THE EXPERIENTIAL LEARNINGS OF TWO CAREER ACADEMICS: REFLECTIONS, INSIGHTS AND RECOMMENDATIONS FROM YEARS OF TEACHING AND RESEARCH ON THE USE OF BUSINESS SIMULATION GAMES IN MARKETING EDUCATION

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ABSTRACT

The learnings of two highly experienced marketing simulation game creators, users and researchers are presented to guide business instructors who are using, or planning to use, a business simulation game as part of their instructional methodology. The usage considerations that the authors have observed and/or investigated over the years are provided. Research studies on the use of marketing simulation games for educating college students and business practitioners that have been presented at ABSEL are reviewed. Some thoughts on the future of simulation gaming usage are put forward. The paper concludes by offering the overriding reason, which after all their experiences and research, the authors finally recognized as being the impetus behind their long-term persistence in using marketing simulation games as part of their teaching methodology.

INTRODUCTION

Since its inception, ABSEL has dedicated much of its literature to research on student learning as a means to guide academics on methods and techniques for teaching and instruction. This paper approaches the topic from the viewpoint of two academics who wish to share the learnings from their experiences of teaching in the discipline of marketing with simulation games to both undergraduate and graduate students, as well as consulting with business practitioners. The collective time frame of our careers has spanned the 50 years since ABSEL was founded. Like many "experiential" activities and exercises, the report on the learning is unique in perspective and includes many anecdotal observations and is thus written in the first person. At the same time, the paper will provide learnings established with evidence from research based studies, both our own and those of others.

We do not promise any earth shattering revelations in this paper. We also want the readers to know that we are not preaching a gospel of marketing simulation game usage. We merely wish to share our breadth of experiences and insights from two long careers. Aside from putting in a great deal of time and effort to both create and/or use marketing simulations as instructional tools, we also pursued continuous research efforts into the learning impacts and effectiveness of the simulation games we were using. This was undertaken in concert with, and in comparison to, the other instructional tools we had available. We will present the things that worked for us in hopes that it may help illuminate the way for other marketing instructors whose experiences with business simulation games are just beginning. We also hope to provide additional insights for experienced game uses who may have tried these same things with either more or less success than we.

This paper will be divided into the following discussion sections: the concept of learning; goals and philosophy of instruction in teaching marketing; why marketing simulation games?; experiences and research in using marketing simulation games; thoughts on business simulation game play and its impact on management decision making; 14 recommendations on how to use marketing simulation games; thoughts on the future; and our conclusions where we offer the defining reason as to why we persisted in employing marketing simulation games during our careers.

THE CONCEPT OF LEARNING

Before one can investigate any kind of learning, one must acknowledge the conceptual and operational definition of the concept. Remarkably, despite being included in the name of the organization, we are not aware of the existence of a commonly

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agreed upon conceptual definition of learning for ABSEL as an organization. Having recognized this, we will not engage in this debate in this paper beyond its acknowledgment.

According to the American Psychological Association, the pre-eminent organization of its kind in the world devoted to "the study of the mind and behavior" (American Psychological Association, 2022), the definition of learning is: "the acquisition of novel information, behaviors, or abilities after practice, observation, or other experiences, as evidenced by change in behavior, knowledge, or brain function. Learning involves consciously or nonconsciously attending to relevant aspects of incoming information, mentally organizing the information into a coherent cognitive representation, and integrating it with relevant existing knowledge activated from long-term memory" (American Psychological Association, 2022).

Cannon and Smith (2004, p. 302) engage in a discussion of the types of learning researched at ABSEL and they offer some definitions of learning. They present a definition of active learning drawn from Szczerbacki et al (2000) which is: "learning where the student takes a strong role in guiding the educational experience." They also present a definition for experiential learning drawn from Gentry (1990) which is: "where students learn by doing and in the context of business education through a kind of simulated experience". Gentry et al (1998) describe how ABSEL researchers have conducted studies on learning with varying measurements during its first 25 years. They also chided ABSEL researchers somewhat for being rather loose in their use of the term learning in their research because in their writings, most of them talk about learning without defining it, as if it had one universal meaning and interpretation.

Regardless of whether a definition of learning for ABSEL authors can be agreed upon now, or in the future, there will always be a need to understand how people undertake learning. The conceptual and operational definition of learning that we subscribed to in our research throughout our careers and the one the readers should take as our meaning in this paper is the following: "A change in behavior as a result of experience."

GOALS AND PHILOSOPHY OF INSTRUCTION IN TEACHING MARKETING

Educating students in the field of marketing for business can be very challenging for both instructors and students alike. Many students enroll in the subject believing that promotion and marketing are synonymous and that the need to learn and employ quantitative skills will be minimal. This is not the case at all. Marketing is very much an integrative business discipline which requires students to comprehend and employ knowledge from all the specialized areas of business. In particular, principles from business strategy, information technology, accounting, and finance are front and center in designing marketing programs. The implementation of marketing programs also requires a good deal of understanding of human resource principles because of the interpersonal nature of relationship building associated with personal selling and the establishment of channels of distribution In light of this, as marketing instructors, we were seeking to accomplish the following goal with our students: To provide them with sufficient and appropriate knowledge and experiences to enable them to successfully pursue careers in the business discipline of marketing.

The philosophy of instruction we employed to accomplish our goal involved presenting the historical concepts, principles, and knowledge from the discipline of marketing and then offering practical learning experiences which would reinforce them. In line with this was the acceptance of one key assumption underlying most North American businesses: Capitalism is the main underlying economic system and thus, profit maximization behavior is the driving force behind business operations.

In our role as instructors we were always focused on instructing the appropriate pedagogy of the course subject. The decision to employ any particular instructional method or tool in teaching any business discipline subject is usually predicated upon the learning outcomes of the course at hand. In the current environment of business education, the models for designing and instructing courses are being driven very strongly by the assessment and continuous improvement approaches which are in line with the Assurance of Learning initiatives of external educational accrediting bodies such as the Association for the Accreditation of Collegiate Schools of Business (AACSB). Instructional approaches must also be in line with the educational philosophies of State Government accrediting bodies who seek accountability for their investments of taxpayer funds. As such, Business School's are compelled by external funding organizations, and the market place, to subscribe to these accreditation models.

In concert with this, most institutions have developed and expressed institutional learning goals for their students as part of their strategic planning processes. The individual degree programs then have to set out and develop their own learning goals which have to be linked to the institution's learning goals. Next, individual instructors have to develop course learning objectives which are then linked to the degree program learning goals. Finally, course instructors have to identify the kinds of instructional tools they will employ and then link them to the course learning objectives. In school's that employ AOL frameworks, the program learning goals, course objectives and instructional methodologies have to be presented to students in

the course syllabus. As an example of this process, in a recent class on Marketing Applications and Decision Making taught by us, the expression of these goals was as presented in Table 1.

Table 1: Example of Degree Program AoL Goals and Course Objectives

Program Learning Goal	Marketing Course Learning Objective	Instructional methodology
Students develop and apply essential knowledge in each functional area of business.	Provide a basic outline of a marketing plan & practise marketing decision making consistent with the plan.	Marketing Simulation Project
Students formulate implementation plans	Develop a marketing plan and engage in marketing decision making as part of team.	Marketing Simulation Project & Case Analysis

WHY MARKETING SIMULATION GAMES?

One legitimate concern with the focus on Assurance of Learning driven processes for selecting instructional methodologies is the risk that they may lead to the homogenization of the approaches and techniques to educate students. The implication is that from year to year, and institution to institution, the selection of the instructional methodologies and techniques to educate students in business disciplines may become driven by inertia as opposed to innovation. It would be hoped that the conceptual notion of continuous improvement would be a counter balancing force leading to educational innovations.

It was the search for innovation in educational methodologies for instructing business students that was the impetus behind the founding of ABSEL in 1974. It was this consideration that attracted Faria to attend its first meeting. At that time, the development of business simulation games and experiential exercises could be considered to have been in the early adoption stage as innovations in business education according to Roger's (1982) diffusion of innovations model.

Faria was the initiator of a series of surveys beginning in 1978 that investigated the level of adoption and the reasons why instructors used or did not use computerized business simulation games. The following summarizes much of what Faria and his colleagues discovered through the years (Faria and Nulsen, 1978; Faria and Nulsen, 1979; Faria, 1987; Faria and Nulsen, 1996; Faria and Wellington, 2004b; Wellington, Faria and Hutchinson, 2014).

Faria and Nulsen (1978) undertook their first exploratory survey on the academic use of business simulations with a mailing to 300 business school instructors. They employed a stratified sampling approach such that half the mailing list contained ABSEL members which meant that the findings would not be generalizable to the general population of business school instructors. This was done intentionally to ensure that a significant proportion of the respondents would actually be business simulation game users, the population of interest. The survey posed 17 questions about business simulation game usage and adoption. Many of the questions were open ended. They received 190 responses, a 63.3% response rate. The overwhelming majority of respondents were simulation users with 176 reporting having used a simulation and only 14 reporting they were non-users.

Faria and Nulsen (1978) reported the following as the primary reasons motivating instructors to adopt business simulation games as a method of instruction. The list of reasons in order of frequency of mention (minimum of at least five mentions) was:

a. To give students a realistic experience.
b. The student enthusiasm and/or interest achieved.
c. Saw this as a more effective way of teaching.
d. Moved into a course where this was the traditional method of teaching it.
e. Thought that I would like this as a teaching method.
f. To get away from cases and/or lectures.
g. Saw this as an innovative teaching method.
h. Wanted to improve my teaching effectiveness.
i. To add variety to courses.
j. Saw great value in simulation as a teaching method.

A second important finding involved the kinds of learning objectives that instructors sought to achieve through the use of simulation games which were:

a. To integrate various business concepts.
b. To prepare students for the real world.
c. Motivate students to learn by getting them involved.
d. Teach specific problem solving techniques.
e. Get students into group decision-making situations.
f. To give students skill in problem solving.
g. To give students a chance to apply textbook principles.
h. Make students think.

The survey also queried respondents as to what they found rewarding for themselves in the employment of a business simulation game as an instructional tool:

a. The learning seen in the students.
b. Getting through to the students.
c. Increases my interest in the courses I teach.
d. A feeling of accomplishment.
e. The interest and enthusiasm seen in the students.
f. Gets me out of lectures.

Respondents were asked for their opinions on how simulation gaming was rewarding for their students:

a. They enjoy their course for a change.
b. Better preparation for the real world.
c. A break from the class routine to something more exciting.
d. The challenge.
e. The students get to see the results of their decisions.
f. The students get to know and work with other students.
g. The opportunity for a 'C' student to beat an 'A' student.

The survey inquired as to what instructors thought were the drawbacks associated with simulation game usage:

a. Takes too much of my time.
b. Computer centre problems.
c. It is difficult to evaluate performance and assign a grade.
d. There is much work in game administration.
e. Students don't get involved enough.
f. Most simulation exercises are not realistic enough.
g. Problems with colleagues.
h. Students try to beat the game.

A question was posed on how instructors first became aware of simulation games:

a. Used as a student - 68 mentions
b. Colleagues - 58 mentions
c. Conferences 18 mentions
d. Book salespeople - 14 mentions
e. Journal articles - 8 mentions
f. Advertising - 4 mentions

Lastly, respondents evaluated the effectiveness of content delivery methods on a scale of 1-10 (10 being high):

	Users	Non-Users
Lectures	5.56	6.89
Case	6.38	6.44
Simulation	8.44	5.89

Faria and Nulsen (1979) reported some additional information from their survey by providing information on the reasons why some respondents had discontinued their use of business simulation games:

a. My classes got to be too large.
b. Most simulations are too advanced for the level of courses that I teach.
c. Lack of adequate support facilities.
d. Grew tired of simulation usage.
e. The courses that I teach have changed to some in which there are no suitable games.
f. Changed schools and courses.

Faria and Nulsen (1979) posited that business simulation game adoption in education seemed to fit in with the marketing concept of the product life cycle (Levitt, 1965). They report that Day (1968) had conducted a survey of AACSB member schools and that 94% of the school's responding indicated that they were using a business simulation game somewhere in their program. This survey result suggests that at the time, as an educational tool, business gaming was likely in the maturity stage in terms of its product life cycle.

Faria (1987) conducted a survey of 315 AACSB member business school Deans (202 usable returns, 64.1% effective response rate), 500 business school faculty (271 returns, 54.2% effective response rate), 500 business firm training managers (28 undelivered, 219 returns, 46.5% effective response rate), and 33 business consultants (21 returns, 63.6% response rate). He reported that 95.1% of Business School Deans responded that business simulation gaming was being used in one or more courses in their business programs. The Dean's reported on the discipline areas in which business simulation gaming was being employed with 52.9% business policy, 51.0% in marketing, 24.8% in finance and 17.8 % in management. On a scale of 1 to 10 (1 not effective to 10 highly effective) they rated teaching methods as follows: Cases (8.2), Simulation games (7.8), Lectures (7.4), and Textbook Readings (6.9).

Amongst the professors surveyed, only 17.3% were currently using a simulation game in their teaching, while 83.7% were not currently using one. With respect to the businesses surveyed, 23.1% reported using computer-based simulation games in their training. Amongst the consulting firms, they reported supplying simulation training to an average of 46.1% of their clients.

Faria and Nulsen (1996) conducted an update survey employing a mixed stratified sampling approach contacting 383 AACSB member business school Deans (2 undelivered, 236 usable returns, 61.9% effective response rate), and 700 business school faculty (9 undelivered, 372 returns, 53.8% effective response rate). Of the 236 returned surveys from the Deans, 97.5% of the respondents indicated that business simulation games were being used in one or more courses in the School's program. Of the 372 business faculty who responded, a total of 103 (27.7%) indicated that they were current business simulation game users.

Faria and Wellington (2004b) conducted an updated e-mail survey of 14,497 business faculty members across all business disciplines for which 1085 individuals responded and 1056 reported their usage status. Among those who reported their usage status, 321 (30.4%) were current simulation game users, 179 (17.0%) were former simulation game users, and 556 (52.6%) were non-users. As an aside, Faria and Wellington (2004b) included a question on ABSEL awareness in their survey. Wellington and Faria, (2004) report that overall ABSEL awareness was 13.7% with 28.0% among users, 22.9% among former users, and only 2.5% among non-users. Based on the communications tools that the respondents used, Wellington and Faria, (2004) suggested that advertising, direct mail and e-mail would be the best means of communication for ABSEL to increase organizational awareness.

Wellington, Faria and Hutchinson (2014) surveyed 30,137 business faculty members from 426 AACSB schools to study business game usage behavior. The absolute number of responses was almost the same as the Faria and Wellington (2004b) study with 1024 surveys completed, but the response rate was dramatically lower at only 3.4% of the sample. In this survey, 1014 respondents reported their business simulation game usage status with 381 (37.6%) current users, 197 (19.4%) former users, and 436 (43.0%) non-users. A question on the awareness of ABSEL was once again presented with only 10.2% reporting familiarity as compared to 13.7% ten years before. Among the 381 current simulation game users, 15.5% stated that they were aware of ABSEL compared to 28.0% who were aware of ABSEL in 2004. Amongst the 197 former simulation game users, 17.3% were aware of ABSEL compared to 22.9% in 2004. Finally, in the 2014 study, of the 436 non-users of simulation games, 2.5% were aware of ABSEL which is exactly the same percentage of those who were aware in 2004. The survey results indicated that ABSEL awareness had declined significantly over the ten-year period, while in contrast, reported simulation game usage had actually grown (37.6% of respondents were users in the 2014 study versus 30.4% being users in 2004).

The set of survey studies undertaken by Faria et al over the first 40 years of ABSEL indicates that business simulation game usage continues to increase steadily. The conclusion that we draw from this research is that in terms of the Product Life Cycle concept (Levitt, 1965), business simulation game usage is in the early maturity stage of its product life cycle. In contrast, it would appear that as an organization, ABSEL is in decline.

The foregoing gives considerable background on the uptake of business simulation gaming. From his standpoint, the reason that Faria chose to innovate marketing simulation gaming into his instructional curriculum in the early 1970s was based upon the perception that there was a significant gap in the kinds of skills that students needed to function as managers versus the kinds of skills that were actually being taught. At that time, the majority of business school curricula focused on teaching content knowledge. The main approach by which students learned the practical applications of business principles and knowledge was through the case method.

Faria felt that the current teaching approaches left students unprepared to go into the working world. The learning approach of memorizing marketing principles and analyzing case situations did not allow students to actually make their own marketing decisions, experience the consequences, evaluate them, and then make a follow-up decision, all related to earning a profit in a competitive business environment. As far as recurring decision making was concerned, the closest students were coming to this process was when they took part in a running case example.

With respect to teamwork skill development, this depended on whether students undertook case analysis as an individual activity or as part of a group.

Faria perceived that marketing simulation games offered a learning approach through which students could develop their decision making abilities in the face of a profit motivated competitive environment in which there would be no negative real-world consequences for making poor decisions. In addition to experiencing a profit motivated competitive environment, and consequential decision processes, students would also face an experience of making decisions with uncertainty as to the outcomes. The marketing simulation game experience required them to develop and implement marketing strategies to achieve profitability. In doing so, they were being asked to apply the marketing principles they had been taught and observe the results in practice. In short, they would be given an opportunity to run their own business to earn a profit and see how good they were at doing it. These decision processes could involve either a teamwork learning effort or an individual learning effort.

At the time, the profound innovative feature of marketing business simulation gaming, and indeed, most forms of business simulation gaming, was the exposure to a profit motivated competitive business activity. It was this element which encouraged Faria to develop the branding approach behind the first simulation game that he created. Faria and his initial co-author, Ray Nulsen, chose to brand their first marketing simulation game as *COMPETE*. The desire to create profit motivated competitive environments that had realistic representations of the market-place required that the simulation response model had to allow for multiple competitive decisions that interacted and were evaluated according to a dynamic response model. This was necessary to make the competitive outcomes and the profitability of the results produced by the simulation model react differently to the varying kinds of decisions the competing student businesses were making. The desire to truly understand the learning potential and impact of the marketing simulation gaming experience that was created was the impetus which gave rise to a considerable amount of Faria's research for the remainder of his career.

In the case of Wellington, the initial force behind the adoption of marketing simulation games was the inertia associated with the fact that there was an established history of their use in the courses which were being taught at the institution at which he was hired. Notwithstanding, Wellington had been previously educated in two different business schools where business simulation games and computer simulation models were employed as instructional tools. Wellington played *COMPETE*, a logistics simulation game, and he experimented with the econometric simulation known as "Fair's United States model" (Fair, 1984). Despite having had these student experiences which affected his attitudes towards business simulation games; Wellington approached the notion of employing marketing simulation games with an open mind as to their appropriateness for contributing to the achievement of the program learning goals, course objectives and learning outcomes of the courses that he instructed. Throughout his career, in order to assess the effectiveness of marketing simulation gaming as an instructional methodology, along with the other tools he used for instruction, Wellington engaged in empirical research.

As presented earlier, the achievement of learning objectives in a particular course, tied to particular degree program goals, needs to be articulated before selecting an instructional tool. We can report firsthand from our combined 50 years of teaching experiences, that by employing the vehicles of marketing simulation games in our collection of courses, we have either exposed, or enabled, our students to achieve the following eleven learning objectives:

1) To experience the nature of business competition in an environment which is subjected to recurring decisions.
2) To develop decision making skills in support of achieving profit maximization.
3) To demonstrate decision making ability in support of achieving profitability.
4) To experience dealing with uncertainty.
5) To develop and implement marketing strategies in support of achieving profit maximization.
6) To learn by doing (the essence of experiential learning).

7) To undertake applications of marketing principles in support of achieving profit maximization.
8) To undertake and experience iterative decision making.
9) To learn retrospectively from the outcomes of decision making in support of achieving profit maximization.
10) To understand and implement sales forecasting methods.
11) To set and achieve marketing and business objectives in support of achieving profitability.

EXPERIENCES AND RESEARCH IN USING MARKETING SIMULATION GAMES

With respect to research into the administration of business simulation games, Faria and Wolfe (1999) surveyed the literature of the first twenty-five years of the ABSEL proceedings and identified the following six topic areas as being the most written upon: 1) the correlates of high game performance for game players; 2) the effectiveness of games in teaching strategic management; 3) the effectiveness of games in teaching marketing; 4) the theoretical and practical validity of the mathematical models employed in various business games; 5) the question of what games teach?; and 6) how learning can and should be measured in experiential learning environments?

In essence, at one time or another, we have produced papers that have fallen into each of these six categories. However, rather than presenting this section in accordance with this classification, we have chosen to go in another direction and present it in accordance with the primary reason we undertook our research in the first place. We wanted to reach an understanding of the best ways to employ marketing simulation game exercises to create good learning experiences to educate our students. We also wanted to assess and validate these learning experiences. As such, the experiences and related literature we will report on in this section will be organized as follows: marketing simulation administrative considerations; marketing simulation selection considerations; learning enhancement exercises for marketing simulations; and validating marketing simulation games/ models for educational use.

Marketing Simulation Administrative Considerations

The nature and type of marketing simulation game and the manner by which instructors set up the simulation exercise is a key element which influences the kinds of learning that students can engage in. It also affects their attitudes towards the experience. Faria (1986) looked at how simulation performance and attitudes towards the experience were affected by a number of conditions controlled by the instructor. His study considered the level of game explanation (high or low), grade weighting (20% or 40%), the sizes of teams (3, 4 or 5) and the homogeneity of student team composition (domestic; international; domestic and international). He investigated 538 students formed into 135 different teams (90 domestic; 22 international; and 23 domestic and international), who played a moderately complex marketing simulation game.

Faria (1986) discovered that the average earnings performance of international student teams tended to be higher than either of domestic student teams or mixed international and domestic teams. He concluded that international students were not disadvantaged in learning by participating in a simulation gaming exercise. He also observed that international student teams were highly cohesive while mixed international and domestic student teams were the least cohesive. He found that attitudes towards the simulation experience were related to performance with more positive attitudes amongst leading performers and more negative attitudes amongst poor performers. The best performances were amongst teams of three, followed by teams of five and then teams of four. The teams of three had the most positive attitudes towards the simulation experience while teams of five were next and teams of four had the least positive feelings. Additionally, teams of three and teams of five reported more equal sharing of work than teams of four. Faria (1986) speculated that odd number teams allowed for voting on decisions without ties and this may have reduced conflict.

Faria (1986) provided the following recommendations based on his study: 1) use team sizes of three, 2) more homogeneous teams will be more cohesive, 3) more detailed simulation explanations are preferred, and 4) simulation grade weights should not exceed 30 percent of the course grading percentage.

Wellington and Faria (1990) examined the organizational approaches to decision making for groups. They discovered that groups that employed a committee style of decision making performed better than groups that employed a regional management style. More importantly, aside from performing better, groups undertaking committee decision making also reported greater learning benefits from the simulation experience relative to readings and lectures. They also indicated having more enjoyment from the simulation experience.

When adopting marketing simulation games, the number of product-markets and the number of variable decisions that need to be undertaken in these product-markets can be very overwhelming for students and instructors alike. As complexity increases, more confusion can set in for students in coming to grips with all the decisions they need to make. This is referred to

as the complexity paradox of simulation games (Cannon (1995). Whiteley and Faria (1997) wondered if a gradual process of product-market entry in a marketing simulation game could improve the learning experience of student game players by reducing the impact of the complexity paradox?

Whiteley and Faria (1997) studied 56 students who had prior marketing simulation game experience in an introductory marketing course using a game which had 2 products and 2 markets to manage. In this investigation, the students each operated their own company in a moderately complex marketing simulation that was designed to offer 3 products and 3 geographic territory markets. The game administrators began the competition by restricting all the competitors to operating with the same single product in the same single geographic territory for the first decision period. Going forward, competitors were given the opportunity to enter new product-markets, one at a time. They had a limit of five product-markets in which they could compete and they could only introduce products in accordance with the principles of the market opportunity matrix concept.

The market-opportunity matrix has four quadrants: market penetration (sell more of existing products in existing markets); product development (develop new products for existing markets); market development (sell existing products in new markets); and diversification (sell new products in new markets). Students had to follow a sequencing process of market entry and uniquely, carry out one instance of market withdrawal (the controlled situation). This meant they had to think strategically in terms of their product-market management. They had to justify their decision making in writing to the administrator before being granted the right of entry and it could be denied if they were out of sequence.

In period 1 they were faced with market penetration – an existing product in an existing market. In Period 2 they were allowed to enter any of the other eight product markets. In Period 3 they were allowed to pursue only a product development strategy (new product in an existing market). In Period 4 firms could enter any open product-market of which there were now six available. In Period 5, the managers had to actively drop one product market while adding a product market. In Period 6 teams could not make any changes. They were forced to operate in the conditions they had set for themselves. In Period 7 teams could then carry out a market development strategy which was to add an existing product to a new market. This restriction was problematic for some competitors who had not expanded their product lines in earlier decisions and thus had limited the flexibility of their choices.

A survey of student opinions of the experience was undertaken at the conclusion of the game. Overall, 87 percent of the respondents found this simulation competition to be more competitive and more difficult than their introductory marketing course experience in which they operated in four product-markets. Additionally, 80 percent of the students perceived the cell-by-cell expansion approach as being both demanding and difficult. Similarly, eighty-four percent of the respondents felt that this constraint demanded greater decision-making skills and also created a highly competitive atmosphere. Lastly, 82 percent of the respondents reported that the controlled entry approach afforded more opportunities to learn about marketing strategy. Whiteley and Faria (1997) reported that they believed the controlled market entry strategy helped to overcome the impact of the complexity paradox and improve the gaming experience and learning of the players.

A very critical administrative decision in any marketing simulation game involves how many decision periods to schedule? At what point does the experience of the student shift from valuable incremental learning to becoming a boring routine decision? In the case of Whiteley and Faria (1997) where they had a controlled market entry program set-up, the game went on for eight periods. However, this only allowed the competing firms to enter 5 of the nine product-markets available. If one looks at the entry design, at least twelve decisions would be required to enable the game players to enter all 9 product-markets. It could be argued that as many as sixteen decisions might have been appropriate to enable the students to get the full benefit of the experience. This illustrates that one key consideration of the number of decisions to undertake relates to the game design itself. The game programmer may have set up the game to illustrate certain principles and scenarios which manifest themselves in different decision periods.

Setting the simulation design aside as the determinant of the number of decisions to schedule, Wellington, Hutchinson and Faria (2013) examined the issue of how many decisions to undertake using a performance based analysis. They carried out an investigation of past simulation competitions to determine when the performance position of competing firms in marketing games became relatively set. The attitudes towards learning and competition in marketing simulation games tend to be related to performance (Wellington, Hutchinson and Faria, 2010) and once that position is set, the benefits of additional game play are very likely to diminish.

Wellington, Hutchinson and Faria (2013) investigated performance ranking curves to examine the issue of when the performance ranking in marketing simulation games flattened out. They used a database of 1726 undergraduate marketing simulation teams that had competed in four different marketing simulation games which were used in multiple classes over a span of 15 years. They plotted out "performance ranking" curves using the correlations of ending rank order performance of

teams against their period by period rank order performance. These plots indicated that the strength of correlation increased over time and that final performance ranking was generally established by the fifth period. Based on these results, they concluded that marketing simulation competitions which focus on performance outcomes are unlikely to produce significant improvements in performance related benefits beyond the fifth decision period.

Instructors have a wide variety of marketing simulation games from which to choose. The level of complexity and the types of product markets are certainly important considerations. In order to make gaming conditions closer to reality, many games are structured to represent actual industries and their competitors. In these cases, the competing players may find themselves in unequal starting positions in terms of sales, market share and profitability. In these circumstances, employing earnings or stock market price measures of performance as grading tools is patently unfair to students who must operate the weaker competitors. And yet, unequal or not, the objective functions of these simulations encourage and reward earnings performance so that it cannot be totally thrown away. Teach (1993) offers a ready solution to this circumstance by recommending forecasting accuracy as being the most appropriate means by which to assess performance in a business simulation game.

Marketing Simulation Selection Considerations

The considerations that go into the choice of a particular marketing simulation game for use in a class are not separate from the previous discussions. Notwithstanding, based on our research and specific experiences, we present this section with the intent of providing some informed guidance. A good place to start is with the intent behind the simulation exercise as an instructional learning tool. Next, the instructor needs to consider the nature of the users who will be employing it for learning. The nature of the users will condition the requirement of the ease of use for the instructor and the students and this will be related to the complexity of the game (number of product markets, total number of variable decisions, equal or unequal starting positions). The complexity of the game will dictate the organizational role of the decision makers. In considering ease of use, the computer platforms that the game will be resident on comes into play. Next, the computer platforms are often linked to the revenue model that compensates the developers and costs either the students or the institution. Lastly, the actual cost to the student and the physical means by which they make payment have to be considered.

Faria and Schumacher (1984) report on the use of a marketing simulation game to educate management trainees. They discuss how simulations can focus on three areas of development: 1) participants can sharpen the analytical skills necessary when making judgments on the basis of incomplete information and, as well, experience the immediate consequences of those decisions; 2) managers can gain insight into their own behavior as the actions of others are identified and interpreted; and 3) the manager is given experience in dealing with others owing to the requirement that decision simulations involve joint decision making.

Faria and Schumacher (1984) offer the following benefits from using marketing simulation game exercises in management training: 1) They are active exercises as opposed to lectures and discussions which are passive. 2) Simulation decision making provides consequential results for decision making and decision makers gain experience from making a lot of decisions in a compressed time frame. 3) The feedback on decision results is immediate and discussions can be focused on game results.

Faria and Schumacher (1984) noted the following drawbacks in the use of games in training: 1) Marketing simulation games are rarely specific to the business of the trainees involved. 2) The evaluation of game performance may not be appropriate for the training situation. 3) The game results have the potential to hurt the self-esteem of the managers. If they perform poorly they will reject the experience as being invalid and they will do so much more readily than business students.

Faria and Dickinson (1987) report on a marketing simulation game that they developed for use to instruct students taking Principles of Marketing classes. The notion behind the game was to provide an active learning element in support of the typical lectures and textbook based instruction that are often used in introductory courses. The development of the game considered complexity and the number of variable decisions that would be appropriate. The game was moderately complex with 2 products and 2 markets and 40 total variable marketing decisions per period. The platform of the software was thought out and it was designed as a microcomputer focused game which was the dominant technology of the time. The game enabled instructors to use it at will on their own computer system. A key element was the ability of the instructor to set up the response conditions of the game. The game creators allowed the demand levels and the response sensitivities of the various game parameters to be adjusted by the instructor. This was done so that the game environments could be changed from semester to semester to prevent students who played the game in one semester from passing their decisions on to other students to use in a following semester. The compensation approach of the developers was a traditional royalty from student manual sales.

The background and culture of the simulation user is something that needs to be considered in the selection of simulation games for participants. Faria, Dickinson and Peterson (1996) report on their experiences with exposing a group of 35 Estonian academics and professional managers to a North American marketing simulation game as a training tool in a seminar. At the

time of this seminar, the Estonian economy was transitioning from a government controlled market economy towards a free-market economy. The group of 35 was formed into eight teams which were divided into two industries to undertake some decision making using the *Marketing Management Simulation Game* (Faria and Dickinson, 1995) which operates with a dynamic response demand model.

The *Marketing Management Simulation Game* functioned as an introduction to a North American business model for the seminar participants. When the teams undertook their simulation decision making they applied the decision making strategies they were familiar with, which were low price and cost minimization. Consequently, the dynamic demand response model of the simulation was not highly engaged, the sales response of the marketplace was low, and profitability response was negative. Despite being encouraged to invest money in promotions to stimulate the market, the managers remained locked into their mindsets throughout the simulation focusing solely on price as the main demand stimulator.

Despite the initial failure, Faria, Dickinson and Peterson (1996) were hopeful that with continued use of North American business simulation games, the Estonian academics could teach their students how to adapt to the new economic system that the country was entering into. They entertained the notion of developing a simulation game for a transitioning economy, but in observing the rapidity with which the Estonian economy had already privatized its businesses, they determined that such an effort would not be worthwhile.

For both business simulation game adopters and creators, the method of distribution of the games, and the revenue models used to compensate creators, and cover costs of development and distribution, are critical. Fritzche et al (2002) discussed the distribution efforts from the perspectives of both adopters and creators. From the standpoint of adopters, they want fast access to their simulations, easy access or trouble-free installation of programs, error free running of the simulation, and quick and accurate responses and solutions to operating questions and any software errors that occur. In addition, they want low costs for their students and for payment methods to be convenient. At that time, Fritzche et al (2002) reported that business simulation games were generally distributed in one of three ways: 1) by major publishers; 2) by small independent publishers; and 3) directly by the author(s) using some type of licensing agreement. The support systems generally fell into one of three configurations: 1) support from the publisher; 2) support directly from the simulation author(s); 3) a mix of some general support from the publisher and support from the author(s) for more complex issues. Adopters generally expected to have free support.

In the current business simulation gaming environment, creators are highly focused on maintaining control of their intellectual properties while also maximizing their revenues. Consequently, virtually all business simulation games are offered via internet platforms and the adopters are sold temporary licenses for use. The ability to access and control data from the business simulation games that adopters employ is far more limited. The ability of adopters to set up the simulation environments for their students varies from game to game. However, in selecting business games for usage, our experience is that control over demand and response parameters to student decision making is an extremely important consideration. If it is not available, we will not consider selecting the game.

Learning Enhancement Exercises for Marketing Simulation Games

The application of external exercises in association with marketing simulations to enhance learning has been part of our experience of simulation use from the outset. Having said this, Wellington has employed marketing simulations with limited external exercises and focused on using them as retrospective learning vehicles focusing on class debriefing to cap off the student experience. Still, the richness and variety of learning enhancements that can be employed in conjunction with marketing simulation games cannot be overstated and are only limited by the imagination of the instructor. Over our careers, we have employed a tremendous number of exercises for this purpose and have attempted to assess their effectiveness. In this section, we will share the enhancement exercises we have studied and report on our experiences with them.

From the outset, Faria and Nulsen (1974) were highly cognizant of how additional assignments could be used to enhance learning in association with game play. They initially classified additional assignments into two categories: 1) internal activities (financial statements, instructor consultations, game stimulators); and 2) external activities (written reports such as: team objectives reports, one-page reports, team final reports, and videotape reports).

Despite the fact that the marketing simulation game they employed produced its own informational reports, including financials, Faria and Nulsen (1974) tasked their students with creating pro-forma financial statements and cash flow statements which would be turned in a couple of times during the competition. The purpose behind these assignments was to encourage the students to fully link their decision making to their decision results. Faria and Nulsen (1974) reported informal student feedback on these exercise stating that the students did not enjoy engaging in them, but they considered them to be extremely valuable to their learning and understanding.

With respect to external activities, students were required to provide written objectives for their simulation teams. Faria and Nulsen (1974) do not indicate whether students were held to account for these objectives as forecasts. Rather, they report using them as information to guide students and ground them when they set unrealistic and inconsistent objectives. Faria and Nulsen (1974) also had students submit decision reports to explain their intended strategy and the logic behind it. They also had students' complete summary reports of the results of the competition as a means of reflection of their learning from the experience. Another external exercise involved the creation of videotape and audiotape ads of the products of the marketing simulation. The intent of the assignment was to offer a 'fun exercise' where students could engage their creative sides and express their feelings about the experience.

Faria and Nulsen (1974) report that in classes where they enhanced their marketing simulation game with external assignments, they observed that the competition was keener, the overall industry performance was better, and the student enjoyment and opinions of the educational benefits of the simulation, were higher. They commented that from the perspective of the instructor, the use of external exercises allowed for more individualization of the course, enabled adjustments to the course from one semester to the next, provided more criteria for grading the simulation efforts, and the simulation experience could be made to reflect the real world better.

Nulsen, Roussos and Faria (1993) and Nulsen, Faria and Roussos (1994) presented information on how a computerized decision support system they called CAP, had been coupled to the output of the *COMPETE* (Faria, Nulsen and Roussos, 1994) marketing simulation game. CAP enabled both student's and instructors to immerse themselves more deeply in the simulation experience. The students were able to learn how to employ a highly useful informational tool to assist their decision making process. The spreadsheet tool enabled instructors to review the dynamics of the game competition more effectively as well. The decision support tool enabled game participants to develop a "more comprehensive understanding of the competitive environment, the dynamics of competition, and the interaction of the controllable marketing mix variables within a highly competitive situation" (Nulsen, Roussos and Faria, 1993, p. 132).

Nulsen, Faria and Roussos (1994) described the CAP program as offering the following eight benefits for marketing simulation participants:

1. Permits quick and easy calculation of next period forecasts.
2. Permits the creation of color graph summaries of decisions and the resulting outcomes for each period.
3. Completed spreadsheet may be printed and used as an historical record; they are very useful for year-end, mid-game, or final summary reports.
4. Allows "what-if" post-hoc analysis of decisions.
5. Quickly identifies unprofitable products and regions.
6. Allows for quick cash flow analyses by products and geographic regions.
7. Time-series spreadsheets allow tracking of competitive industry decisions and performance versus your firm.
8. Generally provides an enhanced understanding of the important decision variables and their relationship to outcomes.

Over the years, Wellington has employed, *Markstrat* (Larreche and Gatignon, 1977), *COMPETE* (Faria, Nulsen and Roussos, 1994), *Oakland Baseball Simworld* (Abraham, 2003), *Marketplace* (Cadotte, 2002), and *StratSimMarketing* (Kinnear, James & Deighan, 2007) in his undergraduate and graduate strategic marketing management courses. Wellington's approach has been to introduce the planning process to the students and then have them undertake it and actually implement it through the vehicle of strategic marketing simulation game play. Anecdotally, he believed that the quality of the student planning process and the accuracy of their forecasting efforts was being reflected in their simulation game performance results.

Prompted by Wellington's belief in regard to his strategic marketing class experiences, Wellington, Hutchinson and Faria (2013) investigated the issue of evaluating student learning and performance in marketing simulations when students competed under both equal and unequal starting positions. They measured learning by investigating the relationship between participant planning quality, sales and earnings forecasting accuracy, and earnings performance in two different marketing management simulation games. The subjects of the study were fourth year strategic marketing management students who competed from an equal starting position in the *COMPETE* (Faria, Nulsen and Roussos, 1994) simulation game (n=32) or from an unequal starting position in the *StratsimMarketing* (Kinnear, James & Deighan, 2007) Simulation game (n=34).

The basic hypothesis was that all three variables would be highly and positively correlated (Pearson's r-value > .50), for each of the simulation competition groups, and also both groups combined. The findings were that for the *COMPETE* players-equal starting position, the *StratsimMarketing* players-unequal starting position, and both groups combined, there were no significant relationships between plan quality and forecasting accuracy when performance was controlled for.

For *COMPETE* players-equal starting position, and the *StratsimMarketing* players-unequal starting position, analyzed separately: there were no significant relationships between plan quality and earnings performance level controlling for forecast accuracy. In the combined group analysis, there was a significant correlation between plan quality and earnings performance when controlling for forecast accuracy (r-value .291, sig. .019).

Finally, there was a significant relationship between forecasting accuracy and earnings performance level controlling for plan quality for *COMPETE* players-equal starting position (r-value .368, sig. .042); *StratsimMarketing* players-unequal starting position (r-value .461, sig. .007); and lastly, the combined two groups (r-value .363, sig. .003).

Although mixed, the results of Wellington, Hutchinson and Faria's (2013) study are highly encouraging. A medium strength relationship was found between forecast accuracy and earnings performance which indicates that both methods of assessing marketing simulation game performance are reinforcing. As a vehicle for assessing marketing simulation game performance, forecasting accuracy is definitely a worthwhile tool. The finding for the combined groups indicated that the quality of planning had a significant correlation of .291 with earnings performance when forecast accuracy was controlled for. This correlation is just below the threshold of a medium strength relationship. On its own, this finding does not offer the kind of ringing endorsement one would want as a basis to justify having students invest the time necessary for a strategic planning exercise tied into a marketing simulation game.

However, as a marketing simulation enhancement, we believe that the pedagogical nature of the planning exercise provides valuable learning in terms of its process despite having a weak relationship to simulation performance results. For example, Arasa and K'Obonyo (2012) conducted a study on real-world business and they report a very strong relationship between the strategic planning process and business firm performance (r-value of 0.616 sig. .01). This finding provides a strong justification for linking a strategic marketing planning process to a strategic marketing simulation game exercise, even if the simulation performance outcomes might at best, be only weakly related to the quality of planning.

Validating marketing simulation games/models for educational use

The degree to which marketing simulation games behave and act like real world market situations enriches the student experience and prepares them for their careers more effectively. If the gaming experience were no more relevant than playing a multi-player online web game like World of Warcraft, then why undertake it at all? On the other hand, if student's can gain valid marketing decision making experiences while avoiding risk to either themselves or an actual business, then why not do this? We have conducted numerous studies of marketing simulation games with a focus on two aspects of validity: internal validity and external validity.

The definition of internal validity that we have used in our research is the one proposed by Dickinson, Whiteley and Faria (1990, p. 48) who state: "It is the position of the present study that participation in a simulation game is an internally valid experience to the participant make (sic-made) decisions which are consistent with the environment with which they must contend."

The definition of external validity of a business simulation game which we employed in our research on this topic is the one suggested by Carvalho (1991) which is "a measure of how well the business game models the real-world industry in which the simulation takes place."

Studies of internal validity - Dickinson, Whiteley and Faria (1990) undertook a study to "investigate the internal validity of an experimentally manipulated simulation game environment." They looked at student team decision making in a medium complex marketing simulation game (Dickinson, Whiteley and Faria, 1990). Teams were asked to make marketing decisions in the face of one of two opposing marketing environments, a push parameterized environment or a pull parameterized environment. The perceptions of the teams about their environments were not measured, only their behaviors. A post-competition analysis of the decisions of the teams indicated that on the whole, participants in the pull parameterized environment did not make operational or strategic decisions that were significantly different from teams that were facing the push parameterized environment. There were only a few decisions that seemed to indicate an appropriate adaptation to the environment. The finding from the study that the participants were only partially able to adapt to their environments was an indication that the internal validity of the game could not be established.

In a replication study, Whiteley, Dickinson and Faria (1992) altered the unit of analysis from teams to individuals to examine the adaptive behavior of players to different push and pull parameterized environments. Once again, the perceptions of the individuals concerning their environments were not measured, only their behaviors. The findings were essentially the same as the earlier work using teams. Individual participants in the pull parameterized environment did not demonstrate adaptive

learning by making operational or strategic decisions that were significantly different from those facing the push parameterized environment. Despite making adjustments in the unit of analysis, the findings did not support the concept of internal validity.

Dickinson and Faria (1994) took an experimental approach to investigate the internal validity of their marketing simulation game. They state that they are using a "criterion for the validity of simulation participation that is akin to the random sampling error basis of statistical hypothesis testing. Specifically, whether the results of participants presumably acting on logical, analytical, thoughtful bases (sic – basis) are significantly better than results obtainable on a random decision-making basis" (Dickinson and Faria, 1994, p. 35). They conducted an experiment which involved 55 simulation industries composed of four companies. Each industry had three student participant operated companies and a fourth random strategy company which was administrator operated. Each team made 32 separate marketing decisions for each business quarter. The decisions of the random strategy company were made randomly subject to one constraint: They were chosen to be within the range of the highest and lowest decisions of the actual participants. As such, the random companies would have decision characteristics that would trend towards the median of the industry for any particular decision, although each separate marketing decision would reflect an uncoordinated strategy. The finding was that actual participant companies outperformed the random strategy companies between 62 and 64 percent of the time. Dickinson and Faria (1994) concluded that the simulation experience was a meaningful one. Even though it was not couched as such, the finding is supportive of the notion of internal validity for the simulation game. The student participants clearly adapted better to the environment than a random strategy company.

Employing a controlled and manipulated study of student teams involving a comparison of a two control groups versus two treatment groups, Wellington and Faria (1997) once again used two divergent push and pull environments. In this study, the treatment groups had an artificial market leader team operated by the investigators. The market leader team knew the environment and decision by decision would 'lead' the industry in the direction of making decisions that fit the environment best. Active student teams were provided full access to all the industry market research so that they could observe the actual decisions of the market leading teams and learn from them. Consequently, the team players in the treatment groups adapted more appropriately to the actual environment than in the control groups. And yet, despite having an ideal example to follow, there were misalignments in their adaptations in that they did not appropriately adjust their decision making for decision variables that were not highly responsive. The ability of the students to adapt to the environment can be taken as support for the notion that the marketing simulation game possessed internal validity.

In a continuing effort to explore the internal validity of marketing simulation games, Wellington and Faria (1995) carried out a study to determine if marketing simulation decision making represented a repeatable skill or was simply due to luck? They conducted an experimental research study where they had 555 students on 161 teams play two rounds of the same simulation. In between rounds, the teams were reassigned to different industries to face different competitors and the game parameters were altered to create a different response environment so the players could not employ the same strategy. Wellington and Faria (1995) found a medium to strong relationship (correlation with an R-value of .4419, significant at .000) between rank order performance in one round of the simulation competition versus rank order performance in the second round of the competition. It was concluded that simulation performance was relatively stable over time and that good performers will tend to remain good performers and poor performers will tend to remain poor performers. This research supported the notion that the marketing simulation game used possessed internal validity.

Wellington, Faria and Whiteley (1997) followed up on Wellington and Faria (1995) with another study of the notion of whether marketing simulation decision making represented a repeatable skill or was simply due to luck. They studied a small sample of 27 students who played a simulation with four product markets in an introductory marketing course and then played a marketing simulation with nine product markets in a second applications based marketing course. They compared the rank order performance of the students in the first competition versus their rank order performance in the second simulation using a nonparametric rank-order correlation analyses. They report a correlation with an R-value of .0580, significant at .774. The lack of a relationship is evidence against internal validity.

Wellington, Faria and Hutchinson (2007) carried on from Wellington and Faria (1995) and Wellington, Faria and Whiteley (1997) to further investigate whether simulation performance by individuals was representative of individual skill or due mainly to luck. This investigation sought to overcome a key limitation of the Wellington, Faria, and Whiteley (1997) research which was a small sample size of 27 individuals. The new study involving 189 students found that players exhibiting higher rank order performance in *Merlin: A Marketing Simulation* (Anderson et al, 2004) tended to outperform players exhibiting a lower rank order performance in *COMPETE* (Faria, Nulsen and Roussos, 1994). However, although statistically significant, the relationship in this situation was weak. The researchers concluded there is some consistency in simulation participant performance across simulation competitions which provides evidence of internal validity.

The forgoing studies on internal validity demonstrate that more often than not, game participants struggled to accurately perceive the genuine nature of the simulation environments in which they were competing. Despite this, the studies also demonstrate that those participants who achieved a better relative understanding and acted more in concert with their environments, performed better than those that did not. There was also some evidence that game participants carried some of their ability to perform in one competitive situation over to the next, suggesting there was some consistency in performance. Although it is not the strength of evidence the researchers were hoping to uncover in support of the case for internal validity, the studies did find that participants who acted most in concert with the parameters of the simulation achieved better results. These findings do fit closely with the definition of internal validity that was initially posed by Dickinson, Whiteley and Faria (1990).

Studies of External Validity - We have engaged in a wide variety of research experiences with marketing simulation gaming to uncover evidence for external validity. The first of such efforts was by Green and Faria, (1995) who attempted to relate PIMS research findings that successful strategies in a particular marketplace/economic environment will continue to be successful strategies in similar environments - even if competition is changed. Using *COMPETE* (Faria, Nulsen and Roussos, 1994), they operated a simulation competition involving 430 students divided into 125 teams of three or four competing in 25 industries of five companies each. The students made twelve decisions representing three years of operations and the performance of the teams was evaluated on the basis of earnings per share (EPS) performance.

When the competition was completed, the researchers took all the decisions of the winning teams. They randomly reassigned the winning teams to another of the twenty-five industries thus resetting all 25 industries with the same existing competitors along with a new competitor who had been a "leader" in a different industry. The researchers then re-ran the simulation to see if the strategy of the leading firms would remain successful. Green and Faria (1995) discovered that 18 of the 25 original leaders remained in first place (72 percent) while another 3 teams came in second place (12%). These findings indicated that good strategies were transferable from one competitive environment to the next in accordance with the PIMS principles. This was taken as evidence of external validity for the marketing simulation game.

Wellington, Faria and Hutchinson (2008) undertook a follow-up investigation to Green and Faria (1995) to address a limitation reported in the earlier work, namely the use of post-facto data, where, a winning strategy in one simulation industry was randomly transferred to a second industry and then all decisions were rerun to test the effectiveness of the strategy in a different competitive environment. In Green and Faria (1995) the winning strategies were identified at the "end" of the simulation and the strategies stood on their own. Further, in the re-run, neither the original winning strategies nor the competitor strategies could be adjusted in real-time.

In the updated study, Wellington, Faria and Hutchinson (2008) employed *Merlin* (Anderson et al, 2004). They sought to overcome the limitations of Green and Faria (1995) by introducing an "optimal" winning strategy decision in every industry, by adjusting the strategy period-by-period and by having the optimal strategy decision introduced during interactive game play so that competitors could react to it. The study, involving 423 students grouped into 73 different industries, found that an optimal strategy decision was significantly superior in seven out of eight simulation competition decision periods. It was concluded than an optimal strategy decision was consistently good and transferable in a simulation environment, thus providing evidence of external validity.

Faria and Wellington (2004a) continued to research into the external validity of business simulation gaming in accordance with the PIMS principles. They investigated one of the more well-known findings of the PIMS project, the notion that high market share leads to high profitability in the real world. If this relationship were to be found in a business simulation game, it would be evidence of the external validity of the business simulation game. They compared the past simulation gaming performance results of 440 marketing simulation teams in two different simulation games to determine if there was a strong correlation between earnings results and market share. The overall correlation between relative market share and relative earnings performance had an R-value of .496 (.000 significance) while actual market share, and actual earnings had a correlation with an R-value of .309 (.000 significance). Both findings are medium strength levels of correlation. They concluded that the business simulation provided adequate representations of real world businesses and thus exhibited, external validity.

Faria and Wellington (2005) maintained their focus on examining whether business simulation games supported findings from the PIMS project, thus demonstrating external validity. They examined the relationship between high product quality and high profitability for the *COMPETE* (Faria, Nulsen and Roussos, 1994) business simulation game. They analyzed the past simulation gaming performances of 451 product-based SBU's from 152 simulation firms competing in 33 industries. They discovered that there was a strong correlation between return on investment and product quality levels (R-value of .576;

significance of .000) which is in agreement with the reported finding from the PIMS project research. This was taken as excellent evidence of external validity for this simulation game.

Wellington and Faria (2006) carried on their research stream on the degree to which business simulation games exhibited external validity by adhering to the principles of business reported on in the PIMS project with a study involving *Merlin* (Anderson et al, 2004). They wondered if this game would demonstrate the phenomenon of natural market structures as reported on by Buzzell (1981). He had reported that market share size distributions of business firms within an industry followed a skewed distribution and firms had a size ratio, on average, of 0.6 relative to their next largest competitor, a condition he termed as being a natural market structure.

Wellington and Faria (2006) examined the market share size distributions of 509 different simulation companies competing within three different industry competitive structures (6, 9 and 12 firm competitions). The market share performances of these firms were examined to test conformity within this simulation environment to the real world findings as reported from the PIMS data. It was found that competitive structures within the business simulation industries exhibited a skewed market share distribution and a consistent size ratio as suggested by the PIMS findings. A notable difference was that the size ratios in the simulation were at the higher range (values around .90) as compared to real world industries which Buzzell (1981) reported as being in the range of 0.6. This was taken as evidence in support of a simulation game fitting with real world principles, thus supporting external validity.

Employing game player behavior response as a source of evidence for the external validity marketing simulation games, Faria and Wellington (2002) looked at the manner in which business simulation game players would go about identifying who their key competitors were. Would student game players use the same criteria to identify their competitors as real world managers? They looked at a study by Clark and Montgomery (1999) who sought to identify key attributes of competitors based on a survey of experienced business people. Clark and Montgomery (1999) identified ten key attributes which were ranked in order of mention as follows: 1) Products offered; 2) Product Positioning; 3) Geographic scope of market; 4) Resources; 5) Customer Perception of firm; 6) Price; 7) Competitor Size; 8) Distribution; 9) Financial Strength; and 10) Competitor behavior.

Faria and Wellington (2002) examined 390 simulation teams from two different marketing courses playing two different simulations. There were 360 teams composed of individuals who played the *Paintco V* Simulation (Galloway et al, 1997) in an introductory marketing class and there were 30 teams who played the *COMPETE* simulation (Faria, Nulsen and Roussos, 1994) in groups of three or four in a marketing applications course. The researchers undertook three survey measures to gauge how the importance of competitive measures might change over the course of the competition. Only 96 teams completed all three surveys with all 30 teams playing *COMPETE* doing so and only 66 of the teams from the introductory marketing class doing so. In these reports the simulation participants were asked to: (1) rank each of their competitors from strongest to weakest; (2) award points to each of their competitors using a 100 point, zero-sum point allocation scale with each competitor being given a point total in relation to the perceived importance of that competitor; (3) rank each competitor on a seven-point Likert scale as to the perceived direct threat of that competitor to the respondent company's sales and market share; and (4) describe in words why the company identified as the most direct competitor was selected as such.

A comparison of the most frequent types of attribute descriptions in each of the three surveys was undertaken to identify them and to see if they matched up with the attributes identified by Clark and Montgomery (1999). This analysis produced the following attribute listing in order of frequency of mentions: 1) Earnings; 2) Market Share; 3) Pricing Strategy; 4) Return on Sales; 5) Product Quality; 6) Advertising; 7) Manufacturing Costs; 8) Marketing Strategy; 9) Sales; 10) Salesforce Strategy; 11) Distribution; and 12) Efficiency Ratio. The conclusion of Faria and Wellington (2002) was that the student game participants used the same basic attributes to identify competitors as real managers. This was taken as evidence in support of the external validity of the game playing experience.

Wellington and Faria (2003) replicated Faria and Wellington (2002) using a sample of 45 real world managers who were undertaking executive training programs which involved the use of the *COMPETE* Simulation (Faria, Nulsen and Roussos, 1994). They combined elements of the Clark and Montgomery (1999) study by asking the managers to undertake two survey tasks. They asked the managers to identify the attributes that they used to identify their competitors in the business simulation gaming environment. When the training program was completed, they then asked the managers to identify the attributes that they used to identify their competitors in their actual working environments. The researchers compared the lists of attributes the executives identified for the simulation exercise, to the list of attributes they identified with their work environments, and then to the list of attributes reported in the Clark and Montgomery (1999) study, to see if there were consistencies.

In order of frequency, the managers in the executive training program identified the following competitive attributes from the Compete Simulation game: 1) Earnings; 2) Pricing Strategy; 3) Advertising; 4) Research & Development; 5) Market Share; 6) Marketing Strategy; 7) Product Quality; and 8) Sales. They identified the following list of competitive attributes from their

actual working environments in order of frequency: 1) Products; 2) Product Quality; 3) Market Share; 4) Sales; 5) Pricing; 6) Benchmarking; 7) Technology; 8) Company Reputation; 9) Geographic location; 10) Global Presence; 11) Serve same customers; and 12) Earnings. We found there was a lot of concordance between the competitive attributes that real world managers used to identify their real world competitors and their business simulation gaming competitors. We concluded that this was further supporting evidence for the external validity of a marketing simulation game.

Our findings from our various investigations into the external validity of marketing simulation games was that for the most part, these games model real world principles very well and thus satisfy this validation criterion.

THOUGHTS ON BUSINESS SIMULATION GAME PLAY AND ITS IMPACT ON MANAGEMENT DECISION MAKING

Even though they are far less complex than real world situations, business simulation games present enough challenges that students have difficulty fully comprehending them. Our experiences in using marketing simulation games over the past 50 years has made us realize that even when playing the most basic marketing simulation game, the players have difficulty coming to a true understanding of the nature of their simulation environments. In general, student players cannot accurately articulate the parameters the games are functioning under. We are aware of one exception to this circumstance.

Wellington et al, (2012) discussed a situation where a group of highly motivated MBA students went to the trouble of figuring out the parameters of the marketing game that had been used at their University for a number of years. In doing so, they managed to approximate the simulation model very effectively and beat the game, thus making it unusable for either competitive or performance evaluation. We have not seen this circumstance ourselves in any of our classes during our combined 50 years of teaching.

Rather, our experience has been that despite not truly understanding the dynamics of their environment, good simulation performers seem to come to a better relative understanding and they accomplish this faster than poorer performers. We have concluded that relative advantages decide outcomes of simulation competitions, as opposed to absolute advantages. From what we have observed throughout our careers, this situation also seems to be the case in the real world. We have often heard our students complain that they would perform better if the simulations were more like the real world. Our answer to this excuse is that if you have trouble understanding and performing in a less complex environment, how can adding more variables and more complexity be better?

Another thing we offer from our experiences is our agreement with the proverb: You can lead a horse to water, but you can't make it drink! As instructors, we need to realize that not all our students come into a learning situation with a frame of mind where they are truly ready to partake of the experience. You can make the offer of learning, express it enthusiastically, and build in incentives for them to take in the knowledge. We have always done this hopefully. Unsurprisingly, we have discovered that not all our students respond to what we have to offer in the same fashion. Each student's own motivations and maturity are a key consideration.

We have tried to deal with the varying motivations of our students by abiding by the following principle of instruction: If you don't measure it, it won't be done. In an educational environment, where time is always a scarce commodity for students, it is unrealistic to expect them to spend time on learning knowledge or undertaking activities unless they are going to receive a direct reward for knowing or completing them. We might well believe that all knowledge should be considered worthy, but it will not be valued and pursued by students unless it figures directly into the course grading scheme. Why should they value it when you as the instructor don't value it by assigning a grade weighting of some kind?

Marketing simulation game performance abilities do not correlate well with general marketing knowledge as measured on MCQ examinations (Wellington and Faria 1991) but, they may correlate with particular capabilities such as quantitative analysis skills.

Lastly, almost all of our research findings were negative as to whether business simulation games were truly able to improve the collective decision making abilities of our students. At the same time, we found considerable evidence from our research that marketing simulation games could reveal individuals who already had good decision making abilities. Consequently, one of the notions we currently entertain as a result of our long association with business simulation games is: They might be useful as a form of aptitude testing for decision making abilities. There have been a couple of efforts to establish this potential by Wolfe and Roberts (1986, 1993) with mixed results.

14 RECOMMENDATIONS ON HOW TO USE MARKETING SIMULATION GAMES

We offer the following set of fourteen recommendations on how to use a marketing simulation game as a result of our research and experiences. These come from our experiences, but the reader may wish to visit other sources of guidance on this topic such as: "Helping New Game Adopters: Four Perspectives," by Goosen et al (2001); and "Using Simulations to Prepare Students to Think Critically, Make Better Decisions, and Solve Business Problems," by Caruso (2019).

Recommendation 1: Play it yourself before you use it.

An exception might be if you are at an institution where a game has been used for years by other instructors in a course and you are just taking it over. In that case, you have colleagues to guide you on potential pitfalls and problems. Still, you need to know for yourself how the game is going to react to decision making. Does it respond as you would expect? (e.g. A downward sloping demand curve). How much control do you have over the demand function(s) and the response parameters? How does the interface work? How does the simulation provider protect the confidentiality of your student's identities and take care of the data? Can you access critical data? What is the support system like for the simulation? Your students will certainly ask you questions and they will expect that you know all there is to know. If you have no personal experience, you won't able to answer them well, if at all.

Recommendation 2: Simulation Complexity - 2 products x 2 markets is the Goldilocks zone & 40 decision variables.

Our experiences indicated that students struggled to fully comprehend the environments of basic simulations and they really struggled when it came to more involved ones. Essentially the number of competitors and then the number of product markets and the number of business decisions being made affect the complexity. For marketing games, you can have a 1 x 1 (1 product by 1 market) situation which is the least complex. Then you add complexity as you go to 2 x 1 or 1 x 2. The next level is 2 x 2 and then you may have 2 x 3 or 3 x 2. Finally, there are some games that are 3 x 3. The more product-markets, the more decision variables that must be considered by the students. It also means more information for them to analyze and interpret before making follow-up decisions. Our experience has been with 1x1, 2x2, 2x3 and 3x3 (products x markets) games. Based on this, we feel that the 2x2 structure is the one in the Goldilocks zone. It's just right in offering enough complexity to be challenging and not so much as to be overwhelming. It can be handled by an individual and still provide enough of a workload to justify a team. As far as number of decision variables to consider, we have had experience with as few as 5 decision variables in a 1x1 game, 36 and 48 decision variables in 2x2 games, and as many as 73 decision variables in a 3x3 game. Based on our experiences, we would recommend around 10 decision variables per product market or 40 decision variables in a 2x2 game and this can be handled by either individual or group decision makers.

Recommendation 3: Number of industry competitors, 4 is ideal, no more than 6.

The number of industry competitors is critical. For example, if you have 5 competitors each making 40 decisions, then you have as many as 200 different decision variables impacting the outcome of the current period run that need to be analyzed. This will produce a great deal of data that needs to be considered. The more competitors, the more difficult it can be to discern what is happening in the simulation and how to react to it. We have experienced administering games with as few as two competitors and up to twelve competitors in any one single game. The recommendation we have is that in general, four is ideal, less than four does not provide enough variation, and more than six is too overwhelming.

Recommendation 4: Select a simulation with built in enhancements and has output that can easily be transferred into a decision support system.

Select a simulation that comes prepackaged with enhancement exercises. For example, one simulation we have used provided the ability to assign brand names to products by the students. This added a fun aspect in that they could personalize the products to themselves. It also enabled us to make brand name selection a learning exercise by asking students to justify their choices by applying principles of good brand name selection. If the simulation has a decision support system or the output can be readily exported to a spreadsheet like EXCEL, then so much the better. There are too many considerations to touch upon here. Just be aware that most marketing simulation games come with useful extras that are worth considering. Consider ones that fit with your teaching preferences and you think will excite and interest your students.

Recommendation 5: Teams or individuals – Teams of 3 or 5, individuals work best with less complex games.

Should you use teams or individuals for play? The depends a lot on the complexity of the marketing simulation game and the purpose of play. If it is to have students engage in teamwork as they learn to apply marketing principles, then of course teams

should be formed. If it is to have students learn to apply marketing principles, then individual play will make each person accountable and eliminate free riders. Interestingly, we have had individuals play a pretty complex simulation (3 products x 3 markets) and the students have handled it surprisingly well. Teamwork experience is frequently one of the desired experiences you want students to have though. We recommend team sizes of three as ideal with a maximum of five. Three and five are better than four because odd numbers allow voting to break ties in case of decision disagreements. Less than three people does not create enough interchange and it is nearly impossible to avoid either free riders or people being left out when business simulation teams exceed five people.

Recommendation 6: Don't form teams or start games until after the institutional course change date and pick a simulation that can accommodate player attrition.

This seems obvious, but instructor enthusiasm and the desire to get underway can lead to forgetting. We do not recommend forming teams or setting up the simulation industries prior to the normal institutional change of course date. It is important that the class enrolment have somewhat of a steady number before you begin. Once begun, there may be attrition amongst the class and this will affect the simulation play, especially if you have individual players operating individual simulation firms. Still, player attrition during an ongoing business simulation game is a typical problem that every administrator will have to deal with. The recognition of this problem is something that the creator of the simulation being employed may already have considered. Many simulations allow for the capability of deleting firms or restructuring teams and industries during simulation play. You can generally employ the approaches that are offered in this event. However, in the case where there is no built in feature to remove a team the following approaches can be used. The business firms left behind because of dropouts can be continued on as dummy firms and their decisions simply carry on as being the previous decisions they were making. Alternatively, marketing simulations often come with a set of default decisions already set up for running. One of these can be employed as the dummy decision. Another solution is for the instructor to enter an average decision on behalf of the dummy team. This way it will represent the middle of the industry and not disrupt the competition by being particularly good, or particularly bad. You can also enter a randomly chosen decision of a team from a different industry. We recommend using previous decisions first, where possible, and then default decisions if available. These approaches can save you if you formed teams before the change of course date!

Recommendation 7: Team formation by self-selection produces more cohesive teams and keeps you off the hook.

When it comes to constructing teams from the class, the self-selection method seems to produce more cohesive teams. It has one psychological benefit for the instructor as well. If a team forms that results in a lot of negative interactions, it is not your fault. The random assignment of students to teams is equitable and produces teams that are more cohesive than if you formed them on the basis of functional expertise according to business discipline major. Keep in mind, if you as the instructor create the teams, a burden of responsibility falls on you. In this case you have to consider creating mechanisms to allow teams to reconstitute or redistribute themselves. We have employed a kind of hybrid approach to team formation by applying managed self-selection. In managed self-selection the instructor distributes all the students a confidential two-page questionnaire in-class, via email, and additionally through a link on the course learning management website. We make it a completion exercise worth 1%. Once the teams are formed, to assure confidentiality, we return the questionnaires to the students or they can opt to let the instructor destroy them.

The students are required to fill in the questionnaire and answer a number of questions such as: personal strengths and weaknesses; work experiences; management style; learning style; organizational skills; written and verbal communication skills; preferred out of class days and times for group meetings; past business and performance report creating experiences; characteristics of people they like to work with; favorite foods, colors and types of movies they like; whether they consider themselves, morning, afternoon or evening persons for alertness; and finally the key question comes at the end where students are asked two things: 1) who they would like to be grouped with and 2) who they feel they cannot work with. This allows students to identify colleagues they feel would be cohesive to work with and identify those whom they wish to avoid. This second question was added based on the experience of Wellington who once put a recently divorced couple on a team using a random team formation approach. It created an uncomfortable situation which was resolved by reforming teams, but it would have been best to not have the situation arise.

The use of managed self-selection can take a lot of time when classes are large – there are a lot of questionnaires to sort through and evaluate. In addition, not all students complete the questionnaires so you have some incomplete information on your hands. The first recourse is to see if these persons have been identified as preferred team members by those who have completed the questionnaire. This can allow for their placement rather easily. In the case where they are not so chosen, there are few good solutions. They are likely to become free riders on other teams whether it is in their nature or not. The birds of a feather approach can be used whereby you can place all such students together on one team. In such cases, the teams are rarely

cohesive. They have already demonstrated that they are absent from class, don't read their emails or go on the course website regularly, and they have shown that they are non-compliant in completing their work.

Recommendation 8: Team organization – collaborative decision making.

Instructors can dictate the form of team organization through the structure of the simulation and the evaluation method. For example, in a 2x2 product-market game one could make each team member responsible for one product in one market. Alternatively, one could assign people to areas of expertise such as accounting, finance and marketing. From our experience, the most successful business simulation teams seemed to ones wherein the managers undertook collaborative decision making as opposed to specializing in making certain decisions

Recommendation 9: Number of decision periods – One trial decision and six competitive.

Firstly, it is well known that it is best to practice a skill before putting it into play. Make sure your students have an opportunity to undertake a trial decision before the simulation gets underway. Most games are structured to allow for this. Some games such as *Maven* (Anderson, Kaliski, and Lawton, 2012) have a practice module which allows competitors to practice against a computer model and test their strategies as much as they want. In any case, students need to be able to practice at least once so they can avoid making a disastrous decision to start and be out of the competition before they have even had a chance to begin.

As for the number of decisions that should be undertaken in a competition, this is often a property of the design and complexity of the simulation. It takes a number of iterations before decision makers develop both a process and some understanding of the environment both competitively and structurally. As far as performance outcomes go in simulations, our experience is that the rank standings of competitors are usually decided between the 4th and 6th decision. As such, if you are going to employ a business game, you shouldn't end it before the 4th period if you are assessing performance. Similarly, after the 6th period, things are unlikely to change much. If the performance outcome is a focus, this would be sufficient time for decision makers to establish their position.

Recommendation 10: One decision per week is ideal.

How frequently should students make decisions and how much time should they have to undertake them? We have been involved in intense learning time-frames for management training and for weekend MBA classes where we have used marketing simulation games. The experience with this is that first decisions in a simulation game take the longest to complete while the time-frame to complete decisions for follow-up iterations reduces considerably. Over the course of a typical six decision period game the length of decision making will go from hours to minutes on the part of both students and managers. As such, early decisions should allow for a longer frequency and time frames while later decisions can be more frequent with less time allowed. For a normal semester course we have typically stuck with a once per week style of scheduling to allow students to manage their time most effectively and thus we recommend this.

Recommendation 11: Weight the simulation grade at 30% (20% minimum – 40% maximum). Evaluate performance with both earnings and forecasting accuracy if starting positions are equal, forecasting accuracy if they are not.

Grade weighting of a simulation exercise can vary greatly depending on whether you have a lot of enhancement exercises and its focus in the course. Our recommendation is around 30%. These exercises are highly involving for both students and instructors and deserve the grade recognitions that goes with them. At less than 30% they may consume more time than they are worth, and at values a lot higher than 30%, they may become too dominant. We recommend 20% as a minimum and 40% as a maximum.

The evaluation of the simulation experience can take on many different forms and approaches and greatly shape its nature. Most marketing simulations are structured as competitive business situations where sales, profitability and market share information is reported. We feel that in accordance with the capitalist economic system, the underlying objective function of profit maximization should be the outcome that players strive for. As such, some recognition of this consideration needs to be expressed in the evaluation scheme to direct players to attend to this. Managers who are able to demonstrate the ability to make profitable decisions are what real world business firms are most in search of. Profit maximization, notwithstanding, there are many other evaluation considerations that can and should be used along with this, and although we didn't overtly recommend it, it might be highly reasonable to put them in place of it (e.g. triple bottom lines).

Forecasting accuracy is something that can be measured and required of students during game play. Requiring them to submit predictive outcomes for sales, market share, earnings and other financial elements of the simulation with each decision is what this involves. The predictions can then be compared to the actual results for accuracy. The ability to accurately predict the

outcomes related to their decision making would be a very strong measure of their understanding of the game dynamics and the relationship to their decisions. This is a valuable skill for students to demonstrate. We believe that employing this understanding in order to make better decisions leading to superior profitability is the outcome real world managers are really seeking.

If the simulation has equal starting positions (all teams start out the same) then earnings and forecasting accuracy are both good tools for evaluating performance, although we favor earnings. If the starting positions of teams are unequal to mirror the real world industry, then forecasting accuracy is a more equitable approach.

Recommendation 12: Create your own learning enhancement exercises – e.g. annual reports or strategic plans.

Preparing and making reports is something that all real-world marketing managers are expected to do. It's a good practice for your students to undertake marketing planning reports in support of their decision making. Through this they will demonstrate a tie-in between the course theory and principles they have been exposed to and their decision making in the business simulation. They could also be asked to undertake post-decision assessments and reflections on their results where they can once again express their thoughts with reference to the principles and theory that they have been taught. The quality of their writing and demonstration of knowledge can be assessed in these cases. Of course, a large scale marketing strategic planning effort can also be tied in as well. This is very comprehensive and a lot of work for both the students and the instructor, but it is very worthwhile.

Recommendation 13: Undertake pre and post-experience surveys and peer evaluations.

Measuring attitude and trait changes the students have undergone as a result of the business simulation gaming experience fits into the Assurance of Learning framework that AACSB accredited schools operate under. Students can be asked to undertake some completion assessed experience surveys related to the simulation. Post-experience, these could involve self-evaluations of what they perceived they had learned or experienced from the simulation. These surveys could also involve knowledge measures or psychometric scales to measure attitudes, knowledge, individual traits, and managerial traits. These knowledge and psychometric scale measures could be administered pre and post experience in order to determine if there have been any changes in the mental states or knowledge of the students as a result of the business simulation gaming experience. We have consistently undertaken this approach to see how the simulation was received and to understand if there were any transformations in key managerial traits of individuals.

The affect for marketing simulation gaming is something instructors can measure and it often correlates with the simulation performance outcome. We recommend tying these types of measures into the course learning objectives for reporting in relation to accreditation assessment.

Finally, it is important to undertake team peer evaluations as an attempt to understand the dynamics of what has gone on within a team situation. Our experience has not been very satisfying with peer evaluations because students usually don't rate one another appropriately. They are usually overly generous in their ratings. We have used highly involving group dynamic measures like *CATME* (Comprehensive Assessment of Team Member Effectiveness) which is available from the website info.catme.org. The training approach for students is excellent for this peer evaluation system. Despite this, the students still tended to be too charitable in their ratings. Regardless, it is always advisable to employ peer evaluations even if they are only an outlet for students on teams that have become dysfunctional and want to express their feelings on the matter.

Recommendation 14: Carry out a debriefing exercise.

This is usually the final step in implementing a marketing simulation gaming exercise. Going over the competition with the students and explaining the set-up and the intentions behind the exercise really helps them appreciate the experience. If the game has a set of variable parameter functions, you might go over how it was structured to respond to decision making. Discussing the opportunities of what they could learn from the experience is also very worthwhile. Providing insights into what kinds of decision making could lead to exceptional performance would be good as well. Having students share their feelings with one another and you in an open forum can be very illuminating.

THOUGHTS ON THE FUTURE

Given that the organization is 50 years old, perhaps the ABSEL fellows and ABSEL board could finally address the notion of the conceptual and operational definition of learning to overtly inform the members of the organization what ABSEL's

definition(s) of learning is/are and then publish this on the website. It may be as simple as accepting the American Psychological Association's definition or going through the exercise of creating ABSEL's own.

With respect to ABSEL itself, we note that despite being 50 years-old, it has not thrived as an organization on its own, while it's focus of study has, Business Gaming and Experiential Learning. As marketing professors we are highly conscious of the main reasons as to why any product or service fails to grow. There is either no need or demand for the product or service. Our surveys of gaming over the years indicate that the need and demand is evident for discourse on the use of business games and the application of experiential learning. ABSEL's failure to thrive is resident in the lack of an effective and consistent promotional effort in the face of considerable competition. There is tremendous competition from business discipline organizations whose conferences offer learning tracts that overlap those of ABSEL. The organization needs to distinguish itself. This could be accomplished by positioning the organization as the pre-eminent place to come to for interdisciplinary sharing of learning. Then a marketing campaign via internet communication needs to take place supported by frequent and constant communications need to be sent out to stay in touch with past attendees and also to identify potential future attendees.

The organization also needs to develop and foster links with external sponsors and reward their sponsorship by increasing membership and concomitantly, the commercial potential of the sponsors. Finally, an academic sponsorship is needed. We recommend a "host" institution serve as the focal point for ABSEL in the future to maintain its viability and provide the administrative support needed to maintain the website and the marketing communications required. We are aware of the risk that this may entail with internal politics of one institution overwhelming the organization. However, ABSEL's survival, continuity and growth are the balancing elements.

As far as research on business simulation games. We hope that some of our colleagues will take on the task of conducting an updated survey of simulation game usage over the next year or two to keep the ten-year tradition alive. We will gladly to provide a copy of our most recent survey questionnaire for our colleagues who may use it in whatever fashion they wish. We only ask that they when they do so, that they provide a source acknowledgment.

We offer what we believe to be a critical yet still mainly unexplored area of research which is the relevance and importance of developing good competitive instincts amongst students and how it might be of value to them in their working lives. Business simulation games are most capable of tapping this instinct and although we have measured competitiveness in some of our past research on simulation play, we have never followed up on the value of this trait in actual business success. Of the few researchers to undertake this kind of work, we want to acknowledge Wolfe and Roberts (1986, 1993). However, according to our current review of the literature, there really haven't been many serious efforts of this kind since.

All of our experiences with marketing business simulation gaming has involved a focus on one particular economic model and driving force – capitalism motivated by the maximization of profitability in the face of a monopolistic competitive environment. These have been the objective functions and competitive structures of most marketing simulations and sales growth often underlies the dynamic direction that the simulations take. The world that we and our students are now living in has changed. The current environment of our global world seems very close to that which English economist Thomas Malthus (D.O.D., December 29, 1834) predicted when he stated: "The increase of population will take place, if unchecked, in a geometric progression, while the means of subsistence will increase in only an arithmetic progression. Population will always expand to the limit of subsistence. Only "vice" (including "the commission of war"), "misery" (including famine or want of food and ill health), and "moral restraint" (i.e., abstinence) could check this excessive growth" (MacRae, 2022).

In actuality advances in industrialization enabled the means of food subsistence to increase at a tremendous rate so that Malthus' observations did not take hold as soon as he envisioned. However, the advent of global warming is likely the herald of the creation of a global environmental crisis which may well lead to a global ecological collapse, if we are not already experiencing it. In this event we will undoubtedly face vice in the form of war (Russia and Ukraine in 2022), and possibly on a global level. We have certainly been seeing misery which the COVID 19 pandemic has exemplified. Finally, there seem to be far more extreme weather related disasters in the forms of hurricanes, typhoons, floods and droughts than in the past.

In this age, we need business simulation gaming models that model resource efficiency and create managers readily prepared to make decisions for an economy driven by a different objective function - sustainability. We would advocate for the adoption of sustainability simulations and the development of new economic models that reflect the new reality of how we need to do business in the current environment. Online providers such as Aworld (2022) promises gamification approaches to show how to weave "sustainability into everyday life." The Green Business Lab" from https://www.gblsim.com/ focuses on the triple bottom line of people, planet and profit. We still feel that the inherent competitiveness of human beings needs to be recognized, but they will now compete to achieve sustainability goals.

CONCLUSIONS

Throughout this paper we have presented many reasons as to why a business instructor might use a simulation as part of a course curriculum. The readers have to decide for themselves if they are compelling or not. However, with respect to any doubts one may have as to whether business simulation gaming is a fully validated instructional method for business education or not, we can think of no finer endorsement than to report that on September 5th, 2022, AACSB International distributed an email promoting a virtual course on teaching with business simulation games! If the most prestigious Business School accrediting body is recognizing this educational tool by offering workshops on how to use it, it is clearly in the mainstream of business education!

We have always felt very confident in the validity and the utility of simulation gaming for marketing instruction. Despite our confidence, there has always been a dedication to follow a proper philosophy of science approach. We have always made efforts to maintain objectivity in undertaking our research on our uses of this instructional tool. In reviewing all the intricacies and difficulties that we have experienced along the way as a consequence of our adoption and use of marketing simulation games, we have often reflected and asked ourselves, why did we bother so much? Towards this end, throughout our careers, we often discussed the topic between ourselves to uncover what it was that could truly explain our persistence (stubbornness?) in using business simulations in our courses for over 50 years. As two retired academics, we were planning out what we wanted to say on this issue in a 50th anniversary ABSEL paper. We met in late March of 2021. Because of the COVID 19 pandemic, we sat outside on Faria's patio eating lunch to talk face-to face, taking advantage of an unseasonably warm day in our Northern climate. It was during that encounter that we came to our ultimate conclusion as to the reason why we had used business simulation games for our entire academic careers. It wasn't stubbornness at all. It was because we liked them!

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