessed and analyzed as the game progresses. For example, sales forecasting errors may be evidenced as a result of lost sales (unsatisfied demand) or excessive inventories (with associated cash flow problems). This evidence then leads to the recognition of the need to develop better forecasts. The search for more information about forecasting techniques follows. Tutorials and lectures on forecasting approaches and techniques get them started on developing improved forecasts and, thus, improved decisions and results. This learning is then coupled with an assessment of which one(s) might work best in the situation faced by the firms (teams) in the simulation. The analysis of these techniques also includes how they might be adapted to work best within the specific contexts and constraints of the industry being simulated. These steps necessitate using and developing all five steps of the learning model. These steps are then repeated in successive rounds of the simulation (periods of decision making) to continually improve sales forecasts and gain competitive advantage in the simulated industry.

Much of the learning from the simulation experience results from teams making decisions based on their individual backgrounds, supplemented by their experiences with the individual practice simulation, the course readings, and their collective judgment. However, they soon discover that these trial-and-error decisions must be integrated across functional lines and must be augmented by more considered and analytical decision processes. Thus, they learn that integration of strategy throughout the enterprise is more than just an idea, but must be implemented effectively across the entire team. They also begin to recognize the value of analysis. Tutorials and lectures on forecasting approaches and techniques get them started on developing improved forecasts and thus improved decisions and results. This blend of trial-and-error experience is merged together with their past understanding (which for some comes mostly from the readings and the practice simulation) and is supplemented by lectures, tutorials, and their own analyses to generate a multi-dimensional learning experience. This accommodates different learning styles and emphasizes the importance of integrating strategies and team decision making processes across functional lines.

Complementary Assignments

Assignments throughout the course are used to reinforce the development of student learning. These assignments complement the just-in-time lectures (discussed below) and the development of the students' understanding of the business enterprise. For example,

one of the early assignments requires the formulation of a tentative set of goals and a strategy for their simulated company, along with an organizational plan for managing the team and company; this latter part of the assignment includes the articulation of their proposed method for conflict resolution. Later, they are asked to develop a refined plan for the strategic management of their company. In between these two assignments are others, including ones that require the identification of performance metrics and the comparison of actual to predicted performance.

Presentation of Company Performance to Board of Directors

Near the end of the course, and after the simulation has been played for an adequate number of periods, a presentation to a board of directors is made by each team regarding the performance of their simulated company. In this EMBA program, the board presentations typically take place after eight rounds have been played. The board consists of the instructor, other faculty, as well as volunteer alums and executives. The use of external directors increases both the credibility of the experience and the learning from it. The other teams in the course also serve as secondary board members when they are not presenting. This facilitates sharing among the teams of strategies, tactics, and other management insights gained during the simulation. Questions from the board stimulate the students' abilities to think on their feet and convincingly share their insights. Feedback from the board also serves to expand the associated learning.

Further development of teamwork is required to put together and deliver a convincing presentation. The presentations are developed and delivered by the entire team, with each member of the team being graded as well as the team overall. Competencies at developing and delivering inspirational, effective, and convincing presentations are developed and expanded through these presentations. Importantly, the presentations also serve to coalesce students' expanding understanding of effective business leadership. Following the board presentations, the students are required to critique their own presentation and that of their team. This helps to assure reflection and comparison of their presentation with that of other teams in the course, thus encouraging both team and cohort shared learning.

Debriefing Discussion and Assessment

The final assessment phase of the course involves a debriefing discussion which highlights learning points and requires each student to individually reflect on the simulation experience and extract from it lessons that can be more broadly generalized and used in other and future situations. This exercise includes formulation of answers to questions such as the following. What can be taken from the simulation and used elsewhere? What can we learn of enduring value from the simulation experience? Answering these questions requires the organization of their experiences, including simulated performance results, the integration of their experiences and resulting ideas, preferably into an integrative framework, and the elaboration of lessons to be used in the future. These are the kinds of generic learning elements or strategies identified by

Zantow, Knowlton, & Sharp (2005: 452) and are critical to maximum learning from the simulation experience.

The course ends with a separate session for sharing these lessons learned with the entire class. This open class discussion attempts to identify lessons from the course and extrapolate them into broader lessons that might be applicable beyond the simulation to the careers of the participants. It purports to put these lessons into a model or framework for future use. This is where reality meets the simulation. It also serves as an opportunity to clarify the lessons that each participant feels are most important to learn in the remainder of their EMBA program. In addition, this emphasizes the value of shared learning and contributes to the cohesiveness of the class. Thus, these elements of the course also embody the steps of the learning model, uniquely ending with an assessment that sets the stage for continuing learning throughout the program.

Role of the Instructor

Because of the foci of the course on team learning and experiential learning, the role of the instructor in a simulation may be different from the typical lecture and discussion mode of instruction. In a simulation course, even more than in a lecture-oriented course, the instructor serves as encourager, mentor-coach, and facilitator of the reflective learning that is central to this pedagogy. These roles become especially important as teams get into financial or operational trouble in the simulation, and as students become frustrated or overwhelmed by the amount of information that may be new to them.

As in most courses, the instructor provides theoretical bases for enterprise management as well as application insights. In the simulation context, an attempt is made to deliver these lectures in a "just-in-time" sequence as the game progresses. The idea is to introduce topics at increasing levels of complexity as the topics are appropriate and can be dealt with by the student teams. For example, team formation and processes are discussed early, along with basic strategic approaches that might be adopted for guiding decisions in running each individual company. Another topic covered early in the course is basic reading and understanding of financial reports. The instructor also suggests frameworks for understanding the business enterprise and for framing their future business studies and careers. An overarching framework is developed early so students begin to see what is involved in leading a business enterprise effectively.

Student Learning

The Board of Directors of the Association of American Colleges and Universities (AACU) has identified Essential Learning Outcomes for student learning to meet twenty-first-century challenges (2010). Selected elements from these outcomes are summarized in Table 2 along with the suggested learning mechanisms associated with the placement of an enterprise simulation at the beginning of EMBA (and possibly other MBA) programs.

TABLE 2: Summary of Essential Learning Outcomes Identified by the AACU

Summary of Essential Learning Outcomes Identified by the Board of Directors of the Association of American Colleges and Universities (paraphrased) and Suggested Outcomes Due to Use of an Enterprise Simulation at the Beginning of an EMBA (or any MBA) Program

Essential Learning Outcomes	***Selected Learning Elements***	***Related Processes (per AACU)***	***Learning Processes Associated with Using an Enterprise Simulation Early in an EMBA program***
Knowledge of Human Cultures and the Physical & Natural World	Sciences, mathematics, social sciences, humanities, histories, languages, arts	Engagement with big questions, both contemporary & enduring	Not applicable except through lectures and related assignments
Intellectual and Practical Skills	Critical thinking, information literacy & analysis, written & oral communication, teamwork & problem solving	Practiced extensively across the curriculum through progressively more challenging problems, projects, and standards of performance	Learning as much as possible about a completely new business and then figuring out how to compete successfully in that industry
Personal and Social Responsibility	Intercultural knowledge & competence, ethical reasoning & action, foundations for lifelong learning	Active involvement with diverse real-world challenges	Working with teammates and competing teams of diverse cultural and educational backgrounds; learning and competing ethically; starting to learn how to learn quickly and effectively in a competitive environment
Integrative and Applied Learning	Synthesis across generalized & specialized studies	Application of knowledge, skills, & responsibilities to new settings and complex problems	Synthesizing strategy with functional integration for effective team performance

Evidence of Learning Effectiveness

Based on more than 15 years of experience using an enterprise simulation as the beginning course in the EMBA program, the preponderance of anecdotal and other evidence suggests that this placement is effective. This evidence is summarized below in Table 3 and the subsequent discussion even though it is recognized that it is of limited scientific validity. Instead, these observations are included (1) because they do represent a preponderance of evidence that, taken together, suggest the effectiveness of this placement, and (2) they may provide a basis for further research that will more rigorously verify or refute the effectiveness of this placement (and, perhaps, of simulation games in general).

TABLE 3: Evidence of Learning Effectiveness

Anecdotal and Other Evidence of the Effectiveness of Placement of the Enterprise Simulation as the First Course in the EMBA Program

Outcome	***Observed Reasons for Outcome – Supporting "Evidence***
Continuation of placement in spite of obstacles	Decisions by Program Director(s) to keep this course and eliminate others
Advocacy by EMBA (and other MBA) program directors and the Dean	Reinforcement discussions in various venues
Endorsement by upper-level students and alums	Verbal and written feedback, often unsolicited, to faculty, administrators, and lower-level students during events and gatherings
Course evaluations consistently high	College-wide standard evaluations, including ratings and comments
Positive feedback in Lessons Learned assignment	Numerous and consistent comments about the value of the course and the learning achieved from it
Shared feedback in open debriefing discussion assignment	Enthusiastic discussion of lessons learned and preparation for future learning in program
Consistent performance of teams in the simulation	Consistent placement in the top half of all teams using the simulation worldwide at any given time
Frequent placement in the top six teams competing in an international competition	Competitive performance and placement in finals of international competition sponsored by the provider of the simulation used in the course

Discussion of Observations of Effectiveness

The following paragraph expands the points in Table 3 in somewhat more detail. This discussion is not intended to constitute a proof of effectiveness, but represents observations that together suggest its potential for learning. It remains for further research to verify the effectiveness of the use of a simulation game in this context.

An enterprise simulation has been used since the inception of the EMBA program more than 15 years ago. An enterprise simulation was subsequently added to most of the cohort MBA programs in the college and continues to be used today. This placement has continued in spite of a reduction in credits required for the degree (and thus the elimination of courses) and in spite of this course not being a degree requirement. For example, this course was retained in our cohort programs when the MBA curriculum was revised, with other courses eliminated or combined, seven years ago. It was even retained when the number of credits for degree completions was reduced by 15% (along with a commensurate reduction in courses) two years ago. This continuity continues to be advocated by program directors and other administrators as well as by at least some faculty (unanimity having not been sought or likely in an academic setting). In addition, such placement has repeatedly and explicitly been endorsed by upper-level students and alums to the instructor, to administrators, and to prospective students. For example, at recruiting events alums often talk about the course as one of the highlights of the EMBA program.

In addition, course evaluations have almost always exceeded college averages, suggesting that experienced professionals (most of the students in the EMBA program) appreciate this emersion and exposure early in their program. This is reinforced by feedback on the reflective assignments at the end of the course. These include the assignment on lessons learned and lessons to be learned during the remainder of their program, as well as the debriefing assignment that is an open discussion of lessons learned among all students in the course.

Further evidence of the learning that takes place during the course is provided by the performance of students and student teams in comparative rankings provided by Capsim, the provider of the simulation used in the course. These rankings include a Top Ten comparison among all teams using the simulation at any point in time, in which our students consistently place in the top 50^{th} percentile. Other evidence of their learning from the simulation is their performance in an international competition using the simulation; our teams have frequently placed in the top six teams among hundreds of competing teams worldwide.

Of course these observations do not prove effectiveness. Nevertheless, taken together they do provide a preponderance of anecdotal evidence that the placement of an enterprise simulation at the beginning of the EMBA program may support student learning. Further research is needed to support these suggestions of effectiveness.

Conclusion

Overall, this paper serves a contribution to the literature pertaining to the sharing of experiences and research findings on the topic of simulation games in education. As very little has been published in the area of the use of simulation games in EMBA programs, especially at the beginning of the program, hopefully this paper will spark more discussion and research on the subject and attract the attention of EMBA educators. Key issues involving enterprise simulations at or near the start of EMBA (and other MBA) programs are discussed, and recommendations for implementation and further research and dialogue are provided. There is some evidence to suggest that enterprise simulation games, when used appropriately, can be a powerful teaching tool, including at the beginning of EMBA programs.

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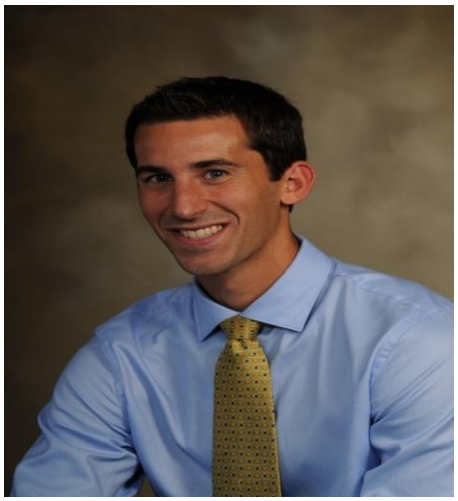
Biographies

Robert E. Laessig is professor of decision sciences in the Bennett S. LeBow College of Business at Drexel University in Philadelphia, Pennsylvania. Dr. Laessig has served as Associate Dean of the College twice in his career, in addition to his 40 years of teaching, research and other service activities. He has developed and taught the simulation course "Managing the Total Enterprise" in most of the cohort MBA programs at Drexel since their inception. Dr. Laessig is an alumnus of Drexel University and Cornell University.



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