From Brynania to Business:
Designing an Evidence-Based Business Education Simulation
from an Exploration of a Blended Real-Time Model

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Dissertation Submitted in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Education

in the
Transformational Change Program
Faculty of Education

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SIMON FRASER UNIVERSITY
Fall 2016

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Abstract

This study provided an opportunity to look across disciplines and beyond regular roleplaying and standard digital-environment-based business games to explore a long-running and unique blended simulation in a different yet related field. The lessons learned from the “anywhere anytime” blended simulation design of the Peace Building Simulation (PBSim) used with undergraduates in Political Science at McGill University in Montreal, Canada provided guidance for the design of a similar simulation for use in undergraduate business management and leadership courses.

The results collected through surveys, focus groups, interviews and field observations conducted in 2015 during an exploration of the weeklong simulation suggest that students were highly engaged and productive with this blended format. Interestingly, the participants anticipated they would be both highly engaged and highly stressed during the experience, and those expectations were realized. A learning community was created during the week with the high level of instructor involvement and modelling positively influencing the outcomes. Some gender differences were also found in expectations and engagement.

Nine design elements were developed from the results of the study of the PBSim and a review of relevant research. The elements are proposed as useful for the development of a simulation intended to immerse students in a complex business environment.

Keywords: Simulations; Business Simulations; Educational Role Plays; Educational Games
Dedication

To Casey (where it all began) and Molly (who said don't give up) with love.
Acknowledgements

It truly does take a village. To Dr. Milton McClaren for his thoroughness, patience and timely cheerful check ins. To Dr. Rex Brynen for being the genius behind the Sim and for his willingness to let me participate. Finally to the polite and engaged students of POLI 450, Spring 2015 at McGill University for putting up with me for that memorable week.
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List of Acronyms

AACSBAACSB Association to Advance Collegiate Schools of Business
ABSEL Association of Business Simulations and Experiential Learning
AWOL absent without leave
ERP enterprise resource planning
MEET Management E-Learning Experience for Training
NGO non-governmental organization
NSSE National Survey of Student Engagement
OCHA Office for the Coordination of Humanitarian Affairs
OCNOrganization of Cyberian Nations
PBSimPBSSim Peacebuilding Simulation
TATT A teaching assistant
UdeMUdeM Université de Montréal
Chapter 1.

Introduction

We love games. When designed, facilitated, and debriefed well, they can be imaginative and immersive tools for engaging people who are learning a complicated concept or understanding a complex environment. (Brynen & Milante, 2013, p. 33)

I teach in the School of Business at Capilano University in North Vancouver, in British Columbia, Canada. As an experienced business instructor, with a focus on management and human resources - training and development, I see the need for systemic thinking in students, for an education that opens eyes and minds to the global business environment with all of its complexity. My institution has formally committed to the experiential approach as seen in the Academic Plan, which states “Woven through this plan is the message that Capilano University is dedicated to experiential learning…. The University has a commitment to offering experiential learning opportunities in all degree programs” (Capilano University, 2014).

The current first-year management course at Capilano University, Introduction to Management, is textbook-based. While instructors are free to interpret the material as they wish, and a third of the course is devoted to public speaking, it has the potential to be redesigned as a more immersive experience. From my daughter I found out about a long-running Peacebuilding Simulation (PBSim or Sim), developed by Dr. Rex Brynen and offered as the capstone exercise in a Political Science course at McGill University in Montreal. My daughter had been a student in the PBSim and described it as an immersive role play simulation played over a week, with both face-to-face and on-line elements, and with students engaged in the simulation over a 12-hour period each day,
primarily through emails. The PBSim sounded like it might offer interesting simulation design features that could possibly be adapted to other contexts, such as my business management course. A simulation of a complex business environment, with the students playing various roles, planning and responding to scenarios and crises throughout a compressed time-period, as in the PBSim, appeared to have the potential be an exciting experiential opportunity.

A business school curriculum often includes the use of a prepared simulation to teach course concepts. For example, the classic case study method as seen at the Harvard School of Business really often takes the form of a roleplaying simulation where students are asked to take on roles to solve problems and make decisions about difficult issues. A standard first-year undergraduate business course, such as the one I have taught for over 15 years, typically contains general modules on topics such as planning, leading, organizing and controlling. It could be possible and preferable to teach these concepts and skills experientially, especially given Capilano University’s (and many schools) stated agenda to encourage this form of learning.

While individual classes may be taught at Capilano University using short experiential exercises and assignments designed to allow students to interact with the business community (and these are usually well-received and valuable learning experiences) for the most part we don’t, as yet, engage students in fully immersive simulations in the manner of the PBSim. Part of my agenda for this study was also to consider some of the potential barriers to implementing simulations within a business school context such as the one in which I teach.

Most of my students carry superb information devices with them and do a great deal of learning on-line already. It seemed worthwhile to take advantage of the mobile communications that are natural parts of their lives, and use the power of an engaging and collaborative activity to create a learning experience that would immerse students in a version of the world in which they will be operating in once they graduate.

For this study, I contacted Dr. Rex Brynen at McGill University, the developer, designer, and faculty facilitator of the PBSim. He generously agreed to permit me to observe in his course during the 2015 term (Appendix A), and allowed me to survey students who were engaged in the simulation. During the week-long
PBSim, 100 political science undergraduates assume various roles as they try to negotiate peace in the war-torn fictional country of Brynania. Each day over a 12-hour period students take action through face-to-face meetings, emails and social media. Two focus groups conducted with the students provided more in depth information as did an interview with and assistance from Dr. Brynen, the designer of the PBSim, and his teaching assistants. I observed the PBSim over a week, sitting in on a number of student meetings and reading all of the general emails posted to the class listserv.

My goal in this research was to apply the findings from this study of the McGill Peacebuilding Simulation, and from a general review of the literature on simulations in order to develop some general design principles for potential application to a future business education simulation. The general literature research was driven by two questions.

1. What can be learned from the literature about design elements for business educational simulations?
2. What can be learned from the literature on student expectations, engagement and patterns of communication that will be helpful in the design of a business educational simulation?

The thesis is organized into eight chapters, including this chapter. Chapter 2 is a review of the literature related to Simulations and Games in Education and Training and also considers existing research and proposals on necessary elements in the design of educational simulations. Chapter 3 provides a detailed description of the McGill Peacebuilding Simulation, and also provides a description of BADM 101, Introduction to Management in the School of Business at Capilano University. Chapter 4 provides a description of the methods applied to the study of the PBSim and discusses the analysis of the data from the PBSim. Chapter 5 presents the results of the study of the PBSim including the results from the pre- and post-simulation student surveys and the student focus groups, as well as my field observations of the on-going PBSim experience and my interview with Dr. Brynen and his teaching assistants (TAs). Chapter 6 discusses the implications of the results of the study methods described in Chapter 5, and also suggests some changes that might be made to the
preparation of students for the PBSim. Chapter 7 presents a proposed set of design principles for the development of a business simulation. The design principles combine the results from the study of the McGill Peacebuilding Simulation and the literature review from Chapter 2. Chapter 8 outlines the study limitations, directions for further research, and suggests possible conclusions.
Chapter 2.

Literature Review

What work I have done I have done because it has been play. If it had been work I shouldn’t have done it.  
(Mark Twain)

If people never did silly things nothing intelligent would ever get done.  
(Ludwig Wittgenstein)

2.1. Overview: Introduction and Links to Research Questions

The review of literature presented in this chapter was framed for relevance to the first two questions of this study:

1. What can be learned from the literature about design elements for business educational simulations?
2. What can be learned from the literature on student expectations, engagement and patterns of communication and technology that will be helpful in business educational simulation design?

To begin a literature review on this topic involves setting out on a well-travelled path. The topics of play and games in education, experiential learning, and simulation design all have substantial to overwhelming bodies of practice and research attached to them. Lynn Voss (2014) in a systematic review of marketing simulation games and research states, “simulations are one of the most widely studied pedagogical tools” (p. 67). As this thesis looks at one particular (and under-researched) simulation design, it requires a deliberate narrowing of the path, attempting to illuminate the most relevant and helpful literature in a broad and evolving field.
In a famous Ted Talk in 2010 Jane McGonigal, an influential game designer and writer, made the argument that gaming can make a better world and improve the quality of human life. The impetus for this thesis comes from a desire to engage both students and myself in meaningful learning experiences using the technological tools available—to improve the quality of our educational lives.

In conducting the review, I discuss research that acknowledges weaknesses and gaps in knowledge and current understanding of the educational values of games, and role play simulations in particular. Areas in the current body of research where there may be gaps in methodology or where attention to relevant questions is minimal or lacking are identified. Ideally this review of the literature would be set in the context of other case studies of similarly designed simulations in the business field. At this point, however research on similar blended designed simulations in business is lacking.

Crossing disciplines to see what can be applied to one’s own field has been an invigorating and worthwhile experience. In this instance, investigating the McGill Peacebuilding Simulation (PBSim or Sim), a simulation in a political science course, has resulted in the realization that so many of our undergraduate educational objectives were similar. The critical thinking, thoughtful decision-making, consideration of multiple perspectives and thorough communication that were valued in the PBSim are also learning objectives appropriate to a business education context. The parallels between some of the activities in the PBSim and core undergraduate management curricula are highlighted in this review. Despite what might seem to be a wide gap between disciplines, educators travel parallel paths (with similar destinations) more often than may sometimes be acknowledged.

For this literature review, the available recent research on simulations and computer games in education was examined. The PBSim is fundamentally an enhanced role-playing game. The review therefore starts with role-playing games before moving briefly to the issue of definitions. Another critical issue, determining learning outcomes from simulations, is addressed before discussing general simulation design and blended business simulation design specifically. Peacebuilding simulations in general are referenced here as well.
As this thesis focuses on three specific areas: student expectations, communication technology and engagement, research in each of these areas is briefly examined. The literature review concludes with findings on other critical evidence-based simulation design elements that might be considered for future simulation development.

As mentioned previously, this study touches on many large bodies of research. For example, whole theses could be written on defining and describing variously “play”, “simulations” and “engagement.” For the purposes of brevity and focus I occasionally only briefly describe topics that could be discussed in greater depth.

2.1.1. The Research into Simulations and Games in Education and Training

There is a large body of general research on simulations and games in education and a number of current reviews of the literature.

Vos (2014) states:

simulation games are one of the most researched pedagogical tools, and studies on teaching and learning issues arise from many different disciplines and perspectives. The majority of articles seek to examine the learning benefits of games and the challenges associated with measuring the effectiveness of games as learning tools. (p. 76)

Cook et al. (2013), a large research team of academics from across North America and Europe, conducted a systematic review and meta-analysis evaluating the effectiveness of instructional design features of technology-enhanced simulations in the healthcare field. They looked at 289 comparative studies from a pool of over 10,000 articles to determine which design features were found empirically to be most effective. They found positive evidence for practices (stalwarts of adult learning) such as: having a range of difficulty, repetition, interactivity, feedback (including debriefing), multiple learning strategies, individualized learning and having a longer time for a simulation.

Connolly, Boyle, MacArthur, Hainey, and Boyle (2012) undertook a systematic review of literature that included empirical evidence on learning from computer games and serious games. They examined 7,392 papers on this general topic across a variety of curricula but found only 129 papers that offered empirical evidence concerning the
outcomes of games for learning. While the evidence that games led to more effective learning was not strong, the studies that did focus on knowledge acquisition pointed to the importance of having feedback, strategies for different difficulty levels and support for memory as keys for the success of a game-based learning approach.

Bellotti, Kapralos, Lee, Moreno-Ger, and Berta (2013) conducted another literature review of assessment in and of serious games and found conclusions similar to those of Connolly et al. (2012). The focus for Bellotti et al. (2013), however, was the issue of feedback and the ability of a student to monitor their progress in learning as a key attribute of a successful simulation. While students enjoy simulations, analysts (Connolly et al., 2012; Cook et al., 2013; Mayer et al., 2014; Salas, Wildman, & Piccolo, 2009) found mixed results as to their effectiveness for learning, and mention the difficulties of doing conclusive research. However, even the most critical of reviewers such as Connolly et al. (2012) admit, “players seem to like the game-based approach to learning and find it motivating and enjoyable” (p. 661).

Mayer et al. (2014) found that most of the thousands of studies they reviewed consisted of case studies and self-reports of learning with results that cannot be easily compared (or replicated). These authors do state that one of the special features of serious games is that they provide excellent environments for mixed method data gathering, or triangulation from crowd sourcing to panel discussions, surveys, and observations/video observations (p. 511). The research methods employed for this thesis are indeed mixed-method data gathering, including a survey, focus groups, observations, and interviews.

2.2. Role Play in Education

Role-plays have a long history in education and business education in particular and there is evidence of their continuing relevance. Role-playing is a standard active learning pedagogy that educators may use in some fashion in their courses. It is recommended in faculty development handbooks such as Student Engagement Techniques: A Handbook for College Faculty (Barkley, 2010) as a “creative participatory activity that provides the structure for students to experience the emotional and intellectual responses of an assumed identity or imagined circumstances” (p. 232).
In the United States, a series of educational programs focused on historical events called “Reacting to the Past” has been developed to include elaborate role-playing simulations. In the program students take on roles from Socrates to suffragettes and act out pivotal world events over a term. The number of these immersive (low to no tech) simulations is expanding annually and the approach is now being used in universities across Canada and the United States. A community of Reacting Scholars, those who use and or develop these games, is centred around an annual conference at Barnard College in the United States. The conference is also supported by a website (http://reacting.barnard.edu) where educators from across the United States leave enthusiastic quotes on students’ engagement using the “Reacting to the Past” game.

Mark Carnes (2014), a Harvard University professor and author of Minds on Fire, How Role Immersion Games Transform College, is one of the prominent supporters of the use of reacting games. In Minds on Fire he discusses role-playing in universities in some depth, advocating for more subversive academic play in institutions. Carnes also states that while higher education is often opposed to role-playing:

some forms of role-playing have sneaked into the ivory tower, usually slipping into its upper chambers. The Harvard Business School’s predominant pedagogy, the case method, consists almost entirely of simulations: “You are CEO of U.S. Steel in 1959 and a strike looms.” (p. 8)

He writes further:

Our predominant pedagogical system—rational, hierarchical, individualistic, and well-ordered—often ignores aspects of the self relating to emotion, mischievous subversion, social engagement, and creative disorder. Role-immersion games, when configured as an intellectualized pedagogical system, provide access to these often untapped wellsprings of motivation and imagination. (p. 13)

Carnes (2014) argues that these very popular role play immersion games offer students opportunities for participation, face-to-face leadership through teamwork, learning by doing and failing, critical thinking and global citizenship. He criticizes some of the current standard on-line course designs and says that on-line education designers have sought access to the Reacting community of scholars, presumably for role play simulation design ideas. While there are critics of role plays in education there is a long
history of this pedagogical practice and strong support from some in the mainstream and prominent academic community.

2.3. Definitions: Simulations and Games

The definitions of terms to be used in this thesis seemed initially to be somewhat of a quagmire, with researchers and experts each having their own approach to the task.

The term “simulation” is often now used only to refer to a computer-based simulation. The Association of Business Simulations and Experiential Learning (ABSEL), a repository of North American information on simulations established in 1974, includes the term “Experiential Learning” in its title, suggesting that face-to-face simulations are included in the repository. However, a look at the Association’s journal *Simulation and Gaming* reveals an almost exclusive focus on digital/computer games. The Association’s website (http://www.absel.com) uses the general term “simulation/gaming,” and does not define or distinguish between a simulation and a game.

Leigh, Courtney, and Nygaard (2014) in “The Coming of Age of Simulations, Games and Role Play in Higher Education,” the first chapter of a book they edited on the topic, write that: “anyone familiar with the field explored here will know of the plethora of definitions and descriptions of the three terms we are addressing [in the book]” (p. 5). Leigh et al. write that generally a simulation will refer to creating replicas of the real world for analysis, while role plays are situations in which learners take on specific characters and that games generally will have a competitive element. They do leave it to the authors of each of the 16 papers included the text however to add nuance and refer to the overlaps that occur when examining the research in this field.

As the end goal of this thesis was to design an evidence-based real-time blended business education simulation the definitions used in this study remain as broad as possible in order to incorporate successful elements from a wide body of research that includes play, role play, computer simulations and games, real-time simulations and blended models. While I am interested in what has been done specifically in comparable business simulations (if any), this thesis goes beyond business examples to look at
cross-disciplinary models such as the McGill Peacebuilding Simulation that was under study for the research, and others.

I propose to follow Mayer et al. (2014) in their research and scientific evaluation of simulations and games by not making “semantic or taxonomic distinctions” (p. 502) between terms such as serious games and simulation games or newer terms discussed later such as transreality or persuasive games, games that have both digital and real-life elements. This thesis will use the term “simulation” or “game” as much as possible, with the understanding that these two terms may have different connotations in different contexts. While the PBSim has some game elements, the focus in this thesis is on simulations designed for use in educational settings, whether or not they include game components (both are examined).

In their comprehensive literature review in search of a methodology for serious games (SGs) research Mayer et al. (2014), classify four types of research that have addressed simulations and serious games.

1. **Design-oriented research** (artifact): “making it (better)”: (a) The validation of specific and generic game-based artifacts and events; and (b) The development and validation of design theories, methods and tools.

2. **Intervention-oriented research** (learning, change, policymaking, management): “making it work”: (a) The learning effectiveness/impact of game-based interventions; and (b) The transfer of game-based interventions to the real world.

3. **Domain-oriented research** (healthcare, military, energy, etc.): “making it matter”: (a) The effectiveness of the use of SGs to understand the complexity, dynamics in specific domains.

4. **Disciplinary research** (methodology, ethics, explanatory and interpretative theories): “making it understandable” (a) the sociological, economic, political, cultural, etc. frames on SGs.

   (p. 547)

The study for this thesis falls primarily within the first category of design-oriented research, the “making it better” category. While the other categories are obviously also relevant and important, there are practical limits on what can be accomplished in a single study.
2.3.1. Simulations: Categorizing

Below are some of the ways in which simulations are categorized.

1. **Level of environmental realism.**
   Salas, Wildman, and Piccolo (2009) in a frequently quoted guide to using simulations in management education, describe levels of simulations, from simple classroom role-playing through to physical recreation of spaces, as in a flight simulator for pilots or operating room for surgeons.

2. **Topic and level of difficulty.**
   Vos (2014) categorizes the for-profit marketing simulation games she found in her comprehensive literature review into introductory, corporate strategy or specialist (such as finance or marketing) types.

3. **Technological design.**
   Geurts and Duke (2014), founders and former Presidents of ISAGA (the International Simulation and Gaming Association), in their foreword to *Simulations, Games and Role Play in University Education*, list some of the formats and dimensions of gaming for learning, including continua such as:

   - “Single Player” vs. “Multiple Players”
   - “On Site” vs. “Online”
   - “Closed Community” vs. “Open Community”
   - “Role Play” vs. “Simulation”
   - “Conceptual” vs. “Physical action”
   - “Box” vs. “Computer”
   - “Metaphor” vs. “(Virtual) Reality”
   - “Tailor made” vs. “Off the shelf” (p. xiv)

Leigh, Courtney, and Nygaard (2014) propose that each combination exists and has pros and cons, and offer no specific recommendations to the game designer. These authors don’t add a time-to-play continuum which could be a useful category here as well. They do discuss criteria they’ve developed called the “5 C’s” for analyzing games: complexity, communication (vigilant and systematic), creativity, conflict resolution, and commitment to action, advocating that a comprehensive game for learning will show all of these five criteria. In discussing communication in games, they define the concept of “multilogue”: the simultaneous dialogue of multiple actors in pursuit of a greater understanding of the topic under study. The authors say “the multilogue creates a language specific to *this* game and *these* participants, creates understanding and trust, where students learn from students” (p. xvi). Certainly in the PBSim a multilogue is
created and all five criteria are present in the game (as discussed at length later in this thesis).

2.4. Business Games: Background

Faria, Hutchinson, Wellington, and Gold (2009) offer a comprehensive history of business game development from the 1930s onward. They note that an early pioneer, Marie Birshstein, was inspired by war games (as were others in early game development) to develop a simulation game for typewriter production in Leningrad in 1932. She and her team went on to develop 40 other production simulations. Interestingly the first business games were developed from war games, as was the Peacebuilding Simulation examined in this thesis.

Cherry and Kahn (2014) discuss the “transformative journey” of immersive learning in business education. They quote other studies which estimate that between 70% and 90% of business schools are likely to have some kind of simulation in their curriculum. While many business professors use simulations, usually those that are commercially available or that are produced by textbook publishers as supplements, the authors note that in an initial study of a decade of use of simulations in business schools in the 1990s referenced in Faria et al. (2009) found only half of the academics surveyed had ever used a simulation. Cherry and Kahn (2014) state that while this early study was done in the 1990s there is little evidence to show these kinds of numbers have changed. Even when there is evidence that immersive experiential learning is engaging and supported by the institution, many academics hold back; the authors postulate that change is difficult for all in organizations, including learning organizations, and the risks and work that go into revising one’s standard curriculum may be enough to keep many away from making the changes. Cherry and Kahn suggest that faculty try out simulations themselves and use smaller scale simulations first.

Vos (2014) echoes this recommendation, reporting that simulation game users (instructors) are often ‘lone enthusiasts’ in their departments and the lack of wider adoption of games may be a result of both the perceived risks and the difficulties of gaining approval for the additional cost. Vos states “More research is warranted into the barriers to wider simulation use and to the perceived risks of adoption” (p. 83).
This finding is interesting and points to the challenges of independently designing a new simulation with the expectation that it would be widely used within a department.

At Capilano University, with a typical small school business curriculum, an educational simulation from Interpretive Simulations, a large North American company, is used in both second- and fourth-year business-strategy courses. Over the course of a term students in teams make decisions on operating a running shoe company or new car company, analyze financial information, look for new markets and evaluate the competition. The Interpretive Simulations website (http://interpretive.com) states that a version of the simulation has been used by thousands of students since the 1990s. “Biz Café” is another popular simulation from Interpretive Simulations, pitched at entry-level business students running a café.

CeSim, another large corporate provider, is an international company that offers a variety of business simulations including sales and operations management of an international pharmaceutical company (http://cesim.com).

Henriksen and Lofvall (2014) reviewed the literature on the development of business games and then surveyed 25 Nordic and North American business games at business schools to see how these games were integrated into curricula. They found that most games are assimilated into existing course descriptions and assessment practices rather than being used, as yet, to transform educational practices more broadly. The authors advocate for more use of cross-disciplinary action-oriented learning where games are a tool with the potential to significantly change the future of higher education.

North-Samardzic (2015) states that the vast majority of current business games deal primarily with strategy and strategic decision-making and share common features whereby participants are in charge of a company producing consumer goods in a competitive industry environment. They must make decisions about finance, production, marketing and sometimes staffing in order to ensure their company receives the most profit and/or market share. There are also a significant number of games about operations management where students oversee the manufacturing of goods and supply chain management. Success in these games is measured by typical business metrics.
such as profitability, share price, market share and as well as operational metrics such as machine down-time.

About business games specifically Vos (2014) states:

Following their introduction in the mid 1950s as a pedagogic tool, simulation games have continued to be popular in both undergraduate and postgraduate business programmes. Games in management are the most commonly used, followed by marketing simulations and indeed the majority of games available for pedagogical purposes are in the areas of strategic management, business policy, marketing, and international business. (p. 67)

North-Samardzic (2015) notes that there is a lack of empirically tested digital simulations for students and educators in people management subjects such as organizational behavior and human resource management.

2.4.1. Benefits of Games in Business Education

North-Samardzic (2015), in a comprehensive review of the literature and of 25 currently offered educational management games and simulations, notes that researchers have found, “The act of playing a game or simulation allows the student to take an active and responsible role in their learning with the simulated environment being a strong example of experiential, generative and situated learning” (p. 8).

Faria and his colleagues (2009), well-respected researchers into simulations, are very positive about simulations and their potential for education. They state:

As vehicles for instruction, business simulations remain as powerful today as they were when first introduced. They allow for dynamic business decision-making…the experience gained from the repeated iterations of decision periods provides direct feedback to players, from which they are able to learn….

Although changes in technology are providing more opportunities to improve the simulation gaming learning experience and a number of pedagogical innovations are emerging to drive the way in which simulation games are used, the fundamental reasons as to why educators use business simulation games have not changed much during the past 40 years. How instructors employ business simulation games…offers tremendous promise for future research and experimentation. (p. 485)
Salas et al. (2009) discuss in detail the advantages of using simulations for management education, including: the ability to simplify complexity, speed learning, providing a risk free environment and practicing skills that might not be used on a daily basis but are essential such as negotiation skills or the ability to communicate professionally in a tactful manner. Noel and Erskine (2013), in research on simulations for entrepreneurial decision-making, state that “without much time for deliberation, developing skills to become a manager who is comfortable making decisions in an uncertain environment and with limited time should lead to greater success” (p. 2). In their research on simulations for enterprise education in university (business programs) Tunstall and Lynch (2010) point to the value of students making real-time, quick decisions, and the value of using a blend of face-to-face interactions and technology in simulations.

Another study conducted over 5 years on operations management training at more than 160 universities worldwide found that students responded positively to using an "authentic" real time enterprise software, with real time pressures in a simulation (Léger, Cronan, Charland, & Pellerin, 2012). Learners were placed in a situation where they must make decisions and manage the operations of their enterprises using an actual ERP (enterprise resource planning) system, as used in large organizations. All decisions made by the participants were entered into the ERP system. Survey respondents confirmed that significant improvements in student evaluations, learner motivation, attendance, and engagement were found, as well as increased learner competence with the technology, when conditions were made as realistic as possible, with realistic time pressures.

Better performance on business-related simulations comes from students' learning how to interpret and make more effective use of information on markets, competitors, financial data, and customers; understanding and using tutor feedback; bringing in and integrating theories and concepts from prior studies; thinking critically about past decisions; progressively using more elaborate thinking processes in order to integrate the range of decision areas more effectively; working better as a team; and managing the time needed for the simulation more effectively (Vos, 2014).
To conclude, business educational simulations, usually provided by large companies, are now used extensively in universities with benefits such as practicing skills such as negotiation and learning to make decisions under pressure. These benefits are usually just reported anecdotally by instructors and through student surveys at the end of the experience.

2.5. Simulations and Learning Outcomes

The systematic reviews draw few conclusions about whether simulations conclusively lead to better learning outcomes. While the summary literature is thin on unassailable quantifiable evidence that simulations offer more than other teaching methods in terms of learning outcomes, there are many positive individual studies and much enthusiasm for continuing to learn more about how to effectively design and deliver simulations. Vos (2014) states:

Those who use simulation games speak with excitement about the visible energy and enthusiasm they see in the classroom when decisions are being made, and of the amount of time students devote to the simulation both inside and outside the classroom. They more often than not receive very positive feedback from students who have participated in the game and while these instructor observations and student opinions may not provide reliable evidence that specific outcomes have been learned, they do demonstrate time and again that engagement with learning is taking place. As Gibbs (2010) noted when discussing the large scale studies done in the US on educational gain as a measure of quality, the crucial variable is ‘student engagement’ and it has proved possible to identify the...variables involved in engaging students, such as the level of academic challenge, the extent of active and collaborative learning...the extent and quality of student–faculty interaction.... (p. 33)

So if a crucial variable for educational gain generally is student engagement, and simulations demonstrate consistently that they engage students, the challenge becomes isolating and replicating those variables that do lead to engagement that are either already embedded in simulations or that could be.

Warmelink, Bekebrede, Hartevel, Mayer, and Meijer (2014), writing in Simulations, Games and Role Play in University Education, a compendium of Northern European research, discuss their extensive experience running simulations at their university in Delft. One of the lessons they want to share from their experience is the
presence of emergent versus planned learning in simulations. They state that it is sometimes difficult to plan fully what students will learn; they may practice social skills such as negotiation, for example, when project management is supposed to be the main focus. The authors suggest valuing both informal and formal or simply unexpected, unintended learning outcomes, which requires an assessment approach that could look at all three areas. Such an approach has yet to be developed.

Gibbs and Simpson (2004), widely cited scholars, discuss three important variables for achieving positive student learning outcomes: level of academic challenge, the extent of active and collaborative learning, and the extent and quality of student–faculty interaction. The PBSim has a high level of challenge, extensive active and collaborative learning and some student–faculty interaction. This third component of engagement (student–faculty interaction) is examined in further detail in this thesis research.

2.6. Crossing Disciplines: Peacebuilding/Wargames Simulations

Business games have their antecedents in war games. The Peacebuilding Simulation examined in this case study also is rooted in war games.

Rex Brynen and Gary Milante (2013) discuss the value of simulations in peacebuilding scenarios. They state “simulations and games can offer valuable insight into the management of conflict and the achievement of peace” (p. 27). They refer to Philip Sabin who has argued that the educational value of war games can be substantial.

The most important function of war games is to convey a vicarious understanding of some of the strategic and tactical dynamics associated with real military operations. Besides learning about...the specific battle or campaign being simulated, players soon acquire an intuitive feel for more generic interactive dynamics associated with warfare as a whole. . . . As variation in combat outcomes during the game creates unexpected threats and opportunities, players will be faced with classic real world dilemmas ... Actually grappling with such dilemmas at first hand rather than simply reading or hearing about them has enormous educational potential. (as cited in Brynen & Milante, 2013, p. 31)

Brynen and Milante respond.
Much the same arguments can be made about the use of simulation and gaming techniques to enhance our understanding, not of warfare, but rather of the process whereby peace might be achieved and sustained. Through serious games, participants can gain a better sense of the dynamic relationships at work in complex environments, explore good fits and practical solutions, and understand how mistakes occur (often, by making them themselves). These are real skills needed in the real world...when games engage multiple participants, the games reproduce some of the political, coordination, communication, and coalition-building challenges that often accompany peace and stabilization operations, especially if a simulation is designed to reproduce some of the organizational silos and bureaucratic politics that exist in the real world. (p. 32)

The PAXsims blog, started by Dr. Brynen, is a repository of Peacebuilding Simulation and game research (Brynen, n.d.).

The parallels between the activities undertaken in the McGill Peacebuilding Simulation (negotiation, decision-making, strategy development, competitive intelligence, extensive persuasive communication) and the basic elements to be learned about complex business environments (e.g., the four management functions around which most introductory management texts are organized) such as the text used for BADM 101, the course under redesign in this study) are many. It is not surprising that the first simulations in business had their roots in war games simulations. Table 2.1 compares some of the elements in the two courses. The topics in a first-year business course (the four functions of management—planning, leading, organizing, controlling) are practiced in the PBSim.
Table 2.1.  
Comparing the PBSim Activities with the “Four Functions of Management” Taught in Standard First-Year Management Textbooks

<table>
<thead>
<tr>
<th>Four Functions of Management</th>
<th>PBSim Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Planning” involves deciding where to take a company and selecting steps to get there. It requires managers to be aware of challenges facing their businesses, and then to forecast future business and economic conditions. They then formulate objectives to reach by certain deadlines and decide on steps to reach them. They re-evaluate their plans as conditions change and make adjustments as necessary. Planning helps allocate resources and reduce waste as well.” (Norman, n.d., “Planning,” para. 1)</td>
<td>Students must plan for fundraising campaigns (NGOs): set targets, monitor donations. Political, rebel, military actors must decide what actions they will take, who to communicate with, all before the simulation begins.</td>
</tr>
<tr>
<td>“Leading” requires managers to motivate employees to achieve business objectives and goals. It requires the use of authority to achieve those ends as well as the ability to communicate effectively.” (Norman, n.d., “Leading,” para. 1)</td>
<td>Many roles in the simulation are leadership roles: country heads, U representatives, NGO heads. Anyone can take the initiative and lead.</td>
</tr>
<tr>
<td>“Organizing” bringing together physical, human and financial resources to achieve objectives. Identify activities to be accomplished, classify activities, assign activities to groups or individuals, create responsibility and delegate authority.” (Norman, n.d., “Organizing,” para. 1)</td>
<td>Group roles need to be addressed: who will do what tasks, communication between groups, budget allocation, supply chain management, operations management</td>
</tr>
<tr>
<td>“Controlling” involves measuring achievement against established objectives and goals. It also requires managers to be able to identify sources of deviation from successful accomplishment and to provide a corrective course of action.” (Norman, n.d., “Controlling,” para. 1)</td>
<td>Measurement: Budgets, personnel, supplies, refugee camps: displaced or perished refugee counts, money raised by NGOs, whether a peace treaty was signed.</td>
</tr>
</tbody>
</table>

Other standard curriculum elements of a typical undergraduate management class found also in the PBSim are discussed further in Chapter 3.

2.7. Design Elements of Simulations: General and Evidence-Based

While the literature is vast and emerging, the actual practical research on design elements in blended simulations and games that might guide future development is almost surprisingly thin. Salas et al. noted this in 2009 and Warmelink et al. repeat this claim in 2014. Much of the research describes the current state of simulation technology in management education and what types of simulations are used, but does not provide
guidance as to how to most effectively design simulation-based training to facilitate student engagement and learning.

Warmelink et al. (2014) states that in current design literature, little attention is devoted to the practical issues of developing and applying (implementing) games in higher education. Over a decade, Warmelink and his colleagues attempted to rectify this by analyzing 17 games used in their technology-focused university along a variety of dimensions including learning objectives, development team, costs, and technology. They concluded with six lessons for business game developers working in educational institutions.

1. Games can change the organization of education [and, therefore, educational organizations should be prepared for some internal culture change].
2. Value both planned and emerging learning outcomes from games.
3. Start small.
4. Find a champion to develop/complete a game.
5. Make technology serve the learning goals.

Sanchez (2013) developed a framework (Management E-Learning Experience for Training; MEET) for serious game design through a literature review which was used to introduce a research project designing and testing a business game for student groups in eight European countries. Sanchez fully described her framework in the book Business Game-based Learning in Management Education. The framework, taking the form of two checklists includes:

1. Key criteria for serious game design
   - Motivation: opportunities for competence, autonomy, relatedness: clear goals, enough choice, enough competition, rewards, collaboration
   - Content: relevant or not
   - Enough freedom, rules and feedback
   - Room for mistakes, emotional elements: feeling of security, humour, friendly, attractive game environment, fantasy elements
   - Game integration: Beginning or end of game clear, debriefing.
2. Acceptability, usability, and utility
o Acceptability: content is relevant, matches student expectations, fits student characteristics, fits curriculum, time is appropriate for school curriculum, cost is reasonable.

o Usability: easy to set up and use, used on existing technology, the game provides guidance and support, provides feedback.

o Utility: by playing, the students learn and develop competencies that suit the pedagogical objectives of the instructor.

These two checklists taken together effectively summarize the literature on design of business games and provide some guidance both for assessing the PBSim and developing a future general business simulation for undergraduates. In the current field of business simulations, the topics covered usually focus on finance and marketing. North-Samardzic (2015) found no empirically tested human resources/organizational behavior simulations, which is a vast area within business education generally and also in my own teaching assignments. It will therefore be challenging to design an evidence-based undergraduate business simulation with human resources/organizational behaviour content when, as yet there are no empirical tests of this specific topic area in business.

Of course, there are proposals describing classic elements of good simulation and game design, as Connolly et al. (2012) and Cook et al. (2013) found in their systemic literature reviews and discussed at the beginning of this chapter. They found features such as feedback, strategies for varying difficulty level, and the availability of support for memory were key factors, that could be argued to be critical for any learning experience.

2.8. Three Focus Areas: Student Engagement, Managing Expectations and Use of Technology

The following section briefly describes the literature behind the initial three focus areas of this thesis research: student engagement in simulations, managing student expectations of the simulation, and the use of technology and communication.
2.8.1. Student Engagement

From initially talking to students at McGill University who had either taken the course that incorporated the PBSim or who had just heard about it, I was struck by the way they talked about the experience and how engaged the students appeared to be. The literature on the general concept of student engagement is substantial (Dunleavy & Milton, 2009). Kinzie, Gonyea, Shoup, and Kuh (2008) suggest that the concept can be traced back to the 1930s. School mission statements and surveys such as the annual National Survey of Student Engagement (NSSE) in the United States and Canada attempt to define and measure the concept. The NSSE defines student engagement as: the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in their education. In their systematic review on engagement in digital gaming Boyle, Connolly, Hainey, and Boyle (2012) observed however that academics still do not clearly understand the nature of engagement.

In the research for this thesis, the survey items used to ask the students in the PBSim about their level of engagement came from a variety of sources. Burch, Heller, and Freed (2014) developed a student engagement survey incorporating some of the items from the NSSE validated for deep learning. These authors were attempting to produce a student engagement survey specifically for business students that would meet AACSB (Association to Advance Collegiate Schools of Business) guidelines, an accrediting body for business schools across North America. As such this seemed like a survey most relevant for the needs of this thesis research. Burch et al. critique the NSSE as not useful in assessing engagement in individual classes (the survey is more useful for whole school comparisons), and they also feel that the NSSE survey can't meet the AACSB requirements for “innovation” for business students in that the NSSE leaves off Bloom’s “creating” level of the hierarchy.

The following “deep learning” statements from the Burch et al. (2014) student engagement survey (that they in turn took from the NSSE survey) were used in this thesis research:

- I connect learning in this class/course to societal problems or issues. (p. 209)
• I include diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussion or assignments for this class/course. (p.209)

• I examine the strengths and weaknesses of my own views on a topic or issue in this class/course. (p. 209)

• I try to better understand someone else’s views by imagining how an issue looks from his or her perspective in this class/course. (p. 209)

There is now a subset of literature focusing on the type of engagement that participants experience specifically in simulations (Bouvier, Lavoué, & Sehaba, 2014; Burch et al., 2014; Ruggiero & Watson, 2014). A November 2014 issue of the journal, *Simulation and Gaming*, is devoted to the topic. The 10 articles included in the collection explore engagement from a variety of different perspectives. I refer to a number of these articles in this thesis research, focusing on Bouvier et al.’s (2014) article on the four dimensions of engagement as forming the theoretical basis of this thesis. For the purposes of this thesis when considering student engagement the focus is kept on the current research in this particular subset (engagement specifically in simulations) of the field.

Dickey (2005) compared engagement strategies in online gaming and online education with the goal of seeing what might be appropriated from one world to serve the other. He proposed that engaged learning consists of “focused goals, challenging tasks, clear and compelling standards, protection from adverse consequences for initial failures, affirmation of performance, affiliation with others, novelty and variety, and choice” (p. 70). To achieve these outcomes, he suggests that a simulation must have a strong narrative with multiple arcs, interesting characters with whom the student can
interact, a realistic setting with supportive resources and challenging activities, hooks\textsuperscript{1} to affirm performance, the ability to inhabit a role and the capacity to influence outcomes.

**Theoretical Framework for Student Engagement**

Bouvier et al. (2014) provide the theoretical framework for this thesis. This framework was chosen because it is current and emerging, focused specifically on engagement in games. The researchers are game design researchers and computer experts in Europe with a Best Paper award at the 2013 International Conference on Computer Supported Education. They provide a thorough overview of the research on defining engagement in games. They claim that engagement occurs if players' expectations (perceptual, intellectual, interactional) are fulfilled. They propose a definition based on Self Determination Theory that includes four types of engagement in simulations: environment, social, self and action. The four types of engagement from Bouvier et al.’s (2014) work are described in their paper as follows:

1. Environment-directed, in relation to the need for autonomy

   A participant with this type of engagement will be interested in the specific characteristics of the game environment, how it works, perhaps how to “game the game.”

\textsuperscript{1} “Various types of interactivity are achieved through the affordances of gameplay hooks. According to Howland (2002), such hooks are ‘anything that requires the player to make a decision that relates to the game, and thus keeps them playing’ (p. 78). Hooks are the types of choices a player makes in the course of the game. Howland outlined a variety of hooks used in game design, including action hooks, resource hooks, tactical and strategic hooks, and time hooks. These hooks are manifested in different ways depending on the game genre. For example, action hooks (choices) in a role-playing game might include quests and missions, whereas in an action game they might include decisions about exploration, navigation, and who and what to avoid and/or follow. In multiplayer online games, action hooks might include communication with other players and alliances within communities. Resource hooks in various game genres may include arsenals, ammunition, health, wealth, and the mental state of the character. Resource hooks indirectly affect actions because reservoirs of resources may alter or impede actions taken by the character. Tactical hooks are decisions characters make throughout the game about how resources might be allocated and strategies to employ during key aspects of the game. For example, in action games this might include map memorization and way-finding strategies, and in role-playing games it might include character types and skill affordances. Time hooks involve counters and timers that impose temporal limits on the actions of a character such as actions that must be completed within a prescribed time frame (Howland). The genre of the game and the type of actions determine the types of hooks or choices available and employed, but typically a player encounters a multitude of hooks throughout a game” (Dickey, 2005, pp. 75-76).
Players’ engagement can be directed toward the environment or the world depicted in the game. This engagement encompasses two main behaviors: contemplation and curiosity. Contemplatives like to stroll in the game area, curious to seek to know the physical and geographical boundaries of the game world. They want not only to understand the mechanics, but also to discover the bugs, extra-content, or carry out some exploit... They may also be interested in configuring the features of the game. The goal of players who have environment-directed engaged-behaviors is not to win, but to increase their knowledge of the game.

2. Social-directed, in relation to the need for relatedness

These players care about connections with team members.

Social engagement refers to the social connections within the game. In this case, the game is an opportunity for the players to create, expand, or animate their social relations toward other players. Their purpose is to develop and maintain their social network. This type of player tends to use the communication channels provided to promote the game, and increase the number of participants and enjoy the teamwork.

3. Self-directed, in relation to the need for autonomy

Self-engagement concerns the connection between players and their character through identification and/or ownership aspects. They care about the roleplay. Self-directed engagement behavior will refer to players who might dress up in costume in some fashion and thoroughly “inhabit” the acting aspect of their roles.

4. Action-directed, in relation to the needs for competence and autonomy

Players exhibiting this type of engaged behavior will want to achieve the goals of the game.

Players’ engagement is directed toward the actions to perform in the situation depicted by the game. The core of the game is the main interest for this type of player. For instance, they tend to try to pass the levels quickly, win experience points, and complete challenges. They may also define their own challenges.

(p. 10)

Bouvier et al. propose that this model is applicable to all types of games and can be useful in delimiting different aspects of engagement in gaming. For example, they state:

In a 2013 study our approach enables us to distinguish between engaged-players and non-engaged-players and to qualify their type of engaged-behaviors (unique or mixed regarding the four types of engaged-behaviors). For example, we were able to differentiate and
identify two types of social engagement (one directed toward the players’ friends, the other directed toward unknown players). (p. 12)

The survey questions used in this thesis include items related to each of these four types of engagement, to see if they were present. Survey questions relating to Kahn’s (1990) definition of engagement, suggesting that full performance must involve the concepts of physical, cognitive, and emotional engagement are also incorporated.

**Assumption of Student Engagement**

While it would be natural to assume that student engagement in simulations will occur easily, this is not always the case. Students may not find a simulation interesting or it may be too challenging. For example, Schnurr, Santo, Green, and Taylor (2015) found an unexpected result when using a negotiating simulation in an Environmental Science class to teach about the Multilateral Environmental Agreements. Participating in the simulation actually caused a significant decrease in overall student interest in course topics and self-assessment of skills. The authors postulate that once aware of the realities of complex international negotiations students have less interest in being involved.

Tunstall and Lynch (2010) designed a simulation case study game for undergraduate enterprise education. The study had mixed results in finding that: “While many students found it an interesting experience, many of them felt the application [was] less appealing than a computer game, telling us that we need to make the events less repetitive.” (p. 633) Therefore it can’t be taken as a given that a simulation will inevitably be engaging just because it is a simulation. Careful attention needs to be paid to many aspects of design.

**2.8.2. Managing Student Expectations**

The PBSim has a good reputation and current year students will hear about past years’ experiences. I suggested that setting up positive expectations would be an important criterion for successful simulation design.

Salas et al. (2009) makes this point regarding the context of simulations.
The simulation is not independent of the system in which it is embedded. In other words, what happens before, during, and after the training intervention are all equally critical in making simulation-based training for management education successful. Before training occurs, the management educator must ensure that the students are prepared for training, are enthusiastic toward the training, and that the organizational culture is supportive of the training. Several studies have shown that business simulations are more successful when the instructor is heavily involved and the students are committed. (p. 571)

Henriksen and Lainema (2014) following Kolb’s (1984) four stage model of experiential learning studied three business games and how they each could be integrated into a business curriculum. They paid particular importance to “staging” or “establishing emotions” as incentives for students, in one example as an incentive to enter into a change management simulation in an MBA program. The students were told how important mastery of change management would be to their future careers—that is, what an important skill it is. They also, in this instance, linked performance of these skills in the simulation to grades; they saw this as further incentive to participate. The researchers stressed the importance of this preparation. To conclude, it seemed worthwhile to look at the expectations students had before entering into the PBSim.

2.8.3. Technology and Communication

Does more technology equal more learning? This question is examined in some detail in the literature.

Warmelink et al. (2014) recommend making sure technology serves the learning goals. (In other words, technology should not drive the educational purposes). Interestingly they studied a variety of learning technologies and found some technologies didn’t suit specific educational goals. For example they found that the use of virtual worlds was neither essential or beneficial for their purposes when designing games as their instructional goals didn’t require that type of fully immersive experience. They also recommended “never developing for eternity” (p. 187) in that game technology ages too rapidly.

Faria et al. (2009) state: “Although the transition to mainframe games allowed for the development of more complex games, the more important issue is whether
technological improvements resulted in business games that are better teaching and learning tools” (p. 468). He used seven key dimensions to evaluate the technological advances made by business games from the 1990s to 2009: realism, accessibility, compatibility, flexibility and scale, simplicity of use, decision support systems, and communication. He argues that games with these dimensions will be more effective. This thesis research focuses on a blended simulation where students use “ordinary” technology (emails and social media through their cell phones and computers) to communicate.

The Digital Physical Blur

Accenture™ (n.d.), a leading international management consulting firm, named the “digital-physical blur” as the top technology trend they thought their customers should be aware of in 2014. This trend has implications for both business and education. North American students today have grown up with technology in their pockets and they are accustomed to using technology for both play and work. The gaming world is showing some movement to the physical world with new terms such as transreality, persuasive games or ubiquitous gaming meaning that players can move into real space with their games, using GPS, cameras and other technologies on their phones to make the realism of the computer screen reflect actual reality.

The PBSim uses regular technology, which today includes mobile technology, and not custom designed (and expensive) software. Students are immersed in the PBSim anytime they are near their phones and computers, which is often all the time. In this way the PBSim mimics (in a low tech fashion) some of the leading gaming innovations. One of the interesting aspects of the PBSim is this “digital physical blur” and the use of regular mobile technology over the week-long simulation. The research for this thesis explored this feature. No other research on this particular simulation design blending regular mobile technologies with role-playing in a physical scenario was found in the course of this review.
2.9. **Other Evidence-Based Design Elements**

The current literature offers some evidence concerning other important simulation or game design elements not previously discussed. While by no means a comprehensive list, some of these aspects were isolated during the literature review process and are discussed below. These design elements and the others are the basis of my research on the PBSim and informed the development of many of the survey questions.

2.9.1. **Real World**

Research on simulation design inevitably stresses the importance of anchoring content to reality. This is one of the key elements of Baldissi, Bettiol, Magrin, and Nonino’s (2013) overview of what is useful to the effectiveness of serious games.

2.9.2. **Fantasy**

While we often want a game to be anchored in reality, paradoxically fantasy is also appreciated and can be used to engage students. Asgari and Kaufman (2010) discuss the importance of building stories into games. They found that fantasy did help to motivate students in game playing scenarios.

2.9.3. **Play, Fun, and Humour**

In describing her experiential learning course where she has students redo classic organizational behaviour experiments, McLeod (2013) states conclusions that probably all teachers are aware of at some level.

Finally, students have taught me that it is okay to have fun in the classroom. In fact it is more than okay, as suggested by writings on the benefits of positive emotions in higher education (e.g., Clayton, Beard, Humerstone, & Wolstenholme, 2009; Moore & Nyiel, 2007). The students have affirmed for me that the struggle and tensions necessary for learning do not preclude experiencing joy. (p. 377)

McLeod (2013) notes that numerous studies on humour in the classroom acknowledge the important role it plays in the learning process, stating that humour has
been reported to increase motivation, enhance the retention of new information, advance problem-solving skills, encourage creativity and critical thinking, facilitate a positive learning environment, and decrease exam anxiety.

From my informal experience, typical commercial business simulation games are lacking somewhat in humour and fantasy elements, as well as in play and fun.

2.9.4. Independent Action and Control

A critical finding of this literature review is the importance of user control for learning. Gegenfurtner, Quesada-Pallarès, and Knogler (2014), in a meta-analysis of 15 studies of over 25 years of research and several thousand learners involved in digital game-based learning, found that user control in the game was critical for self-efficacy and the transfer of training. They found that strong positive effects were user-controlled increase of difficulty level (rather than system increase or no increase) and providing feedback for performance assessment after training (rather than during training or during plus after training).

The PBSim allows for extensive user control in that participants can, for the most part excluding a few central roles, be as active or passive as they choose.

2.9.5. Quality and Timing of the Debrief/Feedback

Another critical finding of this literature review is the importance of debriefing and feedback in a simulation game. Henriksen and Lainema (2014) developed a design framework for business games using three commercially available games (European), the Mindsetter, a game of change management (http://www.mindsetter.dk), the EIS Simulation (http://www.calt.insead.fr/project/EIS-Simulation) about change communication, and Real Game, a supply chain management game (http://www.realgame.fi/index2.php). They review the arguments for and against the use of reflective breaks in games, saying that many designers advocate for an immersive flow, not wanting to break into the experience, while skeptics argue about how much is actually being learned during the flow without our commonly understood notion of the learning process that prescribes some pauses for reflection. These authors argue for
multiple cycles of games with brief pauses to disturb the sensation of mastery (as mastery means the problem is solved and learning stops). Recent research however does point to leaving the debrief to the end of the experience. For example, Gegenfurtner et al. (2014) found in their meta-analysis that providing performance assessment after training (rather than during or having both) was crucial. Offering assessment feedback after rather than during training led to higher efficacy beliefs and transfer. Other researchers have echoed this finding with Salas et al. (2009) and Lean, Moizer, and Newbery (2014) discussing the importance of a debriefing following a simulation experience.

An alternative view of feedback in support of Henriksen and his colleagues is found in a review article by Bellotti et al. (2013) on assessment of games. They argue for the value of providing formative assessment throughout a game, giving learners constant feedback so they know how they are doing. They refer to emerging research on “in game” assessment, in which it is now more technologically possible to monitor players’ actions and decisions and to give non-obtrusive feedback that enables a player to see how he/she is doing without the cumbersome need to stop to take some kind of test of learning. Bellotti et al. state:

Incorporating in-game assessments takes us away from the predominant, classic form of assessment comprised of questionnaires, questions and answers, and so forth that usually interrupts and negatively affects the learning process and is not very suited to verify knowledge transfer. Designing proper in-game assessment is a challenging and time-consuming activity. However, it should be a distinctive feature of any well-designed serious game, where all the mechanics (e.g., score, levels, leaderboards, bonuses, performance indicators, etc.) should be consistent with and inspired by the set pedagogical targets. (p. 7)

Good pedagogy would suggest that formative assessment be built into a simulation. The results of much of the current research however, suggests that saving feedback to the end of a simulation is most worthwhile, unless it is possible to build it in in an unobtrusive manner as Bellotti’s review suggests.

Hall (2014), in a practical guide to setting up business simulations, writes.

The best learning will come from the discussions that the simulations/games create. Your job as a facilitator is to get the
participants talking about what happened, why it happened, how it applies to their work, why it’s important, and the process behind how they got there. I can’t emphasize enough how important this is. (p. 79)

2.9.6. Group Process Understanding

Research (and practical experience) indicates that some knowledge of how to work in a group, teambuilding and showing attention to group process (activities routinely done in business courses) will be helpful before a simulation begins. Kayes, Kayes, and Kolb (2005) have argued that teams can increase their effectiveness when they are encouraged to intentionally focus on team processes. Faria et al. (2009) note that issues related to teamwork are one of the five most commonly discussed themes in the simulation literature. Essentially the findings indicate that the better the teamwork, the better the performance.

Vos (2014) states:

The lessons for game users from the literature examining team issues is the importance of monitoring team cohesion and of keeping team sizes relatively small. Team-related problems may be greater than other group work when a game runs over an entire semester. Participation and on-going learning can be improved if instructors provide dedicated class time each week where they not only provide feedback to teams but also allow for discussion on problematic or challenging team related issues. Having an attendance requirement at seminars, and/or having students post what they have contributed each week...can help the instructor to identify group problems early. (p. 85)

In a 2015 article, however, Vos acknowledges:

despite the considerable literature on how student teams can increase their effectiveness if they are first encouraged to intentionally focus on team processes (see for example, Kayes, Kayes, & Kolb, 2005), only one tutor interviewed provides training in how to enhance group effectiveness. (p. 70)

This appears to be a deficit in game design—particularly of educational business games where teamwork is usually an essential component of the curriculum. The McGill Peacebuilding Simulation does not include specific group process understanding or teambuilding into its design, a feature discussed later in this thesis.
2.9.7. Design that Encourages Intrinsic Motivation

In discussion of performance it is generally accepted that intrinsic motivation is more powerful than extrinsic motivators (Knowles, Holton, & Swanson, 2005) and intrinsic motivation is a central component of Self Determination Theory that states that we all need to fulfill basic intrinsic needs for competence, autonomy and relatedness (Ryan & Deci, 2013; Froiland, Oros, Smith, & Hirchert, 2012).

In this thesis, I looked for any evidence that students were intrinsically motivated when working on the McGill Peacebuilding Simulation. According to Knowles et al. (2005), time on task and time spent on task when not required to do so are indicators of intrinsic motivation. In the study of the PBSim I asked students about the time they spent on task and whether they spent time they weren’t required to on task. Chapter 4 reports on the outcomes of this component of the research.

2.9.8. Systemic Thinking

An essential task of a comprehensive business education is helping students take a wider, holistic view of the world, so that they are aware of all the stakeholders and factors in the environment that may affect them/their operations. Students need to be conscious of their worlds: from the actual physical environment in which they operate to politics, socio-economic conditions, regulations and government presence, and also culture and local conditions.

Gregory and Miller (2014) summarize the arguments in favour of emphasizing systemic thinking in business schools, as a reaction to traditional business school departments that tend to create silos and mask the essential interconnectedness of the subject matter, while overemphasizing the individual parts of firms at the expense of an appreciation of the integrative nature of organizational systems as a whole. With this narrow view, there is a danger of partial analyses of complex problems, amenable to simplistic solution seeking. Particularly in our current business environment, issues such as sustainability are key, the authors argue, and addressing sustainability issues demands holistic systemic thinking.
Generally, researchers point to the terrific potential for learning games and simulations to help with students with systemic thinking (Washington, Kurthakoti, Halpin & Byrd, 2014).

Washington found that a business enterprise simulation that he applied with business undergraduates increased their systemic thinking. He states:

incomplete information is a characteristic of our business environment so lengthy analysis is often not possible, especially in entrepreneurial enterprises. Without much time for deliberation, developing skills to become a manager who is comfortable making decisions in an uncertain environment and with limited time should lead to greater success. (p. 53)

One of the primary motivations I had for studying the McGill Peacebuilding Simulation as an important component of the research for this thesis was to learn from an established example of an effective simulation in order to develop a design for a comprehensive simulation that could introduce students to the world of business and hopefully contribute their adoption of a more systemic worldview.

2.9.9. Instructor Presence

The McGill Peacebuilding Simulation is very instructor-intensive, more like a traditional role-playing game than a computer-based simulation that students can complete with automatic feedback. Salas et al. (2009) extol the potential of simulation-based training in management education as a potential time saver for instructors, saying it can even lower the workload for the course instructor, who would traditionally be responsible for observing and evaluating each and every student personally (p. 569). This would also be a benefit of commercially available management simulations with built in assessments that require little from an individual instructor. Traditionally however, research has supported instructor involvement in simulations. Faria et al. (2009) states that several studies have shown that business simulations are more successful when the instructor is heavily involved and the students are committed.

Without a supportive environment...the students may be less committed to the training, and therefore, may sabotage their performance or enter with preconceived biases that influence their levels of learning.
... Finally, after the simulation has concluded, the educator must also provide opportunities to practice and refresh the developed competencies, and transfer of the learned skills to the work environment should be actively encouraged. By taking this before, during, and after approach...management instructors can facilitate more active learning and transfer of developed skills. (p. 571)

Cook et al. (2013) report that 17 of the studies they reviewed included instructor presence or absence as a variable but did not analyze this variable further to determine what impact, if any, it had on the learners. Vos (2014) discusses the possible multiple roles of an instructor during a simulation, and the challenges of taking on all those roles effectively. She states, however: "with experience, and over time...an instructor should be able to undertake and switch between the roles of motivator, coach, mediator of disputes, administrator and when called upon, teacher" (p. 87).

To conclude, there is usually an assumption that instructor-presence is a positive influence, but the recommended dimensions of that presence in terms of intensity and primary role remain unclear. In the PBSim, Dr. Brynen, acting in the role of Control was an active and visible participant. His presence was definitely felt by students who commented on this in the survey and focus groups. These results are discussed later in this thesis.

2.10. Blended Simulation Designs

Throughout this review, I found a number of references to blended simulation designs incorporating both technology and face-to-face elements. Studies of blended business simulation designs usually referred to a computer simulation with debriefing in a face-to-face classroom setting. For example, Tunstall and Lynch (2010) refer to a blended design as using some classroom discussions to debrief after a fully on-line computer game. Henriksen and Lainema (2014) discuss different game frameworks using three examples, all of which include periods of playing an on-line simulation game and periods of face-to-face group decision-making and reflection. My review found no examples of research on blended models with concurrent face-to-face interactions and online activity, using regular technology as seen in the PBSim.
Tunstall and Lynch (2010) gathered reactions from business undergrads participating in both simulations of cases and traditional text-based cases. They found that in the simulations the students could make real-time, quick decisions. This is one instance where a study mentions the value of the immediacy of group actions in response to the scenarios possible in a blended simulation, as compared to a typical discussion of a text-based scenario when students are removed from the situation rather than immersed in it—talking about the scenario rather than living it. The authors note the value of using a blend of face-to-face interactions and technology in simulations for “enterprise” [business] education.

Lean et al. (2014) conducted extensive scripted debriefings with students, who maintained their roles after they finished a computer simulation where they needed to deal with critical incidents in teams. The researchers determined that the impact of the simulation was enhanced by the in-person opportunities for debriefing.

They wrote:

...though SGs (simulation games) provide a number of learning benefits, it should be noted that they are not “self-teaching.” Rather, they are best employed as part of a blended learning approach that provides not only a theoretical foundation for the simulation, but also opportunities for post-simulation reflection. (p. 210)

This statement suggests strong support for a blended simulation design such as seen in the PBSim.

2.11. Conclusion

The literature on the educational applications of simulations and role plays is extensive and positive if not conclusive. The field of blended business simulation designs is fairly new territory for designers and researchers. As yet there are few evidence-based design and implementation guidelines available beyond general high level advice that reiterates some of the general basics of good teaching (such as repetition and providing feedback). Meta-analyses show that there are some best instructional practices found within simulations, such as the positioning of feedback,
which can positively affect outcomes. The evidence that students find simulations enjoyable and engaging is strong.

Designing and implementing a useful, simulation based on clear, empirically grounded design criteria will be difficult. Dr. Brynen has developed and refined the PBSim over decades. It is far easier and much less risky for instructors to simply lecture and cover content. Yet simulations and games are continually being developed and studied. There is evidence that students in effective simulations are engaged and that engagement is a step to learning. Simulations are used in business education now and will be in the future. The evidence found in this review suggests that we can learn from other disciplines and sound research to continue to improve designs. As our technological capabilities increase and games and simulations are used more frequently in education and in the workplace, the value of this form of experiential learning, grounded in evidence-based practice, should continue to be realized.

The design elements discussed above were extrapolated from the literature review. The review focused as much as possible on meta-analyses and research into business simulations and blended business simulation designs in particular. I initially chose to focus on communication methods as a unique element of the PBSim, as well as both student engagement and student expectations as both appeared to be so high in my initial understanding of the PBSim.

Through this review many other empirically based useful design elements were found such as: real world relevance, opportunities for independent action and control, encouraging systemic thinking, fun and fantasy, design encouraging intrinsic motivation, instructor role, the importance of the debrief and group process understanding. These elements, briefly discussed above, were noted when encountered and a list was compiled. This list was then used to inform the survey questions in this thesis research. An annotated version of both the pre- and post-survey showing the background for each of the questions is found in Appendix B and C, respectively.
Chapter 3.

Description of the McGill Peacebuilding Simulation and the Capilano Introduction to Management (BADM 101) Course

3.1. The Peacebuilding Simulation

The following is an in depth description of the McGill Peacebuilding Simulation (PBSim). The description is done in a who/what/where/why/how format to give as much detail as possible and to provide a rationale for studying this particular simulation for use in a business context. Where possible Dr. Brynen's own words are used to indicate his intentions for the McGill simulation.

3.1.1. Origins

The PBSim was developed and has been run annually for over 15 years by Dr. Rex Brynen, a political science professor at McGill University, Montreal, Canada. Dr. Brynen is deeply involved in simulation-based learning including disaster relief/humanitarian aid training programs. Dr. Brynen offers the following description of his work and interests in his PAXsims blog:

specializes in Middle East politics, development, and security issues. He is author or editor of eleven books on the politics of the region. He has also served as a member of the Political and Security Policy Staff of the (Canadian) Department of Foreign Affairs, as an intelligence analyst for the Privy Council Office, and as a consultant to the International Development Research Centre, the World Bank, United Nations agencies, and others. In 2011 [he] received the International Studies
Association’s Deborah Gerner Innovative Teaching Award for his work with classroom simulations. (PAXsims, n.d., “Editors,” para. 1)

The PAXsims blog contains a wealth of information on serious games and simulations concerning the issues of conflict, peacebuilding, and development in fragile states.

Dr. Brynen (2010) describes the PBSim in an article in the journal Political Science and Politics as follows.

The first simulation, conducted in 1998, was held over five days among the two dozen members of a mixed-graduate/upper-level undergraduate seminar group. It has grown substantially in size and scope since then, however, and now typically consists of around 10 MA and Ph.D. students, 100 upper-level undergraduates, and another 10 to 20 other undergraduates in supporting roles, engaged in intensive role playing for a full week. (p. 145)

The simulation takes place at the end of the Political Science 450 Peacebuilding and post-Conflict Reconstruction (undergraduate) and Political Science 650 (graduate) courses. It is well-known among the political science and international development students who compete to secure a place in the class where enrolment capped at 100 students. It has been featured in McGill’s promotional YouTube video (McGill University, 2011).

As it has become available Dr. Brynen has incorporated technology into the simulation. The PBSim has evolved from a face-to-face exercise conducted around a table to a completely mobile endeavour, with students using the communication methods widely available in 2015—cell phones, emails, social media, website development—as well as face-to-face meetings that they independently schedule, to do the work.

3.1.2. General Description

The PBSim is an enhanced or blended role-play educational simulation. In their roles, students attempt to maintain peace in the war torn country of Brynania where a ceasefire is temporarily in place between the government and rebels in a civil war. Neighbouring countries on the continent of Cyberia are also enmeshed in various ways. The game scenario includes diamond trade, natural disasters, refugee camps, political
refugees, possible military coups and constant media investigation and reporting. Within the scenario United Nations' agencies and NGOs (non-governmental organizations) provide humanitarian assistance and other international actors such as world governments, the World Bank, and others are involved.

The focus of the simulation is the war-torn country of "Brynania," where a long-standing civil war pits an authoritarian military regime (dominated by the majority Brn ethnic group) against a separatist Zaharian insurgency in the south (led by the Popular Front for the Liberation of Zaharia, and the smaller, more radical Zaharian People's Front). The Zaharians have blockaded the country's major port of Mcgildishu. The northern Brn warlords of the Free People's Army, who defy government authority and control the northern diamond-producing region of the country, pose a further challenge. To the west, there is also some unrest among the small Icasian ethnic minority. The civil war in Brynania thus most closely resembles civil wars in Central or West Africa, with a weak central government, ethnic tensions, and a multiplicity of armed groups, warlordism, and lootable resources.

Brynania is one of six countries that occupy the continent of Cyberia. To the west, it is bordered by Icasia, a large, corruption-plagued almost-failed state (based loosely Mobutu's Zaire). To the east it is bordered by powerful Ruritania, an authoritarian regime that has offered military support to the Brynanian government (based loosely on Syria). The remaining countries of the region comprise Concordia (a small and stable pro-Western democracy), Uqamistan (a poor, radical regime), and Udem (an impoverished country hosting a large French military base). (Brynen, 2010, p. 146)

It's possible to get a sense of the fun, complexity and drama embodied in the PBSim from the above description. There are light-hearted aspects (place names are based on Montreal schools, there is a Bagel Society) as well as multifaceted serious issues, very much based on real conflict situations. Students request and receive their roles several weeks beforehand and are each given a role description and on-going field reports (see Appendix D for a field report example).

Dr. Brynen (2010) states:

During the simulation itself, students play their roles through e-mail correspondence, face-to-face meetings, instant-messenger software, Voice over Internet Protocol (VoIP), and telephone conversations. Two e-mail lists (listservs) are used to broadcast simulation news and developments: one for routine items, and the other for official news
reports (generated by Control or the Cyberian Times) and flash alerts. A simulated online New York Times is also published for the start of each day [written by Control], summarizing the previous day’s events and any overnight developments. Students can also request additional information from their staff (Control) [Note. Dr. Brynen is Control] at any time. Humanitarian actors typically receive an update at the start of the day on conditions in their areas of operations. Military actors are provided with an updated map of military deployments as necessary. (p. 147)

Figure 3.1 is a basic map of Brynania that is provided as a resource for students. Different groups are also given different versions of the map depending on their roles. For example, the Government of Brynania map will show the troop movements while the rebel map shows only the geography.
Figure 3.1. Map of Brynania (Brynen, 2013b; used with permission).
3.1.3. **How the PBSim works**

After applying for and receiving their role assignments (each student requests three choices, some prominent roles require resume submission) students are given access to two Listservs, one for announcements to which they can post, and one for News that comes from “official” sources.

The students prepare by reading about their roles and reviewing the resources and rules on the PBSim website (http://brynania.wordpress.com; see Figure 3.2). They receive a field guide to their region with the issues to be addressed and budgets with line items. They are encouraged to contact others within their group to plan and discuss strategy before the PBSim starts. There is no cost to meetings held before the PBSim but once it starts the aid agencies must “pay” for travel and meeting costs. Each group has a budget to undertake tasks such as shipping supplies to refugee camps. Each of these tasks will have a cost attached. Participants submit their accounting sheets to Control (Dr. Brynen) each day, detailing how much they have spent and on what.

Students conduct the PBSim through face-to-face meetings of all descriptions and virtually through e-mails, texts, Skype calls, website development and other media, budget and document production. All e-mails must be cc’d to Dr. Brynen (Control) and the students are encouraged to ask questions of Control.
Peacebuilding in Brynania

Simulating War-to-Peace Transitions

Introduction
The Brynania simulation is intended to recreate many of the issues, challenges and operational dilemmas confronting real-life decisionmakers concerned with war-to-peace transitions. Participants (or teams of participants) will assume the role of the various parties to the conflict, regional actors, selected external states, International organisations and NGOs. The simulation is largely conducted by email, supplemented by occasional face-to-face or online meetings. In addition, a variety of critical resources are available via the web. Rex Brynen will act as game moderator/referee (a.k.a. “Control”).

Duration of the Simulation
The 2014 Brynania simulation will take place from 31 March to 7 April 2014.

Peacebuilding Course
The Brynania simulation is a part of the Peacebuilding course (POLI 450 / 650) at the Department of Political Science, McGill University.

Figure 3.2. Brynania PBSim Website
(http://brynania.wordpress.com; used with permission)
A sample e-mail from Dr. Brynen (Figure 3.3) shows how the conflict was re-ignited at the start of the PBSim when there was a cease-fire.

-------- Forwarded message --------

From: Rex Brynen, Prof. <rex.brynen@mcgill.ca>
Date: Wednesday, March 25, 2015
Subject: SIM FLASH enemy attack
To: Zpf1 Sim <zpf1.sim@mail.mcgill.ca>, Zpf2 Sim <zpf2.sim@mail.mcgill.ca>
TO: Leadership of the Revolution
FROM: ZPF combatants, Sector Zahrville North
With fire and blood we shall liberate thee, oh sacred Zaharia!

1. At 10:30 hours today Zaharian villagers were attacked by a large force of Brynanian troops at Grid J10.
2. Local ZPF forces immediately responded, forcing the enemy to retreat.
3. ZPF forces suffered 3 dead, six wounded. Estimate enemy suffered at least 30 dead. Because of tactical situation, no bodies were recovered.

CONTROL

“Watching Over Equatorial Cyberspace.”
On Twitter: #brynania, @BrynaniaCONTROL

Figure 3.3. Sample email from Dr. Brynen to students in the PBSim.

3.1.4. Who Is Involved in the PBSim

The students in POLI 450 and POLI 650 take on one of a range of roles for the week. In addition, there are various outside actors and other classes who may take part. The roles and their broad objectives are summarized below.

- Diplomatic/political actors, such as the United Nations, European Union, the Organization of Cyberian Nations, potentially the United States and other individual states, attempt to secure peace and a lasting agreement between the parties.
• Aid actors (CARE, the Red Cross, etc.) must organize, communicate with each other, develop websites, draw attention to their causes, maintain their budgets, and secure funding from potential donors.

• Military actors whose roles vary depending on what happens during the PBSim. They must have rules of engagement and work with the political actors in often long drawn out processes. Dr. Brynen recommends the students who play these roles have some military background if possible.

• Civil society actors such as human rights groups, various media actors, the Chamber of Commerce and unions can play a variety of roles that change with each version of the simulation. The capturing (and eventual successful release) of a female human rights activist seems to be a common occurrence.

• “Public opinion” actors are played by former students and other contacts of Dr. Brynen. They each are allocated funds and respond virtually to aid groups’ donation requests.

A full list of student roles is available on http://brynania.wordpress.com.

Several other classes may be involved in the simulation. A Concordia University journalism class participates regularly in role as a “World News Service” writing daily articles on the simulation events.

Dr. Brynen (2015a) summarizes the participants’ involvement from the PAXsims blog:

A total of 147 persons participated:

• 101 from my undergraduate POLI 450 (Peacebuilding) course
• 9 from my POLI 650 (Peacebuilding) graduate seminar
• 6 from Prof. Megan Bradley’s POLI 359 (Politics of the International Refugee Regime) course, who formed a special policy advisory unit for the main UNHCR team
• 13 from Prof. Lisa Lynch’s JOUR 443 (International Journalism) course at Concordia University, who made up the “World News Service” and reported in real-time on simulation events
• 18 others in four different countries (former students and other friends recruited via Facebook) who represented public opinion, members of the diaspora, and private charitable donors.

The class sent some 12,451 separate e-mails during the simulation, and conducted many hundreds of hours of meetings, videoconferences, and
online conversations. I also sent some 2,127 e-mails during the week. (para. 3)

Dr. Brynen alone has the role of Control and his TAs do not assist in answering questions or monitoring conversations (Dr. Brynen, personal communication, April 8, 2015). All e-mails during the PBSim must be cc’d to him. He responds to questions, sends out reminders, adds new information, and produces a daily *New York Times* (simulated) front page summarizing the day’s events. He also monitors all student activity, including contributing to Facebook groups; he has an active Twitter account; he even keeps track of the Cyberian League football scores, and more.

3.1.5. **Where the PBSim Takes Place**

The PBSim takes place both physically on the McGill University campus and virtually. Students are free to meet where they choose. On campus, some McGill building rooms are designated countries for the duration of the game such as the main lecture hall which is “Geneva” where the United Nations Security Council meets at the beginning and end of the simulation. Some of the student groups such as the Government of Brynania had their own reserved meeting room on campus for the duration of the simulation. Other larger groups such as the Organization of Cyberian Nations (OCN; the continent where Brynania is located) and the UN Office for the Coordination of Humanitarian Affairs (OCHA) had informal areas in the student building or library where they would meet regularly. The rebels kept their location a secret (they seemed to mostly communicate via Skype).

3.1.6. **When the PBSim Took Place**

The PBSim took place between Wednesday March 25, 2015 and April 1, 2015, normally between the hours of 9 a.m. and 9 p.m. each day. Note that each of the 7 days of the PBSim represents 1 month in Brynania time, from April-October (strategically to take in flood season in the fictional country of Brynania); for example, March 25, 2015 at 10:30 became the date April 10, 2015.

The initial and final meetings were held during scheduled class time in the scheduled class location. Communication and work on the PBSim happened between 9
a.m. to 9 p.m. daily with reduced hours over the weekend. There was a curfew that was strictly enforced (students received a penalty personally or to their organization if they sent an e-mail after the curfew at night or before the official start at 9 a.m.). This was to give both the students and Dr. Brynen a break from the intense activities of the PBSim.

Prior to the PBSim start date there was at least one briefing class on March 9 (classes are 50 minutes, three times per week). The class before the PBSim (March 23) was also a preparation class with students meeting in the teams with which they would be working. After the PBSim ended there were two debrief classes and two classes on the course outline (Brynen, 2015b; Appendix D) described as “Conclusion” (and then the term end). Dr. Brynen noted during the first debrief class that he would be making references to the PBSim during the remaining classes.

Once again, this design mimics real life, and real life in business, particularly for an entrepreneur, since at any time a participant might receive an e-mail with news needing a response or a request for a meeting.

According to Dr. Brynen the game outcomes of the PBSim will differ every year, from full to partial agreement, to breakdown and continued civil war, to widespread ethnic cleansing (this occurred once, followed by United Nations intervention).

3.1.7. Outcomes for POLI 450 and McGill University

The simulation has benefits for political science and McGill University as a whole. POLI 450 has increased in size from approximately 25 students when Dr. Brynen first started the simulation in the late 1990s to a cap at 100 students in 2015. There is a waiting list for the course. The PBSim has been featured in a McGill promotional video training peace negotiators (McGill University, 2011) and in other McGill articles and blogs (Hui, n.d.; Kateryna, 2013).

3.1.8. Outcomes for Students

There is little public information available on student evaluations of the PBSim. One exception is research for a 2010 Psychology Ph.D. thesis (King, 2012) that looked for terrorist traits in personality assessments of students who chose rebel roles. During
the process of this research King and Dr. Brynen informally asked students about their learning outcomes. The questionnaire results were summarized by Dr. Brynen (2013a) in a PAXsims blog post in June:

...students reported learning in every single area we asked about. Learning was highest in those areas related to process and operational constraints (that is, the bureaucratic politics, “friction” and “fog of war/peace”)—precisely those areas that it is hardest to explore through conventional lectures and readings. Students also overwhelmingly reported that a week of simulation was more valuable to them than a week of readings or lectures. Very importantly, however, they saw the experiential learning of the simulation as being complimentary with the more conventionally-delivered course material, synergistically improving their understanding of prior course readings. As I noted in a previous post, there were no statistically significant gender differences in learning.

Self-reported learning effects were smallest in those areas that related to the development of personal skills like leadership, time management, or empathy (although even here there was agreement that the simulation had delivered some learning). In addition to data above, we had also asked students to self-assess their skills in such areas both pre- and post-simulation. That part of the study revealed no substantial, statistically-significant changes. (para. 2)

Anecdotally, students who have taken the PBSim and students who have heard of the PBSim say wonderful things about it. In several trips to McGill prior to commencing this research and in discussions with 10-15 undergraduates familiar with the PBSim, I only heard positive comments, which reinforced my decision to study the PBSim in depth.

3.1.9. Limitations to My Knowledge of the PBSim

The PBSim is a complex multi-faceted exercise that is hard to sum up in a few paragraphs. I had permission from Dr. Brynen to access students and events throughout the week of the PBSim and he forwarded numerous e-mails to me to help give me a sense of what was transpiring. I was included on the general listserv for the announcements and e-mails that all students received from Dr. Brynen and from each other (approximately 550). I didn’t see the more than 10,000 other e-mails to which Dr. Brynen monitored and responded to so my understanding of the PBSim remains hazy: I know a little more than the average student in the simulation but only a little more. I did sit in on a number of student meetings, but by no means do I have a thorough picture of
the complexities of each of the 100 roles in the PBSim. My view was necessarily broad rather than deep. I have never taken an undergraduate political science class. Dr. Brynen and I did not discuss the educational objectives he had or his strategy in implementing the PBSim.

3.2. Introduction to Management Course (BADM 101), Capilano University

The course I teach at Capilano University (BADM 101) is a standard first-year undergraduate introduction to management course taught in most university and college business departments in Canada and elsewhere. The textbook used (Robbins, Coulter, Leach, & Kilfoil, 2012) is adapted from an American version and is used across Canada. The text is divided into major themes including:

- Planning and Decision-Making
- Leading: including understanding groups and teams, group conflict, negotiation
- Organizing: including human resource management
- Controlling: including budgeting and supply chain management, managing change, managing ethically and responsibly.

Students also practice public speaking in the course and complete written assignments. (See Appendix E, BADM 101 course outline.)

A number of different instructors teach BADM 101 in standard lecture and small group activity formats. Each instructor will bring their own experience into the course and adjust the assignments accordingly. A final assignment will normally include at least one case study, either drawn from the text or crafted from current events.

3.3. Peacebuilding Simulation: Curriculum Similarities between POLI 450 and BADM 101

The general and specific learning outcomes for BADM 101 as stated in the course outline (Nowlan, 2015; Appendix E), along with a “Manager’s Toolbox” also from the course outline that attempts to make each outcome practical, are shown in
Table 3.1. In the final column of the table, based on what I know about the PBSim, the presence of each of the BADM 101 learning outcomes found in the PBSim is assessed. The POLI 450 course outline (Brynen, 2015b; Appendix E) and the Peacebuilding website don’t list specific learning outcomes so it is difficult to compare them directly and easily.

Brynen (2010) did comment on the purpose of the PBSim in the quote below:

The key purpose of the simulation is to highlight the complex and interrelated dynamics of peace operations [emphasis added] in a way that course readings are unable to do so. Of particular importance in this regard is the simulation’s role in demonstrating why—despite all of the political science literature, lessons-learned reviews, and agency catalogues of best practices—such operations often generate both suboptimal processes and disappointing outcomes, for reasons that are frequently embedded in the pathologies of organizations [emphasis added] ... Although not a primary goal of the simulation, the exercise also contributes to a number of practical student skills, including public speaking, negotiation, team and information management, and effective and professional written communications [emphasis added]. (p. 145)

Brynen’s comments indicate the possibility of relating the PBSim to a business/management environment. Both are complex dynamic systems, with organizational challenges. However, the skills he refers to, while not the primary focus of the PBSim, are developed as a secondary purpose, while they are a primary purpose of a typical business undergraduate management course.

Table 3.1 shows in detail that many of BADM 101 learning outcomes appear relevant to the PBSim. The content and skills addressed in the PBSim (looking at the aftermath of war/conflict) include topics such as planning, strategy, decision-making, ethics, negotiation, team dynamics, and general management as well as skills such as budgeting and communication (including marketing and fundraising). Even supply chain management is referenced as teams will review maps and budget for supplies to get through to refugee camps. These are topics commonly addressed in standard undergraduate business courses as outlined above and described further below as to how the course learning outcomes (numbered) under each ability relate to the PBSim.
Table 3.1.
*Relating the PBSim to the Learning Outcomes of BADM 101*

**BADM 101 General Outcomes:**
To develop the students’ awareness of the role of management in business today through study of the current business environment. Management concepts, theories and practices will be discussed and applied. The focus will be on three primary management functions of planning, organizing, and controlling with a leadership lens. One third of the course will be spent on enhancing verbal business presentation skills.

**BADM 101 Course Abilities**

<table>
<thead>
<tr>
<th>Abilities*</th>
<th>BADM 101 Learning Outcomes</th>
<th>Manager’s Toolbox</th>
<th>Relationship to PBSim</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications</td>
<td>1. Increase knowledge of own speaking and non-verbal communication skills through self-awareness activities and peer reviews.</td>
<td>Self-confidence through self-awareness</td>
<td>Occasional/role specific</td>
</tr>
<tr>
<td></td>
<td>2. Understanding of the importance of audience-centred communication.</td>
<td>Adapting communication to intended audience to achieve results.</td>
<td>Yes/role specific</td>
</tr>
<tr>
<td></td>
<td>3. Increase ability to listen to and analyze other peoples’ communication and to give useful feedback</td>
<td>Feedback skills.</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>4. Increase ability to learn from feedback and develop speech-making skills</td>
<td>Handling criticism professionally.</td>
<td>Yes/role specific</td>
</tr>
<tr>
<td></td>
<td>5. Write and deliver a persuasive, organized, well-supported work-related speech.</td>
<td>Public speaking ability.</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>6. Practice using audio-visual aids.</td>
<td>Knowledge of presentation aids.</td>
<td>yes</td>
</tr>
<tr>
<td>Analysis and Decision-Making</td>
<td>7. Broad understanding of current managerial roles and functions</td>
<td>Familiarity with all managerial functions.</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>8. Recognize, define and apply decision-making and planning models to business issues discussed in class.</td>
<td>Decision-making and planning models.</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>9. Conduct an environmental scan of current international business issues</td>
<td>Strategic thinking.</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>10. Use a collaborative team approach during classroom activities and group assignments</td>
<td>Global focus</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>11. Analyze a business speech for effectiveness of delivery.</td>
<td>Team decision-making</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>12. Demonstrate an ability to select and apply control systems.</td>
<td>Analytical focus to improve communication.</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Knowledge of control systems.</td>
<td>yes</td>
</tr>
</tbody>
</table>
### BADM 101 Course Abilities

<table>
<thead>
<tr>
<th>Abilities*</th>
<th>BADM 101 Learning Outcomes</th>
<th>Manager’s Toolbox</th>
<th>Relationship to PBSim</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Interaction</td>
<td>13. Apply business case study methods, working with a group to solve a business problem.</td>
<td>Analytical focus to improve business decision-making</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>14. Awareness of key elements of successful meetings</td>
<td>Leading a meeting</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>15. Successful group work in class and in assignments</td>
<td>Team work and delegation, Brainstorming, Creative problem-solving, Evaluating group performance, Taking corrective action</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>16. Practice communicating change in a class simulation.</td>
<td>Change management fundamentals</td>
<td>occasional</td>
</tr>
<tr>
<td>Citizenship and Global Perspectives</td>
<td>17. Awareness of ethics in business and practice making ethical choices</td>
<td>Understanding of the current business climate</td>
<td>occasional</td>
</tr>
<tr>
<td></td>
<td>18. Awareness of diversity in doing business</td>
<td>Diversity awareness</td>
<td>occasional</td>
</tr>
</tbody>
</table>

### 3.3.1. Capilano School of Business Four Abilities: Communication, Analysis, Social Interaction, and Citizenship and Global Perspectives

**Communication Ability in BADM 101**

The Communication ability here refers to the ability to communicate primarily verbally, with the assistance of visual aids. Students practice their presentation skills individually and in groups. In the PBSim some students will have roles with high communication expectations and will be required to lead frequent group meetings. Their communication skills will be critical. Obviously all students involved in the negotiations simulations will need to be very careful and professional in their communications and will receive feedback from their team if their communication isn’t effective.
While students in the PBSim don’t develop formal speeches they do write letters and craft websites designed to publicize their causes and they must have a good grasp of basic persuasive writing (as well as graphics and website design) in order to accomplish this. So the Communication ability expected in a first-year business class is at a lower level than that expected during the PBSim, embedded in an upper-year class. The importance of audience-centred communication is stressed in both (essential in the PBSim to craft communications that appeal to a variety of audiences, from the people of Brynania to the World Bank, and it is essential that they communicate well within their own teams and in the peace negotiations.

A first-year business program will typically include a separate marketing course where students learn to communicate the benefits of products and services. Similarly students in the PBSim must communicate the benefits of their programs when fundraising and/or winning political support.

**Analysis and Decision-Making Ability in BADM 101**

Students in an undergraduate business management course are expected to understand different management models and apply planning and decision-making models to business problems. In the PBSim students must make decisions based on as much information as they can find that is worthwhile, scanning the simulation environment for what is relevant. So, in both cases analysis and decision-making ability are important and in the first-year business course simple models are taught and then applied in simple in class exercises.

A management course will have very little accounting and finance in the curriculum. A first-year business undergrad will be expected to take basic accounting and Excel® courses and be familiar with the spreadsheet reporting required of students in the PBSim. In this area of control their knowledge would be greater than the typical arts undergraduate in the PBSim. Business students are also expected to take a first-year organizational behaviour class that will include conflict resolution and negotiation skills.
Social Interaction Ability in BADM 101

Team work, problem-solving, running meetings and evaluating performance are all formally taught as explicit curriculum and practiced in an undergraduate business management course. While these skills are not taught prior to the PBSim most of the student roles involve working with a small team and in some cases multiple groups to accomplish objectives. Students are expected to work effectively in teams and to analyze and improve their performance if they are not coming closer to a negotiated settlement.

Citizenship and Global Perspectives Abilities in BADM 101

While this ability is Important to the Capilano School of Business, a school that has an International Business focus, this ability is not as much a focus in the first-year management course. Cross-cultural communication and diversity awareness are generally seen as critical business abilities however, even if not really focal points in BADM 101. On the other hand, an important component of PBSim is awareness of ethnic differences and sensitivity to local concerns.

3.4. Conclusion

The PBSim offers an exciting opportunity to look across disciplines at a mature simulation that covers many of the same topic areas as general business education. I have compared the two curricula and found more similarities than expected. While the BADM 101 course outline (Nowlan, 2015; Appendix E) makes learning objectives such as improving speaking ability explicit, within the PBSim basic skills such as improving oral and written communication, although considered important, are more implicit or side effects of the experience. Students in the PBSim are not evaluated on their communication or teamwork skills and do not complete peer assessments. Students in BADM 101 are evaluated on these skills and do give peers feedback. The PBSim is focused on application and procedural knowledge (as a fourth year course) while BADM 101 rests on the first rung of Bloom’s hierarchy, focusing on declarative knowledge.

Although there are differences overall in the learning outcomes for each course, there are enough similarities to warrant a closer examination of the PBSim design to
determine how it corresponds to the literature on successful simulation design and how it might be adapted to a business context.
Chapter 4.

Research Methods and Approach

This research is largely a concurrent mixed method case study designed to explore a blended real time educational simulation. The aim of this proposed research was to add to our understanding of blended designs for educational simulations with the end goal of identifying a set of design principles to be applied in developing a new evidence-based simulation for an introductory business management course. This study began with a review of the extensive research on educational simulations generally and undergraduate business simulations specifically. The McGill Peacebuilding Simulation (PBSim), a component of an undergraduate political science course (POLI 450) at McGill University, Montreal, was formally investigated in order to develop an understanding of the design elements of the PBSim that might inform and apply to the development of specifications for a similar hybrid role-playing simulation experience for a first-year introductory business management course. The McGill Peacebuilding Simulation, as a long running innovative and immersive role-playing simulation was considered to potentially embody design elements that could be adapted to inform future simulation designs. This chapter provides detail on the design of the survey, focus groups, interviews, and observations used to explore the PBSim.

4.1. Obtaining Approvals

In order to complete this study I required approval from Dr. Brynen and his students to attend his classes and student gatherings, review e-mails, and ask for student feedback. I obtained consent from all survey participants (Appendix F). I also
required ethics approval from Simon Fraser University’s Department of Research Ethics and the McGill University Research Ethics Board (Appendix A). I did not require approval from Capilano University where this research may be applied because no students or faculty at Capilano University were involved in the study.

4.2. Background Research

Chapter 3 describes the McGill Peacebuilding Simulation in detail. The learning outcomes of the PBSim were compared with the learning outcomes of BADM 101, Introduction to Management at Capilano University, and similarities in some of these outcomes were noted. These similarities (which are very common undergraduate learning outcomes such as improving written and oral communication ability and developing teamwork skills) provided further rationale for studying the PBSim to determine what could be applied both to my own potential future simulation and for any instructor contemplating a similar simulation.

Prior to undertaking the field observations of the PBSim, I reviewed the PAXsims blog, the simulation website, articles on the McGill Peacebuilding Simulation specifically and other educational simulations, particularly blended business simulations, as detailed in the literature review in Chapter 2. From this review, I derived evidence-based design principles for successful simulation design and developed some initial survey questions from that extensive literature review. I also discussed the simulation with several previous POLI 450 students from the last 3 years and had an initial meeting with Dr. Brynen in October 2014. That conversation was followed with a Skype call and e-mails prior to my actual arrival at McGill to observe the 2015 iteration of the PBSim.

4.3. Research Methodology during the PBSim

I wanted to have the opportunity to observe the PBSim firsthand as much as I could while the students were experiencing it. For this purpose I chose a broad methodology, rather than, for example, shadowing one or two students throughout. Instead, I sat in on as many group meetings as I could, trying to gain as many different perspectives as possible. I also wanted anonymous student opinions, so I offered a
confidential survey to all students in this year’s PBSim. *(Note. The McGill students use the term “Sim.”)* Comparing students in different years of the PBSim would have been interesting but challenging as each PBSim can be very different depending on how the “game” develops. I also thought that focus groups would provide a good opportunity to discuss issues in a more in-depth way, where I could also follow up and explore what I had observed during the week. I deliberately left the design of the focus groups very open-ended as this is an exploratory study. Finally, I wanted the views of the expert, the designer of the PBSim Dr. Brynen, and the two graduate TAs who had also previously taken POLI 450 and experienced the simulation as students. I interviewed all three separately the week after the PBSim concluded. The interviews took place concurrently with the focus groups, which were scheduled before the analysis of the survey was completed.

### 4.3.1. Field Observations

I began the field research by sitting in on the last formal class in the POLI 450 course before the PBSim began. Dr. Brynen introduced me to the students and I invited them to participate in the research. I then observed the simulation over 7 days in March/April 2015. I sat in on the first simulated United Nations Security Council meeting (the whole class was invited, this meeting kicked off the simulation), the final Peace Treaty signing class and the subsequent debriefing class. During the week I read the public listserv e-mails that were produced each day (approximately 150) by students; other participants and the instructor and looked at simulated news reports, blogs, Twitter feeds, videos and websites developed by the students and listened to music the students produced for the PBSim. I sat in on larger meetings including OCHA (a mock United Nations association of non-governmental organizations), the mock United Nations Security Council strategy meeting, an Organization of Cyberian Nations (OCN; countries in the continent where the mock country of Brynania is located) meeting and smaller peace negotiation sessions with the Government of Brynania and the rebels.

I kept a diary every day to record my activities and impressions of the student meetings that I attended and included any other relevant observations. I summarized data as it became available, such as compiling and categorizing e-mail frequencies.
4.3.2. Communication Methods

One of the key design elements of the PBSim that was of particular interest to me was how and when communications occurred during the PBSim. As best as I could I wanted to document how communication occurred to see what might be adapted to a simulation in another context. I joined the two listservs that were developed for the simulation and followed up from those sources to other types of communication. Dr. Brynen also forwarded other e-mails of interest to me. Students posted links to their Twitter feed, Facebook groups, websites, and videos they created. I kept an informal inventory of all the communication methods I saw in use and then compiled those methods into the questions concerning communication that were asked on the student survey. I also asked the students to add any communication methods that were not already listed on the survey.

4.3.3. Focus Groups

I wanted to explore in depth the student experiences during the simulation so I added focus groups to the field observations, surveys, and interviews. Students were approaching the end of their term and given the demands of the PBSim during the week they would need to focus on their other university coursework as soon as the simulation was finished. Since I wanted to talk to them while the experience was still fresh I held the focus groups immediately after the debriefing class, when many students would normally have a spare period. During the last class before the PBSim I personally asked for focus group volunteers and circulated a sign-up sheet with coffee-card gifts for the first few who signed up. I also offered focus group volunteers a pizza lunch. This approach worked well and both focus groups filled up reasonably quickly. I followed my direct appeal with an e-mail request to the whole class and also asked several of the higher profile actors in various roles if they would attend. I wanted to have a diverse range of roles represented.

The focus groups met on April 8, 2015 for 1.5 hours in a political science meeting room. With the permission of the participants I audiotaped the sessions. The simple protocol for the focus groups is attached as Appendix G.
After general introductions and obtaining students' signatures on consent forms (Appendix H), I introduced the aims of the research and reminded them again that I had no connection to McGill University or Dr. Brynen and that all of the discussion was confidential. I began by asking them whether the PBSim met/didn't meet or exceeded their expectations. I then asked about aspects of the PBSim they liked and aspects they would change if they were designing it themselves for next year's class. I followed up to seek individual strong opinions and by asking whether there were other ideas or views. I took notes as well, particularly when students mentioned something specifically related to the simulation's design.

**Charting experiences during the week**

I wanted to see if the students experienced similar highs and lows over the week, and how they would each define a high or low experience. At the end of the focus group I asked each student to complete an individual simple chart with a 3-point scale for each day of the simulation. For each day, they were asked to choose either a neutral, positive, or negative point. I asked them to provide a little information as to why they choose the point they did each day. They could choose more than one point per day, that is, have both a high and low experience on the same day. Generally, the intention was to see if the simulation design created a common pattern of responses during the week. For example, did the students start stressed and confused on Day 1 and complete the game happy and knowledgeable on Day 7? Are there common patterns in responses to any simulation experience we should be aware of when designing a new simulation? I superimposed the individual charts to create one overarching graph to see whether any common patterns did emerge.

### 4.3.4. Surveys

I developed a student survey based on some of the literature reviewed in Chapter 2 on engagement in simulations I developed a student survey. I also included questions based on my own design interests, particularly in communication methods. I wanted to know more about student expectations of the PBSim so I used a pre- and post-simulation survey format. The surveys are attached as Appendices B and C, along with an explanation of why survey items were included in the annotated versions of the
surveys (Appendix I). I conducted an informal pilot of the survey questions with a few students who had been in POLI 450 at McGill University to ensure the wording of questions was clear.

The pre-simulation survey was available to the students to complete for 1 week before the start of the simulation. The post-simulation survey was available for 2 weeks after the completion of the simulation, but as the students were headed into their last week of classes and exams I expected most students to complete it in the first few days after the PBSim. I allowed students who had not completed the pre-PBSim to complete the post-PBSim. They self-identified with five digits from their student numbers or another set of numbers of their choice so that I could compare pre-and post-responses to determine whether their expectations were met and to see the impact of some of the demographic factors.

I asked the students in the class prior to the start of the PBSim to take the time to complete the on-line survey and followed up with two reminder e-mails to the student e-mail listserv. Dr. Brynen also sent a follow up request asking students to complete the post-Survey.

4.3.5. Interviews

The interviews with Dr. Brynen and his two TAs were intended to be open-ended in nature, generally following the focus group protocols (see Appendix J for the interview questions). After observing the PBSim in operation, I had some specific questions for Dr. Brynen on the simulation mechanics such as how he assessed student performance. Each of the two interviews (I interviewed the two TAs together over lunch) lasted 1.5 hours. I also previously had a longer discussion with Dr. Brynen about creating a PBSim-like business education simulation. I audiotaped the interviews (see Appendix K for consent form). I kept the interview focus on design features of the simulation and what the interviewees might change or adapt in the future.
4.4. Data Analysis

As this study was exploratory in nature, I used basic descriptive statistics, such as frequencies, means and medians for the survey items. A least squares mean (LSM) approach was used in the analysis model to reduce the effect of missing data from the survey questions (in case not all students filled out all survey items).

An analysis of variance between the pre-and post-PBSim surveys looked at the response variables (the survey scores), the explanatory variables (pre- and post-PBSim, gender) and the interaction of the two variables to see how student expectations of the simulation related to their actual experience of it and whether gender made a difference in the student experience. The analysis included a random effect for subjects to characterize idiosyncratic variation due to individual differences.

Student emails to the general listserv and Dr. Brynen’s e-mail types and frequencies were tabulated by day. I wanted to explore the communication throughout the week so see whether there were any patterns which could be further analyzed. Frequencies for the various types of communication used by students over the week were also tabulated to see what type was most used.

Once again, as this study was exploratory in nature, I looked only for very general themes in the responses to the open-ended survey questions and in the focus groups and chose illustrative quotes to highlight these themes. These results are presented in Chapter 5.
Chapter 5.

Results

In this chapter, the results of the exploratory surveys, focus groups, interviews and field observations are analyzed separately. Drawing on these data sources, the results most relevant to the design of a future business simulation design are highlighted,

5.1. Pre-PBSim Survey

As mentioned in Chapter 4, students in POLI 450 were asked to complete an online survey (Appendix B) during the week before the start of the PBSim.

5.1.1. Profile of the Student Respondents to the pre-PBSim Survey

The majority of the respondents in this undergraduate political science class were either political science or international development students or had some combination with another major. There were also 12 students from another university, (Université de Montréal; UdeM) in International Studies participating in the PBSim and responding to the survey. Table 5.1 below provides more detail about the characteristics of the students who completed the pre-PBSim survey.

The gender breakdown was similar to that of McGill University as a whole with more females than males in the class (Table 5.2). Students were primarily in the upper years of their studies. A sizable group of political science graduate students ($n=13$) also responded to the survey (Table 5.3).
Table 5.1.
Survey Respondents: Majors

<table>
<thead>
<tr>
<th>Major</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political Science</td>
<td>16</td>
</tr>
<tr>
<td>Political Science and another Major (African</td>
<td>13</td>
</tr>
<tr>
<td>Studies, English, Economics, History, Psychology, etc.)</td>
<td></td>
</tr>
<tr>
<td>International Studies UDEM</td>
<td>12</td>
</tr>
<tr>
<td>International Development</td>
<td>11</td>
</tr>
<tr>
<td>International Development and another Major</td>
<td>4</td>
</tr>
<tr>
<td>International Relations</td>
<td>2</td>
</tr>
<tr>
<td>Management</td>
<td>1</td>
</tr>
<tr>
<td>History</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
</tr>
</tbody>
</table>

Table 5.2.
Survey Respondents: Gender (pre-PBSim Survey Question 2)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>37</td>
<td>62</td>
</tr>
<tr>
<td>Male</td>
<td>23</td>
<td>38</td>
</tr>
</tbody>
</table>

Table 5.3.
Survey Respondents: Year of Study (pre-PBSim Survey Question 3)

<table>
<thead>
<tr>
<th>Year of Study</th>
<th>Number (Frequency)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Student</td>
<td>13</td>
<td>21.7</td>
</tr>
<tr>
<td>Graduate/Alumni</td>
<td>3</td>
<td>5.0</td>
</tr>
<tr>
<td>Undergrad Year 1</td>
<td>2</td>
<td>3.3</td>
</tr>
<tr>
<td>Undergrad Year 2</td>
<td>10</td>
<td>16.7</td>
</tr>
<tr>
<td>Undergrad Year 3</td>
<td>29</td>
<td>48.3</td>
</tr>
<tr>
<td>Undergrad Year 4</td>
<td>3</td>
<td>5.0</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>
Respondents chose their roles from a drop down menu provided in the survey and listed below. A wide range of roles was represented by the survey respondents, reflecting the frequency of PBSim roles as a whole (Table 5.4).

Table 5.4.
Survey Respondents: Simulation Roles (pre-PBSim Survey Question 4)

<table>
<thead>
<tr>
<th>Role in the Simulation</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government of Brynania</td>
<td>2</td>
</tr>
<tr>
<td>NGOs such as Care, Human Rights Watch, Oxfam</td>
<td>9</td>
</tr>
<tr>
<td>Other Brynanian Actors: trade unions, militia, human rights groups</td>
<td>5</td>
</tr>
<tr>
<td>Other Regional or International Organization: World Bank, European Union, Organization of x Nations</td>
<td>1</td>
</tr>
<tr>
<td>Other states such as Canada, China, France, Germany</td>
<td>24</td>
</tr>
<tr>
<td>Rebels: PFLZ, Zaharian People’s Front, Free People’s Army or EIFM</td>
<td>6</td>
</tr>
<tr>
<td>Regional Actors in Equitorial Cyberspace: Concordia, Icasia, Rutitania, UdeM, Uquamistan</td>
<td>3</td>
</tr>
<tr>
<td>United Nations Agency: UNHCR, UNICEF, WFP</td>
<td>9</td>
</tr>
</tbody>
</table>

Note. Students chose which roles they wanted. They submitted their three top choices.

The survey included several questions about student computer game and role-playing game experiences. The number of respondents who reported regular use of these games (only 8 students) was considered too small to examine separately. The results are shown below (Tables 5.5 to 5.7).

Table 5.5.
Question 5: How often do you play computer games?

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>33</td>
<td>55.0</td>
</tr>
<tr>
<td>Occasionally</td>
<td>7</td>
<td>11.7</td>
</tr>
<tr>
<td>Rarely</td>
<td>12</td>
<td>20.0</td>
</tr>
<tr>
<td>Regularly</td>
<td>8</td>
<td>13.3</td>
</tr>
</tbody>
</table>
Table 5.6.
*Question 6: How often do you participate in online multiple player games?*

<table>
<thead>
<tr>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>42</td>
</tr>
<tr>
<td>Rarely</td>
<td>10</td>
</tr>
<tr>
<td>Occasionally</td>
<td>5</td>
</tr>
<tr>
<td>Regularly</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 5.7.
*Question 7: How often do you participate in role play games?*

<table>
<thead>
<tr>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>28</td>
</tr>
<tr>
<td>Rarely</td>
<td>15</td>
</tr>
<tr>
<td>Occasionally</td>
<td>12</td>
</tr>
<tr>
<td>Regularly</td>
<td>5</td>
</tr>
</tbody>
</table>

5.1.2. **Student Expectations of the PBSim**

Overall, students who responded to the pre-PBSim survey had positive expectations of the simulation. They were asked to state their agreement or disagreement with the following statements using a scale of: 1 strongly agree, 2 agree, 3 neutral, 4 disagree, 5 strongly disagree. The students reported reasonably high levels of agreement with all of these statements with a mean ranging from 2.2-2.5 overall (Table 5.8). Note: these statements were used as they roughly correspond with the survey statements used to assess various types of student engagement on the Post-Sim survey. Means and standard deviations (rather than simply reporting totals for each of the 5 items on the scale) are used for both the Pre- and Post-PBSim survey analysis to determine statistical significance of the results. The results indicate that students generally expected to be engaged in their roles, wanted to find out more about the PBSim, hoped they would have fun with other students, and expected to do well. They also expected to experience some stress.
Table 5.8.  
*Student Expectations Pre-PBSim (1 = strong Agreement)*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I expect to be engaged in my role during the Sim.</td>
<td>2.2</td>
<td>1.47</td>
</tr>
<tr>
<td>I am looking forward to finding out more about Brynania.</td>
<td>2.2</td>
<td>1.36</td>
</tr>
<tr>
<td>I expect to be challenged to make decisions and take action.</td>
<td>2.5</td>
<td>1.67</td>
</tr>
<tr>
<td>I hope I will have some fun with the other students during the Sim.</td>
<td>2.3</td>
<td>1.25</td>
</tr>
<tr>
<td>I expect to do well in the Sim.</td>
<td>2.5</td>
<td>1.19</td>
</tr>
<tr>
<td>I expect to work hard during the Sim.</td>
<td>2.2</td>
<td>1.39</td>
</tr>
<tr>
<td>I expect the technology we use during the Sim will be manageable.</td>
<td>2.4</td>
<td>1.34</td>
</tr>
<tr>
<td>I expect to get stressed at points during the Sim.</td>
<td>2.3</td>
<td>1.43</td>
</tr>
<tr>
<td>I expect the Sim will be a good learning experience.</td>
<td>2.3</td>
<td>1.67</td>
</tr>
</tbody>
</table>

5.1.3. **Responses to the Open-ended pre-PBSim Survey Questions**

The open-ended pre-PBSim survey questions are summarized below.

**Question 9. List one thing (if anything) you have heard about the PBSim**

An interesting outcome of this question was that not one of the respondents in the pre-PBSim survey reported hearing *only* positive views of the PBSim. The largest number of comments \((n=19)\) to this question refer to hearing that the PBSim is “overwhelming,” that “it takes over your life,” that “you won’t have time for your other coursework.” As well as the many comments about the stressful and time-consuming nature of the PBSim, however, a substantial \((n=10)\) number of respondents reported both negative and positive expectations from what they had heard. Comments such as “It is enormously stressful and the most fun thing you can be involved with at McGill” typify this response. All of the responses that mentioned fun, also mention the intensity, stress or overwhelming nature of the experience.

The majority of respondents had heard something about the PBSim prior to the actual experience. Ten students didn’t respond to the question
**Question 10. What do you hope you will learn in the PBSim?**

The largest number of comments ($n=15$) referred to understanding the system and the dynamics at play between groups in times of conflict. Students wanted to know “how the world of post-conflict humanitarian relief works.”

The second largest grouping of answers ($n=8$) referred to the desire for skill development of some type. Students listed communication, problem-solving, decision-making, how to work under pressure, how to fundraise, how to work with donors, how to write persuasively, how to work cooperatively on a low budget as some of the specific skills they would like to develop during the PBSim.

A number of students ($n=6$) specifically wanted to gain “real world” experience focusing on high stakes, multiple actors and pressure situations. Some students ($n=5$) mentioned their career goals. “I want to work in an NGO [non-governmental organization],” “I want to see what working in a high pressure international situation would be like.” One student said: “I think that it is the best possible learning experience (outside actual field experience) to synthesize and use all the different things we have learned in class.”

**5.2. Post-PBSim Survey Responses**

Sixty of the one hundred students in the class (60% response rate) completed the post-PBSim survey online in the week following the simulation. They were reminded about the survey through an e-mail from me and one from Dr. Brynen. Although this was over half the class of 100, the response rate was lower than expected, and will be discussed in Study Limitations. The number could potentially have been increased by having students complete paper surveys in or at the end of class (although not all students attended class). Overall, the post-Survey results were very positive suggesting that the PBSim met or exceeded the students’ expectations.

Table 5.9 summarizes responses to the survey statements using the same 5-point scale as the pre-PBSim survey, with 1 meaning “agree strongly” and 5 meaning “disagree strongly.” Three asterisks (*** ) indicate median and median scores above 2 (strong agreement). One asterisk (*) indicates mean and median scores 3 and below
when the question is not reversed (scores of over 3 meaning disagreement with the statements “there was too much teamwork” “too much information” too many choices”).

Table 5.9 shows the highest scores (a score of 1) were for “instructor is engaged,” “I was engaged,” “I spent more time and did more work than required,” “I enjoyed the Sim,” “I spent time with and learned more about classmates” and “I learned more about peacebuilding.” The lowest scores (between 3-5) were for “I received feedback” from professor/designate and/or other students, “I knew what I had to do during the Sim” and “I knew how my performance would be assessed.”

Table 5.9.
Summary Statistics for the post-PBSim Survey

<table>
<thead>
<tr>
<th>post-PBSim Question</th>
<th>Mean</th>
<th>SD</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I found the Sim to be real world.</td>
<td>2.0</td>
<td>0.93</td>
<td>2.0</td>
</tr>
<tr>
<td>2. I knew what I had to do throughout the Sim</td>
<td>2.8</td>
<td>0.96</td>
<td>3.0*</td>
</tr>
<tr>
<td>3. I enjoyed the humour, fantasy and fun elements of the Sim</td>
<td>1.6</td>
<td>1.01</td>
<td>1.0***</td>
</tr>
<tr>
<td>4. I used the course content when participating in the Sim</td>
<td>2.1</td>
<td>1.07</td>
<td>2.0</td>
</tr>
<tr>
<td>5. I personally had to make many decisions during the Sim.</td>
<td>2.1</td>
<td>1.36</td>
<td>2.0</td>
</tr>
<tr>
<td>6. I received feedback from other students on my performance throughout the Sim</td>
<td>2.9</td>
<td>1.18</td>
<td>3.0*</td>
</tr>
<tr>
<td>7. I received feedback from the professor or designates on my performance throughout the Sim</td>
<td>3.4</td>
<td>1.13</td>
<td>4.0*</td>
</tr>
<tr>
<td>8. I was aware of mistakes I made and could take action to correct them</td>
<td>2.4</td>
<td>1.03</td>
<td>2.0</td>
</tr>
<tr>
<td>9. I had opportunities to express some creativity throughout the Sim.</td>
<td>2.0</td>
<td>1.10</td>
<td>2.0</td>
</tr>
<tr>
<td>10. I learned more about peacebuilding from the events and actions during the Sim.</td>
<td>1.7</td>
<td>1.11</td>
<td>1.0***</td>
</tr>
<tr>
<td>11. I learned more about other students during the Sim.</td>
<td>1.6</td>
<td>0.91</td>
<td>1.0***</td>
</tr>
<tr>
<td>12. I learned more about myself during the Sim.</td>
<td>2.2</td>
<td>0.97</td>
<td>2.0</td>
</tr>
<tr>
<td>13. I thought the rules were clear, acceptable and relevant to the game.</td>
<td>2.2</td>
<td>1.15</td>
<td>2.0</td>
</tr>
<tr>
<td>14. I had personal goals to achieve</td>
<td>2.4</td>
<td>1.20</td>
<td>2.5</td>
</tr>
<tr>
<td>15. I spent time trying to figure out what was really going on in Brynania and surrounding countries.</td>
<td>2.0</td>
<td>1.00</td>
<td>2.0</td>
</tr>
<tr>
<td>16. I had many opportunities to interact with my classmates.</td>
<td>1.7</td>
<td>1.07</td>
<td>1.0***</td>
</tr>
<tr>
<td>17. There was too much teamwork during the Sim.</td>
<td>3.7</td>
<td>1.09</td>
<td>4.0*</td>
</tr>
<tr>
<td>18. The actions I took in my role mattered in the game.</td>
<td>2.3</td>
<td>1.22</td>
<td>2.0</td>
</tr>
<tr>
<td>19. There were too many choices for actions during the Sim.</td>
<td>3.5</td>
<td>1.11</td>
<td>4.0*</td>
</tr>
<tr>
<td>20. I saw the course material come to life during the Sim.</td>
<td>2.0</td>
<td>1.16</td>
<td>2.0</td>
</tr>
</tbody>
</table>
### post-PBSim Question

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. The time frame we operated in was realistic.</td>
<td>2.1</td>
<td>1.10</td>
<td>2.0</td>
</tr>
<tr>
<td>22. There was the right amount of collaboration in the game.</td>
<td>2.1</td>
<td>1.02</td>
<td>2.0</td>
</tr>
<tr>
<td>23. There was the right amount of winning/losing in the game.</td>
<td>2.4</td>
<td>0.86</td>
<td>2.0</td>
</tr>
<tr>
<td>24. There was too much information given during the Sim.</td>
<td>3.4</td>
<td>1.26</td>
<td>4.0*</td>
</tr>
<tr>
<td>25. There was enough face-to-face time with other actors.</td>
<td>2.1</td>
<td>1.08</td>
<td>2.0</td>
</tr>
<tr>
<td>26. I now have an overall understanding of what we were doing and how my role fit into the larger picture.</td>
<td>2.1</td>
<td>0.88</td>
<td>2.0</td>
</tr>
<tr>
<td>27. I spent more time on the Sim than on other courses during the week.</td>
<td>1.4</td>
<td>1.05</td>
<td>1.0***</td>
</tr>
<tr>
<td>28. I spent time doing extra work and/or communication than would be required for the course.</td>
<td>1.8</td>
<td>1.24</td>
<td>1.0***</td>
</tr>
<tr>
<td>29. I know how my performance will be assessed.</td>
<td>3.3</td>
<td>1.21</td>
<td>3.0*</td>
</tr>
<tr>
<td>30. The instructor seemed engaged.</td>
<td>1.3</td>
<td>1.02</td>
<td>1.0***</td>
</tr>
<tr>
<td>31. I was engaged throughout the Sim.</td>
<td>1.6</td>
<td>1.10</td>
<td>1.0***</td>
</tr>
<tr>
<td>32. Overall I had fun during the Sim.</td>
<td>1.8</td>
<td>0.98</td>
<td>1.5***</td>
</tr>
<tr>
<td>33. The Sim met my expectations.</td>
<td>1.8</td>
<td>0.83</td>
<td>2.0</td>
</tr>
</tbody>
</table>

* low agreement  *** high agreement

### 5.2.1. Response Summaries for the Open-ended Questions on the post-PBSim Survey

**Question 33. What was a high point for you during the week?**

The responses to this question were wide-ranging. Many students reported that their work with teammates or negotiating with others was a high point. Below are sample responses:

Having the government representatives of Brynania come to me to discuss a coordinated EU collaboration with the government because “each country just says they can't do anything without the other.” This certainly wasn't just me since all the member states and I had discussed the importance of coordination, and hearing they stuck together was—strangely—rewarding.

Working with other members of the class and getting very 'addicted' to the Sim.

The two agreements that China made with countries in Equatorial Cyberspace (Uqamistan and Icasia), as well as a heated argument with President/Queen of Ruritania about border disputes with Uqamistan.
A high point during the Sim for me was when I was able to draft a proposal and send them to donors and they were accepted and we received funding.

Convincing one of my teammates to stop giving all our money away for free!

A few responses indicated more personal goals: “meeting somebody,” “managing my stress.” “becoming a twitter#.”

Seven students remarked that the peace deal or negotiations were their personal high point. The words “collaboration,” “cooperation,” and “coordination” were used frequently.

Other responses:

There was not one specific high point in the Sim. The greatest moments for me were probably when I/my country was successful in negotiations.

Honestly, the entire week was a whirlwind of emails, meetings, and crises. It is hard to choose a high point; however, being a member of the UNSC and finally passing two resolutions on the last day was extremely rewarding.

I was particularly fascinated by the PR aspect of the Sim, the need to constantly monitor the news or media releases in order to stay on the ball, to have every single base covered. My appreciation for this factor is not merely limited to the information collection aspect, but also extends to the need to formulate clear and concise policy memos, without truly ever sacrificing creative genius.

**Question 34. What were low points for you during the PBSim?**

The majority response to this question was that other people contributed to respondents’ low points during the PBSim. Interpersonal conflict was mentioned by 16/41 respondents or 40%. Typical responses:

Learning the uselessness of bureaucratic entities such as OCHA and states of the UNSC. They are nothing useful to say or do and it was cumbersome to have to update them constantly when we were trying to make a difference.
Competing with the President.

When [Group X] made things personal and engaged in nasty slander against me, both publicly and privately.

Having to miss a lot of meetings 1 month and realizing my field rep was pursuing new initiatives without really updating me over e-mail—I felt really disconnected to the projects.

Some of the interactions with other players.

Some students mentioned personal issues or mistakes they felt they’d made.

Being almost $150,000 in debt during the month of October.

When I sent out an email too early during curfew to my team partner which resulted in the loss of $10,000 in aid.

I could not be involved as I could, especially during the weekend, because I lived on the fringes of the island in the west.

Other comments:

Very intense experience, both a benefit and a curse.

Everything that I found ineffective personally (e.g., spending too much time in meetings and dialogue and not getting much out of them) were still effective in that they were characteristic of real life and thus, learning points.

Being able to write to “staff” was a great help! They had the perfect balance of wise advice and sass. The Bryannounce is also quite the essential feature.

Thought the extent to which the Sim had been developed was great and really helped to be engaged and get into it, e.g. the fact that it had its own map, elaborate country profiles, even a football league, etc.

I have to admit the hours of the Sim were pretty gruesome. While I understand that it's supposed to represent real-life, which is something it most certainly succeeded in doing, it was suddenly so all-consuming that it was hard to shut off, or even do anything else, both during the Sim and also during the curfew hours.

One factor which I believe took away from the overall experience was the fact that not everybody put the same level of effort and commitment towards the Sim, which is expected and not something that anything can be done about. However it does add to or take away
from your own experience when you interact with someone who may or may not be putting is as much effort as you are.

**Question 36. What else about the PBSim made it work or not for you?**

Some of the responses to this question were similar to the previous high and low points questions. Below are some sample comments:

I really enjoyed the way information flowed—we were never really sure what we knew—or what we didn't.

Work[ed]: well organized, very realistic. Improve: better integration with course material and more structured briefing material.”

The lack of central control (by that I mean how autonomous we were) I think was crucial in making it realistic, as we had to contend with the numerous personal biases and irrational behaviours.

**Question 37. Communication during the PBSim**

Students were asked to choose all of the communication methods they used during the PBSim from a drop down menu of 18 methods derived from those I had noted to be in use during the PBSim with an additional “Other” blank space to fill in.

The number of different communication methods students reported using during the PBSim extended from a low of five different methods to a high of 10 different methods. Most students (47/48 respondents) reported using six or more communication methods. The most frequently used methods were: face-to-face, both one-on-one and group meetings, e-mails, Facebook groups, twitter posts, text, and Skype meetings. A detailed summary of the question results is found in Table 5.10.

Table 5.10. **Question 37: Communication during the PBSim: What forms of communication did you engage in during the PBSim? N=49**

<table>
<thead>
<tr>
<th>Form of Communication</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mails to other participants</td>
<td>49</td>
</tr>
<tr>
<td>Face-to-face meeting with 1-2 others</td>
<td>48</td>
</tr>
<tr>
<td>Face-to-face meeting with a group (more than 2 others)</td>
<td>46</td>
</tr>
<tr>
<td>Official e-mail to listserv (includes media, government, aid posts)</td>
<td>40</td>
</tr>
<tr>
<td>Twitter post</td>
<td>26</td>
</tr>
<tr>
<td>Facebook group (active participant)</td>
<td>26</td>
</tr>
<tr>
<td>Form of Communication</td>
<td>f</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>----</td>
</tr>
<tr>
<td>Texts to other participants</td>
<td>20</td>
</tr>
<tr>
<td>Other e-mails to listserv</td>
<td>19</td>
</tr>
<tr>
<td>Skype meeting</td>
<td>14</td>
</tr>
<tr>
<td>Phone calls</td>
<td>10</td>
</tr>
<tr>
<td>Website development</td>
<td>9</td>
</tr>
<tr>
<td>Video production</td>
<td>8</td>
</tr>
<tr>
<td>Other social media: Instagram, Snapchat, etc.</td>
<td>5</td>
</tr>
<tr>
<td>Blog posts</td>
<td>5</td>
</tr>
<tr>
<td>Image/photo production</td>
<td>3</td>
</tr>
<tr>
<td>Other: document drafting</td>
<td>2</td>
</tr>
<tr>
<td>Voice recording production</td>
<td>0</td>
</tr>
<tr>
<td>Video appearance</td>
<td>0</td>
</tr>
<tr>
<td>Appearance in a circulated photo</td>
<td>0</td>
</tr>
</tbody>
</table>

**Question 38. Meeting space**

The students were asked where they met when they met face-to-face with other students. They chose from a drop down menu with five choices as well as a space for “other” (Table 5.11).

<table>
<thead>
<tr>
<th>Meeting Space</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designated space on campus: office, booked meeting room, classroom</td>
<td>40</td>
</tr>
<tr>
<td>Group meeting area on campus: Library SSMU</td>
<td>48</td>
</tr>
<tr>
<td>Informal meeting area on campus: study area, hallway</td>
<td>35</td>
</tr>
<tr>
<td>Restaurant/bar on campus</td>
<td>7</td>
</tr>
<tr>
<td>Off campus restaurant/bar</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 5.11. *Meeting Space n=49*

The results show that students voluntarily met extensively in groups face-to-face even though all other methods of communication were available to them.
Question 39. Anything else about communication during the PBSim you would like to elaborate on?

There were only a few responses to this question.

The fact that we were always “plugged in”—even when I was moving around my team and I would text quite furiously—made the Sim a key component of my life.

I really liked that we could use Facebook to communicate in our group. This made it much faster and less complicated than the formal e-mails.

Question 40. What 1-3 things would you change about the PBSim if you were designing it for next year’s students?

The majority response, 13/37 respondents, said more upfront information on roles, field guides. “Not a big problem though” said one student.

Perhaps [sic] more information in the initial briefings, and a mandatory reunion with the people whom you will be working with before the Sim to avoid initial lag in group work.

A bit more explanation about how to prepare/what to expect might have made the first day go smoother. A deeper explanation of the budget process would have also been nice.

Provide guidelines on tasks and responsibilities for each actor—Set up a complaint and accountability mechanism.

A smattering of other responses included: “provide a sanity day” [a day-off], “do the Sim during Reading Week,” “make it worth more.”

Question 41. Anything else about your experience during this PBSim that might be useful for future educational simulation designers to consider?

There were 17 responses and 4 of those said “nothing/can’t think of anything.” Sample comments below:

I imagine that this only succeeded because Brynen did not sleep at all for the whole week. It was key that he maintained an omniscient and omnipotent presence.

A little more emphasis on self-care and respect.

The amount of detail and work that Prof Brynen put into the Sim was essential for it working as smoothly as it did. I’ve done other, longer
Sims before where the prof had little to no involvement and it meant the students were less dedicated to their roles.

**Question 42. Debrief of the PBSim**

Students were asked whether the debrief class on April 8 answered their questions about the PBSim. They chose either “yes” or “I still have questions about the Sim.” The majority of respondents (17/23) felt the debrief class answered their questions adequately.

**Question 43. Additional questions you have about the PBSim: What are they?**

Only seven respondents answered this question. A sample of their responses is below:

- I would like to know how Prof. Brynen decides certain outcomes, such as military, domestic unrest, etc.
- 1. What criteria are used to grade our participation?
- 2. How did Prof. Brynen manage to do all of the things he did?

**Question 44. Do you think you learned what Dr. Brynen wanted you to learn from the PBSim experience?**

Students were asked to choose from “yes,” “no,” and “don’t know.” The majority of respondents, 85%, chose yes, agreeing that they thought they had learned what Dr. Brynen wanted them to.

### 5.3. Pre- and post-PBSim Survey Comparisons

Thirty-seven students completed both the pre- and post-PBSim surveys, using a code (the first five numbers of their McGill student identification) to enable the match-up of responses. Overall the post-PBSim results conformed to the pre-PBSim expectations. Students thought they would work hard, be challenged, have fun and learn more about peacebuilding and on the whole their expectations were solidly met.

There were a few interesting results (see Table 5.12). There was a significant difference
between students’ expectations of their engagement versus how engaged they actually were. Gender differences in expectations and actual experience were also significant. Both men and women were significantly more engaged than they thought they would be but for men this difference was significantly greater than for women.

Table 5.12. 
Results for Analysis of pre-PBSim Question 8a “I expect to be engaged” versus post-PBSim Question 31 “I was engaged”

<table>
<thead>
<tr>
<th>Effect</th>
<th>F-value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>I expected/I was engaged</td>
<td>21.85</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Gender</td>
<td>0.09</td>
<td>0.7693</td>
</tr>
<tr>
<td>Interaction</td>
<td>7.48</td>
<td>0.0115</td>
</tr>
</tbody>
</table>

An analysis using “least squares mean”, a statistically robust version of a mean equation was used to compare gender, expectations and engagement (Tables 5.13 and 5.14).

Table 5.13. 
Least Squares Mean Scores for pre-PBSim Question 8a “I expect to be engaged” versus post-PBSim Question 31 “I was engaged”

<table>
<thead>
<tr>
<th>PBSim Question</th>
<th>Gender</th>
<th>Least Squares Mean (LSM)</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>31. I was engaged</td>
<td>Female</td>
<td>1.7</td>
<td>0.28</td>
</tr>
<tr>
<td>31. I was engaged</td>
<td>Male</td>
<td>1.0</td>
<td>0.52</td>
</tr>
<tr>
<td>8a. I expect to be engaged</td>
<td>Female</td>
<td>2.3</td>
<td>0.21</td>
</tr>
<tr>
<td>8a. I expect to be engaged</td>
<td>Male</td>
<td>3.2</td>
<td>0.40</td>
</tr>
</tbody>
</table>

Men started out with much lower expectations (3.2 LSM) and finished with higher levels of engagement (1.0 LSM) than women, who started with 2.3 LSM and ended with 1.7. So while both sexes had high levels of engagement and higher than the expected, the change for men was much more extreme and they rated their engagement higher than the women.

Men spent more time than women trying to figure out what was going on in the game as seen in the chart below.
Table 5.14.

Least Squares Mean Scores for Combinations of pre- and post-PBSim and Gender for pre-PBSim Question 8b “I look forward to finding out more about the world of Brynania” and post-PBSim Question 15 “I spent time figuring out what was really going on in Brynania and surrounding countries”

<table>
<thead>
<tr>
<th>post-PBSim Question</th>
<th>Gender</th>
<th>Least Squares Mean</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Female</td>
<td>2.26</td>
<td>0.27</td>
</tr>
<tr>
<td>15</td>
<td>Male</td>
<td>1.28</td>
<td>0.49</td>
</tr>
<tr>
<td>8b</td>
<td>Female</td>
<td>2.38</td>
<td>0.21</td>
</tr>
<tr>
<td>8b</td>
<td>Male</td>
<td>3.54</td>
<td>0.39</td>
</tr>
</tbody>
</table>

Men had medium expectations about learning more about Brynania but reported that they actually did spend a lot of time figuring out the game. On the other hand, the women’s scores didn’t change that much; they mildly (2.38) agreed they expected to spend time finding out more about Brynania, and then reported that they did spend that time (2.26)—so no extreme differences—their expectations were in line with what actually happened.

Men reported having slightly more fun than women although everyone had fun (pre-PBSim Question 8d “I expect to have fun with other students” versus post-PBSim Question 32 “Overall I had fun during the Sim.”) Men’s scores went up pre- and post-most dramatically from 3.4 to 1.3 (LSM). Women’s scores also went up from 2.4 to 1.9.

Due to limited responses to the “computer game or role play frequency questions” (pre-PBSim Questions 5, 6, and 7) students with more of this type of experience could not be compared with those with less experience. Similarly, pre-PBSim Question 11 asked students to identify whether their role was one with power (as identified by Dr. Brynen and myself (see Chapter 3), or not. Only 12 respondents identified as those with “power” roles and only 4 of those respondents completed both the pre-and post-survey so those with potentially larger roles could not be compared with what, on paper, could be assumed to be smaller roles, to see if there was any difference in their experiences.
5.4. Focus Groups Results

The incentive of a pizza lunch worked very well as a means of attracting student participation to two focus groups at the end of the simulation. There were 6 students in each focus group, and I asked each the same questions. I started by asking each participant if the PBSim met, exceeded, or didn’t meet their expectations. The majority response for each focus group was that the PBSim met their expectations. I then asked a few open-ended questions (see Appendix G for the focus group questions):

What did you like/what worked for you in the Sim?
What could be improved?

When a topic was introduced into the discussion, such as the influence of Dr. Brynen, I would ask around the table if there were the same or differing viewpoints. Both groups were animated, and grew more animated as the time progressed. I found they were generally hesitant to say anything critical about the PBSim. They did mention interpersonal conflicts they had had. Only one student in the second group was highly critical of an action taken by Dr. Brynen. While critical of the specific action (Dr. Brynen had apparently deleted something the student had posted to a PBSim student Facebook group) the student said it was overall a great experience. When the student was speaking, other students spoke up to defend Dr. Brynen. I found myself actively searching for any differing viewpoints. Most students wanted to continue talking about the PBSim and the details of who had done what. They had to be slightly prompted to think about the specific design elements of the PBSim.

In both groups there were students who felt that there should have been a day-off during the PBSim (which runs straight through 7 days, including a weekend). However, other students felt this would break the momentum of the experience. Following are some of the representative quotes from the focus groups.

Commenting on what they particularly liked about the PBSim.

By far the best educational experience I have had at McGill—dealing with people, communication, the experience was so real. I was bothered when people were dying.

I liked the format, the in-person and the e-mails, the flexibility.
It was really useful to do things on e-mail and in person. We were negotiating via Snapchat.

Involves you fully, realistic, people working in the Sim get close—7 months of working together! [Note. Each day is a month in PBSim time].

[From North American representatives] So realistic—the Western world lost interest as soon as there was peace talks.

“The rich data base” ... The real world focus.”

It’s great fun. All we could talk about was the Sim. When Dr. Brynen said our aid projects had been well received we were high fiving.

Participants also acknowledged the pressure.

The emails kept coming, you get sucked in.
I didn’t want it to take over my life.
Felt pressure from my team. Very realistic.
On the weekend when we went out we didn’t know how to talk about other things.
Having a good team took the stress off my shoulders.
“There was a lot of stress and personality clashes.” “Coordination was a struggle.”
It works without it but collaboration sure made it easier.

Participants also remarked on the Dr. Brynen factor and his impact on their experience:

So much of it is him. He thought of everything ....
Dr. Brynen was an essential resource on what you could and couldn’t do in the Sim.
He was amazing—got involved in the smallest things, like jumping into a Facebook chat.
It really can be all encompassing. He imagined it all in his head and made the students play it out—he’s this mastermind!

Group participants also noted what could be improved:

I didn’t feel prepared enough to do what I was supposed to do.
The pre-Sim documents were slim.
I had periods when I had too much to do and periods when I had nothing to do.
The budgets were confusing.
I wanted to know more about how I could use Control, what we could ask for.
Maybe people in 1 year could help write briefing documents for the next year.
I ignored my thesis, it was ridiculous, just for 10%.
I was so unaware about how the Sim ended—was there a cease fire? I had no idea!

The participants also made remarks about the debrief class (from which they had just come):

I wanted to know more about the developments in our year before finding out about what happened in 2004. [Dr. Brynen had shown the class the outcomes of the PBSim for the past 15 years—how many deaths, refugees, money spent, negotiations, etc.]

Overall the students were thoughtful, articulate, and helpful. The focus groups helped flesh out the PBSim and added another dimension to the survey results.

5.4.1. Charting the Students’ Experience

Figure 5.1 is of the type of chart each student in the focus groups filled out at the end of the focus group. As described previously, they were asked at the end of the focus group to draw in their own personal highs and lows throughout the progress of the PBSim. The completed chart below is typical showing both intense highs and lows. Four of the 12 focus group respondents reported both a high and low point on the same day.
Figure 5.1. An example of a chart by a focus group participant of their self-rated experience of the Sim over the week, showing self-rated high and low points.

Your own experience of the SIM

<table>
<thead>
<tr>
<th>High Point(s)</th>
<th>Neutral</th>
<th>Low Point(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Confusion trying to draft proposals and understand role

Negotiated entry into Mcguilishu w/ PFLZ

Strong plan to enter South Alpha, took lots of research.

Saved Mcguilishu from flood due to extensive preparation

Almost $150,000 in debt

Managed to end SIM w/ $200,000 due to convincing listserv messages & emails

* Confusion trying to draft proposals and understand role

* Negotiated entry into Mcguilishu w/ PFLZ

* Saved Mcguilishu from flood due to extensive preparation

* Strong plan to enter South Alpha, took lots of research.

* Managed to end SIM w/ $200,000 due to convincing listserv messages & emails

Wed (April) 25 SC mtg

Thurs (May)

Fri (June)

Sat (July) Cease fire

Sun (August) Peace talks

Mon (Sept)

Tues (Oct)

Wed (Nov)

Treaty signed April 1

Please indicate with a * a few high/low points for you over the week and give a brief explanation of what was going on at the time.
As shown in the summary of the 12 respondents below, students started from a variety of places. Not all started-off uncertain and stressed; some reported having fun getting to know their fellow team members before the real work began. There was a variety of experiences throughout the week, with Day 3 (Friday) seeming to be slightly more positive for many, with Sunday/Monday showing not as many high points reported, and more highpoints for Tuesday/Wednesday (the last day and half-day of the PBSim when the peace treaty is signed in front of the whole class).

Figure 5.2 shows the experience reports of all 12 focus group participants over the 7-day period.

Figure 5.2. Each focus group participants experience over the 7-day simulation. This chart shows there is no common experience for participants over the week.

Figures 5.3 to 5.5. show some of the activities during the PBSim.
Figure 5.3. In class before the PBSim begins.

Figure 5.4. A reporter interviews a political actor Day 1 of the PBSim.
5.5. Interview Results

I interviewed both Dr. Brynen and his two TAs to learn more about the simulation from their perspectives.

5.5.1. TA Interviews

I interviewed the two TAs over lunch. Each had taken POLI 450, and one was doing her Master’s degree on educational game simulations. Both were very complimentary about the PBSim and Dr. Brynen. They had had wonderful experiences themselves when participating in the PBSim during their undergraduate years. Their comments reinforced the student focus group responses, with similar views on the strengths of the PBSim. The “intense and fun” comment was made again. They emphasized the need for good planning before the start of the PBSim (for students, to get to know their team members and develop initial strategy). They both mentioned that they, and the students currently in the PBSim, report “learning about myself” as a prime
outcome of the PBSim. I asked them about their experiences with other simulations. They were familiar with a variety of crisis games but agreed that the PBSim experience was the most all-encompassing. They said they did not play active assessment roles during the simulation, but did assist in marking the final papers written at the end of the simulation.

5.5.2. Interview with Dr. Rex Brynen, post-PBSim

I interviewed Dr. Brynen in his office, and asked him more about the mechanics of the PBSim, how it operated, what he thought the strengths were, and where he would like to take it in the future. He compared the results of this year’s PBSim with other years, calling it an “average Sim, a little slower to start.” His comments on the specific topics most relevant to simulation design are included under those specifically highlighted result headings in Chapter 6.

Interestingly, Dr. Brynen observed that political science students will not really pick up on the need for businesses to make their own investment decisions. Typically when playing these peacebuilding games students will overestimate the importance of government and assume that a political leader can influence, for example, business location choice, without determining whether a profit can realistically be made from that location. Only 2/100 students in this simulation did not do well on the PBSim as they were AWOL (absent without leave).

As noted above the PBSim is worth 10% of the total course grade. The score is calculated with measures such as the number and quality of e-mails the students send and other communication. Dr. Brynen did not say specifically how he evaluated the e-mails or other communication that students produce such as websites and documents. He did send out a few cautionary e-mails however to the class, encouraging the students to be professional and concise in their communication.

Here is a sample from a note from Dr. Brynen to the group on Friday:

5) Think, then write. Quick hurried unclear emails cause more confusion than action.
As in any class, students could individually take (or not take) actions that might affect their grade. An indication of this, specific to the PBSim, is given in this e-mail from Dr. Brynen to the group on the second last day:

“Please treat the last part of the Sim as if it were continuing indefinitely, that is:

• spend (or don’t spend) your money wisely, rather than suddenly giving it all away
• do not suddenly take uncharacteristic risks or act out of character as if the world were about to end.

doing so will not only adversely affect participation grades but also risks derailing the Sim for others.”

During our discussion, Dr. Brynen said he gave bonuses to those with more active roles but did not elaborate and I didn’t ask for further information. He said he is a great believer in intrinsic motivation and felt it would be a mistake to increase the percentage weight of the PBSim even though students complain every year about the low amount that it contributes to their total grade.

Dr. Brynen has refined and fine-tuned the PBSim over 15 years. He feels that the week-long format is necessary to fully engage in all the activities required. He noted that institutional support is lacking for time and money to upgrade the PBSim and improve the look of it. He finds it easier to develop new educational simulations (which he is doing) rather than go back and make significant adjustments to the current simulation.

He is involved in a number of crisis/humanitarian aid training games (and has released a game to be for sale titled “AfterShock”. He discussed some of the issues in the PBSim in the interview:

Students have troubles with budgets and some don’t know how to use Excel.

Many don’t know they should ask me more questions.

The political half and the aid half clash, don’t communicate, don’t understand each other. There is stove piping going on, some of which is necessary as we all have only so much time and energy, but some means staying in the bubble, not paying attention to your constituency, to other actors.
Dr. Brynen made an important observation that probably applies to students in all class activities. He suggested looking for and encouraging early adopters, that is, student actors who produce something strong that other students are made aware of to set the performance standard high and introduce some competition. This should encourage work quality and peer-learning as students “force each other to improve over the week.” Overall, Dr. Brynen was extremely helpful and open throughout this study, forwarding me e-mails of interest and responding with patience to my frequent requests for help.

5.5.3. Field Observations

As a field observer I participated in the simulation for 7 days in March/April 2015, immersing myself in it although I did not play a specific role. I kept a diary every day (Figure 5.6). I sat in on the introductory preparation class, the first United Nations Security Council meeting, the final Peace Treaty signing class and the subsequent debrief class. During the week I read the public listserv e-mails produced each day (approximately 150) by students, other participants and the instructor, looked at news reports, blogs, Twitter feed and websites developed by the students, viewed videos and listened to music produced for the PBSim. I sat in informally on larger meetings including OCHA (a mock United Nations association of non-governmental organizations), the United Nations Security Council strategy meeting, the OCN meeting (countries in the continent of Cyberia where the mock country of “Brynania” is located) and the smaller peace negotiation sessions with the Government of Brynania and the rebels. The results of my field observations are reflected throughout Chapters 5 and 6.

As this study was exploratory in nature, I simply tried to observe as much as I could and collect as much data as possible. I gained a better understanding of the PBSim as the week went on and was able to observe a number of “lead actors” in action. As a result, I was better informed in convening the focus groups at the end of the study period. Without this experience, the post-PBSim survey results would have been more difficult to interpret and the focus groups harder to understand. Upon observing the PBSim in operation, the influence of Dr. Brynen was evident, so I included questions about his role in the focus groups.
Figure 5.6. Sample daily diary entry (from Ipad), March 25, 2015.

<table>
<thead>
<tr>
<th>Field note March 25,...</th>
<th>2015-03-31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field note March 28 (...</td>
<td>2015-03-30</td>
</tr>
<tr>
<td>Field note March 27</td>
<td>2015-03-30</td>
</tr>
<tr>
<td>Field note March 29...</td>
<td>2015-03-30</td>
</tr>
<tr>
<td>Field note March 26</td>
<td>2015-03-28</td>
</tr>
<tr>
<td>Field note March 24</td>
<td>2015-03-24</td>
</tr>
<tr>
<td>Quebec kitchen</td>
<td>2015-03-24</td>
</tr>
<tr>
<td>Field note March 23</td>
<td>2015-03-23</td>
</tr>
<tr>
<td>TD March 20 montreal</td>
<td>2015-03-22</td>
</tr>
<tr>
<td>TD - March 16</td>
<td>2015-03-20</td>
</tr>
</tbody>
</table>

March 31, 2015, 10:05 AM

Field note March 25, 10:20

Classroom fills, no one quite knows what is going on, some students expecting Brynen to show... Sgsc starts organizing people a little with the flags...

Sim starts at 10:30. Nerves and excitrrrent and a lot of info. Security Council meeting in 10 minutes followed by an EU meeting.

Budget form distributed
General economic/social/geographic info distributed on internal Brynnia conditions
Public opinion players each have money to distribute?
Is it all about getting money?

Media started as observers.

Students trying to understand other peoples roles a little, who is who.
Getting "costumes" - beret for rebels.
Students in small groups discussing strategy...
Who belongs with what country....
Students self organizing, the 9 countries of the security councils, with head

No Rex...

Late start but lots of energy in the room 1/2 full with observers.

Need to add head of Security Council, and head un rep

Did he tell anyone he wasn’t going to show?

Un reps and eu are diff people?
Communication frequencies

I compiled e-mail frequencies on the listserv used by students and Dr. Brynen over the week of the PBSim (Table 5.15). Immediately, from the beginning of the PBSim, and each day thereafter, e-mails started appearing; students were obviously waiting for the official start time, and also trying to squeeze in their last communications before the end of the day.

Table 5.15.
Frequency of e-mail postings from participants to the official listserv over the PBSim week

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Number of E-mails</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>March 25</td>
<td>61</td>
</tr>
<tr>
<td>Day 2</td>
<td>March 26</td>
<td>78</td>
</tr>
<tr>
<td>Day 3</td>
<td>March 27</td>
<td>105</td>
</tr>
<tr>
<td>Day 4</td>
<td>March 28</td>
<td>76</td>
</tr>
<tr>
<td>Day 5</td>
<td>March 29</td>
<td>124</td>
</tr>
<tr>
<td>Day 6</td>
<td>March 30</td>
<td>113</td>
</tr>
<tr>
<td>Day 7</td>
<td>March 31</td>
<td>50</td>
</tr>
<tr>
<td>Day 8</td>
<td>April 1 (half-day)</td>
<td>33</td>
</tr>
</tbody>
</table>

As shown above, the output of e-mails and associated creative endeavours peaked on Sunday, Day 5 of the PBSim. There were 124 e-mails to the official announcement listservs on that day in comparison with 76 the day before and 113 on Monday. Some students, and Dr. Brynen, reported monitoring over 1,000 e-mails between all students (not just the official listserv) daily. The last few days, Monday to Wednesday (Wednesday was a half-day), saw a drop off in communications as the peace treaty details were worked on and presented during the final class time.

Dr. Brynen postings

I tabulated Dr. Brynen’s postings to the general listserv over the week and roughly categorized the type of postings he made. Some were as class professor, making sure everyone was submitting their daily budget and were aware of due dates. Some emails moved the game forward, signifying actions in the game. Some were
posted by Brynen as Control, clarifying rules and actions students could/could not take. The details are shown in Table 5.16.

Table 5.16.
Dr. Brynen: Number and type of email postings by day

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Game Forward(^a)</th>
<th>Game Control(^b)</th>
<th>Professor(^c)</th>
<th>Fun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>March 25</td>
<td>11</td>
<td>1</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Day 2</td>
<td>March 26</td>
<td>11</td>
<td>1</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Day 3</td>
<td>March 27</td>
<td>8</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Day 4</td>
<td>March 28</td>
<td>9</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Day 5</td>
<td>March 29</td>
<td>3</td>
<td>2</td>
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<td>Day 6</td>
<td>March 30</td>
<td>3+17(^*)</td>
<td>2</td>
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<td>Day 7</td>
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\(^*\) 17 = meteorological notifications of an increasingly severe storm.
\(^a\) Fictional but realistic postings from BBC, CBC, Fox, CNN, action reports, New York Times daily summary (Brynen, 2015c, see Appendix L). They are intended to sustain the game scenario and add a touch of realism.
\(^b\) Sim-Sim birds (as described in Chapter 3, sent out when a student breaches curfew, to shame with humour), clarifications of rules.
\(^c\) Complete accounting sheets, reminders of curfew in effect.

“Control” e-mail examples:

*The city/civilian population of McGill has been spared major effects by CARE’s flood preparedness programme. However, non-CARE actors who did not storm-proof their own projects in the city are affected.*

*No man with a Ruritanian uniform was seen in Camp 7 or 9. UN personnel were not aware of the rich range of local dialects in Brynania, nor the many varied uniforms of its military and security services. They misidentified a Brynanian officer, possibly based on dubious ethnocentric assumptions that anyone eating cabbage must therefore somehow be Ruritanian.*

*PBSim curfew is now in effect.*

*Brynania will awake again on 9 September.*

“Professor” email examples, ensuring students are completing work properly:

*Aid providers (not donors) are strongly advised to use the excel spreadsheet linked in the rules for end-of-month accounting.*
Dr. Brynen is actively and ceaselessly involved in the PBSim. The e-mails above are only the ones he sends out to all students in the listserv. He is also reading every individual and group e-mail produced in the simulation (they all must be cc’d to him), responding to questions with individual emails, and monitoring and active in the various social media groups as discussed.

Chapter 6 provides a discussion of the observations and data from Chapters 4 and 5 and assesses their importance as design considerations for the construction and implementation of a similar hybrid role-playing simulation in a course for undergraduate business students.
Chapter 6.

Discussion of the Results

6.1. Introduction

This chapter addresses the first two questions of this study:

1. What elements of the Peacebuilding Simulation are consistent with the literature on simulation design criteria?

Chapter 2 reviewed the literature on simulation design and a number of evidence-based design elements were isolated, focusing on the topics of expectations, engagement, and communication. The PBSim was then described (Chapter 3) and studied (Chapters 4 and 5). The results as outlined in Chapter 5 are now highlighted and discussed to answer the second study question.

2. What can be learned from the study of the Peacebuilding Simulation that is helpful to the design of blended undergraduate business education simulations?

As this thesis research is exploratory in nature there were some interesting and unexpected findings. Stronger results (present in the surveys, focus groups and my observations) relevant to a future business simulation design and the central questions of this study are labelled “primary” while findings with less direct relevance are labelled “secondary.”
6.2. Primary Results

Primary results refer to the results of the study of the PBSim that seemed most relevant to the design of a future business simulation.

6.2.1. Students Were Engaged in the Simulation in Multiple Ways

The study participants were overwhelmingly positive about their experience in the McGill PBSim. Students reported being engaged in the simulation. Answers to the survey questions that were designed to look at all aspects of engagement showed very positive ratings in all of the dimensions of engagement proposed by Bouvier et al. (2014) discussed in Chapter 2 (namely social, action, experience and individual dimensions). So the PBSim is consistent with the engagement literature on aspects of desirable learning outcomes of simulations in that students reported that they were engaged during the simulation and in multiple ways.

6.2.2. Students Had Positive Expectations of the Simulation

The pre-PBSim survey respondents expected to be engaged. The majority agreed/strongly agreed with the statement on expectations in the survey. Dr. Brynen talked about the simulation from the beginning of the course term. Students also heard about the PBSim from other students who had taken it in past years. These findings suggest that it does seem worthwhile to make an effort as early as possible to address student expectations of a simulation. In the close knit undergraduate community at McGill University it helps that students have friends and relatives who may have taken the course in other years and speak highly of it. This finding is consistent with the literature that suggests that setting up positive expectations of a simulation and providing context is important (Henriksen & Lainema, 2014; Salas et al., 2009).

6.2.3. Natural Blending of Diverse Communication Channels

The communication among participants during the PBSim was intense and multifaceted. The majority of survey respondents reported communicating in a variety of ways and formats.
All but one student reported face-to-face communication, both in small and large groups and several focus group participants reported meeting daily. The average survey respondent communicated in at least six different ways. According to Dr. Brynen, face-to-face time was not seen as a panacea. At one point in a pre-PBSim class he commented on the problematic nature of face-to-face negotiations where charismatic personalities can sway opinions. He encouraged students to focus on careful planning and document wording as essential peacemaking (and business!) skills.

As McGill is a close community, with most students living within walking distance of campus, student groups did establish meeting areas for their organizations in the library or student building, and met and worked there throughout the week. They also knew where other groups were meeting so could quickly have a face-to-face chat if necessary. I observed the importance of face-to-face casual meetings as well as the easy use of open source communication methods. My own observations suggest that in a blend of communication approaches, with a healthy dose of face-to-face interactions as well as common technological communications are desirable elements of a simulation design. As discussed in Chapter 2 however, I have found no other examples of research on this type of blended model with concurrent face-to-face interactions and online activity using regular technology, as seen in the PBSim.

When the PBSim started in the 1990s obviously all of the 2015 communication options weren’t available. As the PBSim has developed over the years, Dr. Brynen has kept pace with technology options and encouraged the students to use what is available. He models this use of technology himself, being an active and creative social media user.

Easy, frequent and natural communication can only assist in the negotiation process. Many educational simulations require logging in, use proprietary software, and may be conducted completely virtually. While obviously this is useful in distance education, it isn’t always necessary and can be expensive and restrictive. Blended simulations can be a workable lower tech approach.

We usually have the luxury in classrooms of having our students present and able to engage in rich face-to-face direct communication. Why not take advantage of this
and use a blended concurrent simulation format, allowing students to practice their face-to-face communication skills as well as professional communications in virtual spaces?

Another advantage of this format is to increase the time students have to potentially work on a simulation. The PBSim was available to the students 12 hours per day over a week-long period (with half-days the first and last days, and reduced hours over the weekend). The students in the focus groups said this was the right amount of time for the simulation. This amount of time in this design (70+ hours, more than the total number of hours in a typical face-to-face undergraduate course) in 1 week enabled more activities to be accomplished, and more flexibility for undertaking a learning activity than a face-to-face format could ever provide.

In this study, I didn’t ask students to break down the percentage of time they spent face-to-face versus online during the PBSim although this might have been interesting to explore. Student responses indicated that they did take advantage of all of the formal and informal methods of communication available. Based on my field observations the fact that they could easily use their normal communication methods throughout the day was an advantage.

6.2.4. Variety of Activities

I observed a variety of collaborative team actions, and opportunities for individual achievement during the PBSim. There was a variety of ways for students to be engaged. Those who wanted face-to-face communication could be involved in meetings and negotiations. Those who wanted to focus on their writing skills, web development, or music/video production could do so. No obvious preference for type of activity was noted by students in the surveys and focus groups, although this question wasn’t asked directly. However, when survey respondents were asked about their high and low points during the PBSim and these points were categorized, more students mentioned some kind of collaborative activity as being a high point for them rather than an individual activity. Low points were also associated with interactions with other people. Some representative comments are reproduced below:

Competing with the President.
When [Group X] made things personal and engaged in nasty slander against me, both publicly and privately.

Having to miss a lot of meetings 1 month and realizing my field rep was pursuing new initiatives without really updating me over e-mail—I felt really disconnected to the projects.

Some of the interactions with other players.

This finding corresponds to the literature on engagement as discussed in Chapter 2. The presence (or absence) of social engagement has a powerful effect on the outcome of a blended simulation.

An advantage of the PBSim design is its flexibility where students are able to be engaged in a variety of ways as suggested in the literature (Sanchez, 2013; Cook et al., 2013; Salas et al., 2009; Gegenfurtner et al., 2014). So students have some ability to produce individually as required or desired and are therefore not always dependent on the group for action. This could be beneficial for students particularly during times of group conflict.

6.2.5. Importance of the Debrief

General feedback about the PBSim experience was left for the debrief class when Dr. Brynen compared what the 2015 class had done with other years. During the debrief class students did not have an opportunity to speak about their experience of the PBSim in this year. Their course assignment was to summarize their learning in an individual paper to be handed in the following week.

In an extensive meta-analysis of simulations Connolly et al. (2012) found that general best practice is to do debriefing at the end of simulations rather than throughout. The PBSim structure followed this practice, with only minor feedback, usually on specific actions taken by groups. Dr. Brynen indicated that he would be continuing to debrief the PBSim in following classes.

Several of the students in the focus groups that were held right after the debrief class expressed some frustration with that particular session. They had just been through a major educational experience and said they wanted to discuss it in some way.
The debrief class may have been a missed opportunity to consolidate the experience and unify the group in class. Perhaps the students could have done brief reports by role groups so the whole group had a comprehensive picture of what actually happened over the week.

During my interview with Dr. Brynen we discussed the final papers that students submit as part of their personal debriefings of the experience. As stated previously, about half of the students indicated that they learned something about themselves. Dr. Brynen said:

An awful lot of the debrief is not about political science things, it’s teamwork, motivating people, it’s coordination, it’s even things that are quite useful like supporting myself to remember to eat and drink—necessary when you are working in the field. (Dr. Brynen, personal communication, April 8, 2015)

He also said:

A lot of the students talk about troubles communicating—they say things like “I thought we had an understanding with the group, then we all went away and did something different.” One student said she finally realized “why you take minutes at meetings!” (Dr. Brynen, personal communication, April 8, 2015)

So these side effects of learning from the PBSim are important to students and generally positive soft skills for any student in any discipline. Once again Dr. Brynen is pointing to the implicit outcomes of the PBSim, outcomes that are not formally desired but are positive none the less and would be positive outcomes in an adapted business simulation as well.

These results led me to the view that it is important to find ways to build a good and extensive debrief into the process. This view is supported in the research literature as a key design element of a good educational simulation (Belloti et al., 2013; Cook et al., 2013; Gegenfurtner et al., 2014; Henriksen & Lainema, 2014; Salas et al., 2009; Sanchez, 2013).
6.2.6. Students Report Learning about Themselves and Other Students

Sixty-nine percent of respondents to the post-PBSim survey reported learning about themselves during the PBSim. An even stronger result was that 90% reported learning more about their classmates. Dr. Brynen and the TAs both mentioned that students say that “learning about myself” was a valuable outcome of the PBSim. During our interview Dr. Brynen, based on comments made by students on their final papers gave some examples of what the students had said they learned. Statements representative of reflections on personal learning included:

I’m much better than I thought at this.
I always thought I was shy.
I realize my interpersonal skills are weaker and I have more difficulty getting people to communicate than I should have and this was my fault.

This was an interesting outcome of the PBSim and warrants further exploration. Did the students learn more about themselves participating in the PBSim than during a regular class? Was this learning tied to the course objectives? This issue was not discussed in the course outline or written materials handed to the students before the PBSim started, yet it was an anticipated outcome (or almost a by-product?) of the experience. I did not ask students in the focus groups more about this objective so I do not have more in-depth observations about this outcome.

I didn’t ask specifically what students learned about their fellow students. However, in the open-ended question on high and low points experienced during the PBSim, the students discussed their frustrations with teammates who weren’t as involved as they were. “It does take away from your own experience when you interact with someone who may or may not be putting in as much effort as you are,” or when they had conflicts with others, such as, “[Group X] made things personal and engaged in nasty slander against me.” As described Chapter 5, the students also mentioned the positive aspects of working with a team in collaborating on negotiations.

While this might be a common outcome of an intense group project where students work closely unsupervised in teams for lengthy periods, the number of times
that some reference to interpersonal conflicts was made in surveys and focus groups as well as interviews suggests that it is worth looking at in more depth. This topic is discussed further later in this thesis with some suggestions for teambuilding and leadership training prior to the start of a simulation.

6.2.7. **Intrinsically Motivated Students**

The majority of respondents (79%) agreed with the post-PBSim survey statement “I did more work than I needed to on the Sim.” A student in the focus group said, “We made more work for ourselves than we had to.” Students mentioned that they talked about the PBSim with each other after the 9:00 p.m. curfew when activities were supposed to stop, even though they knew they should be doing something else. Some said they had trouble talking to other students who weren’t participating in the PBSim. They wanted to “not get sucked in to the Sim” but finding “they were anyway.”

It should be noted that Dr. Brynen talks about the PBSim from the beginning of the course and sets up the students to expect a large and difficult but worthwhile experience. So the students may feel some extrinsic pressure from him (I did not ask about this in the pre-PBSim survey). On the other hand, there is no obvious extrinsic motivation built into the game design; that is, there is no penalty for students who don’t engage fully in the game, and no real extra reward or recognition for high performers beyond potential praise by Dr. Brynen and perhaps some bonus points for the few students who take on a more challenging visible leadership role.

The grade allocated to the PBSim (discussed as a separate finding) is only 10% of the total course grade and therefore is not likely to be much of an extrinsic motivator. Dr. Brynen has said that he is a strong believer in intrinsic motivation and that was one of the reasons he keeps the grade weighting for the PBSim low. All of this, taken together with my observations of the students over the week, leads to the conclusion that while students may have felt some pressure from peers and from the professor to perform, they were also intrinsically motivated, a desirable state for learning (Ryan & Deci, 2013; Knowles et al., 2005). They didn’t seem to require the pressure of grading standards or external penalties in order to be highly engaged in the PBSim.
There was no obvious reward system for better than average results the way there probably would be in an actual business setting (a performance bonus, salary increase, more benefits and perks, etc.). There was no opportunity to provide a team member or whole team peer review the way there often will be in business. To conclude, it appears there were both intrinsic and limited extrinsic factors contributing to student performance in the PBSim.

6.2.8. The Positive Pressure Paradox

Another interesting result of this research is the stress and fun relationship, which I describe as the “positive pressure paradox.” The majority of focus group participants reported hearing prior to the actual experience that the PBSim was both stressful (or intense) and fun. So expectations of intensity and fun can be worthwhile precursors to a successful experience. Most students in the PBSim expected a large and potentially overwhelming experience, braced themselves for it, were thoroughly absorbed and sometimes overwhelmed, and then reported that it was overall a great experience.

6.2.9. Information Overload Is Acceptable

The volume of material produced during every PBSim is large to astonishing. According to Dr. Brynen more than 10,000 e-mails can be exchanged during the simulation, challenging the McGill University server. In 2015, 18 Facebook groups operated actively during the PBSim accompanied by Twitter posts, blog/website postings, and other social media. Students produced videos, music, and audio interviews. (Dr. Brynen mentioned that, while in former years a number of fake videos would be posted publically to Youtube featuring students as rebels for example, this aspect of the PBSim has been curtailed in more recent years over privacy concerns.)

During the PBSim students may practice formal writing skills such as drafting United Nations memos as well as indulging in inflammatory rebel announcements and producing “news” videos and propaganda pieces such as interviews with child soldiers and Brynanina “marching songs.” Dr. Brynen buries critical information in lengthy field reports and news items in order to encourage students to scan documents thoroughly. He also adds his own creative flourishes (producing a New York Times front page each
day during the PBSim which included items such as the soccer scores between countries; see Appendix L) and humour.

An interesting finding was that according to the post-PBSim survey, focus groups and Dr. Brynen, students did not think this was an excess of information. They thought it represented real life, even though at times it was overwhelming. I asked the focus groups directly whether they thought the amount of information exchanged during the PBSim was too much and participants replied with a resounding “no.” The amount of information to sift through seems to be viewed as just part of the experience. Students in the focus groups mentioned that they would organize themselves in groups so that different people monitored e-mails at different times. A possible implication of these findings is that simulation designers should not worry too much about overdoing the amount of information available to students (although it is important to note that many of these students are experienced with university course work, in general, as they are upper-year undergraduates unlike the first-year business students who may not have this coursework experience). Researchers such as Leigh et al. (2014) and Gibbs and Simpson (2004) do concur with the idea of giving enough complexity and academic challenge in learning experiences such as simulations to help ensure positive learning outcomes.

6.2.10. Use of Physical Meeting Spaces

Both survey respondents and focus groups recommended more dedicated physical spaces to support working together face-to-face. For example, the “UN Security Council,” a group of more than 10 students, met in a corner of a study area with other students around them. They had no real privacy for their discussions. Some students found “public” spaces for their group meetings and staked them out daily. There were different areas in the library and student services building where the “aid” groups and the OCN (Organization of Cyberian Nations) met. The Government of Brynania had a meeting room reserved for the duration. The rebels in this particular version of the PBSim met online more than in person.

Virtual simulations have their place and their own excitement. As mentioned previously, however, in most educational institutions we have the luxury of face-to-face
communication and we are able to create full experiences for students—why not take advantage of it? My observations of the PBSim suggest that even within the context of a game where students made use of a wide range of communication media and virtual collaborations, I would recommend that dedicated physical meeting spaces for students are still needed and that face-to-face communications should be encouraged also.

6.2.11. General Experience during the PBSim: Not a Predictable Pattern

During the focus groups participants were asked to chart their own self-defined high and low points over the week. I didn’t define high or low points for the focus groups but when they asked me to elaborate I suggested thinking about specific very positive or negative emotional times for them personally over the week. Interestingly I didn’t find any clear common starting point; some students in focus groups reported great beginnings with teammates and then experienced some low points while others started by feeling overwhelmed and then had a gradually improved experience. (Figure 5.1 and 5.2 document these results.)

Questions 33 and 34 in the survey asked students about their high and low points during the simulation and a number of sample quotations are included in Chapter 5 under these headings.

Most focus group participants experienced significant and dramatic self-reported highs and lows during the week, but they didn’t seem to occur in a predictable common pattern. While the end-point of the game, signing a Peace Treaty with the whole class in attendance, might be expected to be a positive experience for participants, some students in the NGO (non-governmental organization) roles reported dissatisfaction in that they did not feel that their work had been paid attention and that all the focus was on the political actors. Comments such as the one below refer to this sentiment:

In the last 2 days we (NGOs) were not important.

Students who expressed some dissatisfaction about this however, also noted that this is probably like real life, with NGOs carrying on no matter what the political situation. “So realistic—the Western world lost interest as soon as there was [sic] peace
talks.” Based on these results in designing a future simulation it may not be necessary to have everyone start and finish at the same emotional “place” in order for everyone to have an overall positive experience, as is seen in this study of the PBSim.

6.2.12. Fast but Uneven Pace for Some

Most of the time I felt the pace of the PBSim to be fairly fast with new information coming in at a rapid rate. Although as an observer I was not actually doing any work in the PBSim, I was at times overwhelmed by the number of e-mails hitting my inbox. While most students in the focus groups and surveys commented on the amount of information and events they needed to digest, some students said the pace was too uneven. “I was just researching cabbages in the last few days.” There was also some opinion that as the focus shifted at the end to the Peace Treaty process, the political actors were very busy, while others such as some in NGO roles feeling they didn’t have enough to do.

This issue points to the difficulty of trying to coordinate 100 students in a variety of roles over a complex week of activities. Coordination of the PBSim may be more than a one-person job for ordinary mortals. As an outsider observing the PBSim it is difficult to determine whether it was necessary for the students to find more to do on their own, or up to the instructor to help ensure they had the knowledge and ability to take on more. It was also difficult to determine for how many students this was an actual concern because I didn’t ask this question directly in the post-PBSim survey. More in depth questions in the surveys and focus groups could provide verification on the issue of pace during the PBSim.

6.2.13. Creation of a Unique Community

From my field observations and the results of the surveys, interviews and focus groups one important result of this simulation is that a unique community is created each year. As a former student who came back to be a public opinion actor noted “I’m doing it just because it’s fun.” “They want to be a part of it again” said one of the TAs. As a researcher, I felt part of this community simply because I was reading e-mails and sitting in on a few meetings. There was drama, personality clashes, life and death situations,
rumours, secrets, lies and humour. There was silliness and passion. Over 100 people were involved for a week in helping to create peace in a war torn country.

Another factor that may contribute to the creation of community is that each year the PBSim outcome will be different and the scenario will develop differently for different classes. There are no “canned” solutions, although some elements, such as the capture of the female human rights activist, do occur each year. The PBSim seems to evolve and change somewhat, and the characteristics of students in the roles and the dynamics of the interactions between individuals and groups affects the outcomes. Different personalities will flesh out roles differently.

This can’t be easy from an administrative perspective. For example each group had virtual budgets with post-peace planning amounts in them, amounts that are used some years when peace comes early, but not used in other years when negotiations fail. To some degree Control must have the ability to let the PBSim find itself in each year, so that 2015 becomes different than 2014. Students in each year share those unique events. The process of community creation is a design element to be considered for adaptation to other simulation contexts.

6.3. Secondary Results

Secondary results are results taken from the surveys, focus groups, interviews, and field observations that are interesting and that could be explored further. They are not considered to be as directly relevant to the particular core issues of this study (student expectations, engagement and communication).

6.3.1. The Brynen Factor

Students in the focus groups constantly referenced Dr. Brynen or Control, as he was named during the simulation. The students were in awe of his involvement in the PBSim. “He is amazing, and “I don’t know how he does it” were typical comments, echoed by students in the open-ended survey responses.
Ninety-one percent agreed/strongly agreed with the post-PBSim survey statement “The instructor was engaged during the Sim.” At the same time, students spent a significant amount of time trying to figure out the game. Several students said “We definitely spent time thinking about what Brynen was going to do next.”

Dr. Brynen’s regular updates, news bulletins, and guidance to the students are integral to the experience. The humour and fantasy elements he interjects into the PBSim make for a wonderfully unique experience that the students enjoy. (One illustration: If a student forgets to cc’him on an e-mail, or posts an e-mail to the listserv after the curfew time, a Sim-Sim bird mysteriously wreaks some kind of havoc to that person in the next news report, such as flying into the offender’s windshield causing costly damage and delays, or contributing to another minor but time-consuming accident. The Sim-Sim bird comes with its own Audubon style video describing its habitat, etc.)

Dr. Brynen is more involved than might be expected of a typical instructor in monitoring the PBSim (he alone was part of 18 Facebook groups and read and responded to thousands of daily e-mails, including forwarding e-mails of interest to me). He frequently discusses his own involvement in the PBSim with the students beforehand; they know he is there monitoring activities all-day and sending out the curfew notice at 9 p.m. He then crafts a mock New York Times (e.g., see Appendix L) front page that realistically summarizes the day’s events. Overseeing this PBSim takes a special individual willing to work as hard, or harder than, the students during the week. In my opinion, Dr. Brynen’s involvement in the PBSim world seems to spur on the simulation participants. He models technology use, creativity, humour, and hard work, and the students respond accordingly.

As mentioned in Chapter 4, participants’ dependence on Control was for some, at times a source of frustration. Students in the focus groups reported not having enough information at the beginning of the PBSim. They thought they could have made better decisions if they had more background. Some didn’t realize that they could ask Control for more information. Can a simulation be successful without a strong visible instructor presence? Is it required for learning to take place? This is one of the enduring debates in education. A “sage on the stage” may be enjoyable for students, while being a “guide
from the side” means more work for both the instructor and students and potentially less fun in the absence of a compelling personality. And less fun might mean less engagement which possibly could lead to less learning.

These observations raise the ever-relevant questions: Is there an optimum level of instructor involvement in a simulation? When is there value in stepping away? This study raises these questions as have numerous researchers into simulations (Faria et al., 2009; Salas et al., 2009; Vos, 2014) but doesn’t attempt to answer them. Previous research considers the role of the instructor to be important. However technological innovations mean that an instructor can step away almost completely if necessary in a digital simulation. We can hope that Dr. Brynen’s basic design could stand without him as a necessary force for implementation, or that hopefully basic elements such as the anytime anywhere communication aspects can be adapted to a new simulation.

6.3.2. Gender Differences

Gender differences were not a focus of this study, yet the survey results showed highly significant differences in respondents’ overall experience of the simulation. (Gender differences weren’t discussed in the focus groups or interviews.)

Essentially the results of the student surveys show that men started out anticipating that they wouldn’t be that engaged or have that much fun during the PBSim but then eventually reported higher mean engagement scores than women. Men spent more time than women in trying to figure out how the PBSim worked. Women on the other hand anticipated being fairly engaged and reported that what they experienced matched their expectations reasonably well. That is, they thought they would be reasonably engaged and they were, but at a lower level than the men. Unanswered questions in this research were why does this difference occur and does it have any implications for future simulation design?

We might ask further questions: Are men generally more sceptical or curious than women? Is this an issue in all educational experiences, all simulations, or to just this one specific simulation? We don’t have easy answers and the literature doesn’t offer much help as yet.
At first glance, these results actually seem to contradict earlier findings from Dr. Brynen.

In a June 2013 PAXsims blog post he stated:

In my annual classroom civil war simulation we once asked an array of pre- and post-simulation questions designed to measure self-reported learning outcomes, and found no significant gender-based differences. I’ve also collectively asked the class whether they think gender shaped participant behaviour. Both men and women tend to split 50/50 on the issue, with around half saying there are significant gender-based differences in simulation styles and participation, and about half disagreeing. I really should study it more systematically in the future. (Brynen, 2013c, para. 1)

So Dr. Brynen found no gender differences in self-reported learning outcomes and neither did I. In the post-PBSim survey both men and women overwhelmingly agreed with Question 44 “I learned what I think Dr. Brynen wanted me to learn.” The gender differences lie in their expectations of the experience and their opinion of it afterward. It is not known how the actual marks break down (Dr. Brynen may have determined this).

Dr. Brynen (2013c) looked at some literature when reporting these results on the PAXsims blog. In that post, he refers to the ongoing debates about gaming and stereotyping and then reports findings from an article in the Journal of Political Science Education by Richard Coughlin (2013) on “Gender and Negotiation in Model UN Role-Playing Simulations.”

This article reports on the relationship between gender and participation at the 2010 Southwest Florida Model United Nations (SWFLMUN). Three major findings emerged from this research: (1) Even though more females participated in the SWFLMUN than males, males accounted for most of the speeches and played more decisive roles in the formulation of the committee resolutions; (2) male and female delegates employed similar negotiating styles; and (3) surveys administered to delegates suggest that males and females derived about the same amount of satisfaction from the conference but that males, paradoxically, were more likely to report barriers to participation than females. These results leave the impression that gender is a significant, but unremarked factor in shaping participation. (Brynen, 2013c, para. 3)
So gender was significant in my study and there are indications that it is significant in other role-play simulations. Generally gender differences are probably something to be aware of and pay attention to in simulation design.

In a 2015 poster presentation at the meeting of the Society for Teaching and Learning in Higher Education, Erin Menzies looked at research on women and gaming in on-line learning environments and found that some elements of these games can discourage female participation and there are design elements that can help address this issue.

Current literature shows that gamified learning environments...can discourage female and female-identified students from participation or competition due to lack of familiarity, lack of representation, and perceived gender bias. Additionally, literature examining higher education instructional settings reveals that gamified online learning environments can disproportionately encourage male success and perpetuate stereotypes about female educational successes in spite of measured aptitude. Use of gamification elements like scoreboards, use of “violent language”, and mandatory self-identification can discourage and lead to the disengagement of female learners. Additionally, as males represent a disproportionate number of video gamers in their personal time, they are at a distinct advantage regarding video game mechanics, controls, and familiarity with competition structure. Conversely, some gamification methods, particularly those which encourage or facilitate community building, like discussion forums or other collaborative formats, can encourage female participation in online learning environments, and should be explored further to maximize student successes. (para. 1)

So while the results are not directly comparable, it is good to know that women respond to collaborative opportunities and there are many found in the PBSim. It appears that the more a new simulation is not modelled on traditional computer games the more it has a chance of being designed as “gender neutral.”

From my observations of the PBSim it did appear that men were in more visible roles than women. For example, five out of six of the students in the Government of Brynania were male. Conversely in the NGO aid organizations (where I determined gender by making assumptions about first names), 14 out of 15 roles were held by women, and an NGO representative in the focus groups complained “we weren’t being paid attention to.” I heard more men than women speaking out in the majority of meetings I attended.
While all this might be just reflecting the possibility that the NGO role would classically “not be listened to” it seems like positive educational practice to encourage students to take on less stereotyped roles. The captured, imprisoned and finally freed “maiden” in the PBSim, Zahra al-Zahra, a human rights activist, could perhaps be a “Larry” in the next iteration of the PBSim.

The PBSim has its roots in war games, and Dr. Brynen is a gamer and takes elements of the PBSim from computer games, including war games. Computer games and war games are traditionally male dominated. In my opinion the design of the PBSim does seem to reflect this slightly, in that there is a focus on strategy but not really on individual characters. The roles played are very generic; students are not assigned personality characteristics even though, obviously, personalities will play a huge part in successful negotiation.

6.3.3. Other Demographic Factors

The other demographic factors examined (year of study, academic major, power role, computer game experience) weren’t particularly significant in this study due to the small numbers reporting in these subcategories. There was only a small number of frequent computer game players and a small number of respondents who had power roles. Most of the students responding were enrolled in third- or fourth-year courses and were majoring in a narrow range of subjects with political science and international development being most common. It will be worthwhile to find out what backgrounds in gaming students have before a simulation or if they have specific experience that may apply to a simulation. For example, Dr. Brynen does find out if students have military experience and uses that knowledge in assigning roles.

6.3.4. Weighting of the Peacebuilding Simulation in the Overall Course Grading

As mentioned previously, the PBSim is worth only 10% of the overall course grade. Students in the surveys and the focus groups both mentioned this as did Dr. Brynen. While they all acknowledge that 10% is low, there seems to be an awareness that this low valuation is necessary for the PBSim to work well. Students said that they
felt that if the PBSim was given higher weight there would be even more stress and a focus on getting a good mark and figuring out how to do that. For example, in the focus groups there was some speculation that the number of e-mails posted would contribute to a good mark but no-one knew this for sure. The students said if they did have confirmation of this, the PBSim would become more about posting unnecessary e-mails rather than just being involved more realistically. It then wouldn’t be fair to all of those with differing roles because those with less prominent roles would be trying to take on any actions, just to be noticed.

So generally the emphasis in the PBSim is on nurturing an engaging experience that gives students the freedom (from the pressure of grading) to innovate, be creative and work collaboratively. The paper the students produce at the end of the PBSim for the 10% grade describing their learning during the simulation does not have specific grading criteria attached to it and, as mentioned, the majority of students do well on this portion of the course, according to Dr. Brynen (I was not able to examine these student papers).

6.3.5. Participant Suggestions for Improvements to the PBSim

The following suggestions were taken from the open-ended survey response items and from the focus groups.

6.3.6. Providing Feedback During or at the End of the PBSim

Less than half of the students reported that they received feedback from fellow students and only 23% noted that they received feedback from a professor or professor designate during the PBSim. It may be worthwhile to consider more feedback, particularly at the end. Maybe a half-way check-in would be useful for students who are confused or need more guidance. Some form of peer/team feedback might also be useful.
6.3.7. More Information about the Role Assignments

In the surveys and focus groups, a number of students reported confusion over their roles and what they were “allowed” to do. While Dr. Brynen said it would nice if students weren’t too confused at the beginning, he also remarked, “The amount of time it would take to deconfuse them isn’t worth it because they work it out by themselves in a day or two anyway.” He described another simulation in which he’d participated where every rule was explained to students as being, for him, “the worst game experience ever.” He feels students can actually be overwhelmed with too much information at the beginning so his preference is to let the students work it out over the first few days and ask him questions as need arises.

So it was a deliberate design choice to provide bare-bones background for the students. This decision can be debated. On the one hand, high achieving McGill students had little concrete information to process before the PBSim and this probably contributed to their reported stress. On the other hand, maybe this does mimic real life to some degree. Building relationships was key during the PBSim and it seemed on Day 1 that a number of the individuals in groups didn’t know each other. In this large class of 100 students that is understandable. Perhaps they could have spent the early preparation phase on basic teambuilding. They might have needed some direction from Dr. Brynen on how to do this.

There is no clear and easy answer to the question of how much information to provide at the beginning of a simulation exercise and how much stress and confusion to permit. If students feel they don’t have the basic information to perform their roles, this seems counter-productive and is likely to produce unnecessary anxiety. On the other hand, too much information could lead to a sterile and over-managed environment.

6.3.8. The PBSim as a Support for Learning the Content of POLI 450

While 85% of survey respondents said they learned more about peacebuilding during the simulation, a smaller number, 69%, said they referred to the actual course content during the week. Students’ comments from the focus groups include: “I didn’t really have to refer to the course content,” and “I was disappointed there was no time
during the PBSim for research or referring to course material." However, again students also acknowledged that this was probably close to a real-life situation when decisions need to be made without full information. Dr. Brynen agreed with this and as discussed builds information overload and time pressures into the design to model the real-life environment. The students frequently mentioned that they looked-up information online as for example, for information on their real-life role counterparts, information on United Nations procedures, or how to write a Memorandum of Understanding, rather than referring to any course materials.

6.3.9. More Student Accountability

There were a few instances both in the focus groups and in the survey when students reported that their team partner was not participating or that they hadn’t met everyone on their team face-to-face. A few students reported that it was easy to cover up for non-participants. One student in the focus group said “I never met my ‘other person’.” (She was a country head and she never met or engaged at all with the student she was supposed to work with, her defense minister. The student did let Control know about this lack of communication).

Several other students mentioned the fact that students could get away with not doing much (but that it wasn’t such a big deal with only 10% at stake). Minimal face-to-face contact is possible during the PBSim, and while sometimes that is realistic, it probably is not preferred when richer face-to-face communication is possible. While there did seem to be an element of peer pressure for some (“I felt pressure from my team”), there was no peer review system. This was seen as a weakness by some focus group participants and survey respondents who felt it represented low or no accountability.

One factor which I believe took away from the overall experience was the fact that not everybody put the same level of effort and commitment towards the Sim. While this situation can model real life (not actually meeting everyone on a team face-to-face, having varying levels of project participation), perhaps requiring at least one face-to-face meeting, with a photo to prove it could add some accountability to the experience.
6.4. Personal Observations and Suggestions

The following suggestions are derived from a combination of my observations and the review of the literature.

6.4.1. Preparation for Teamwork Prior to the PBSim

Both Dr. Brynen and the students in the focus groups commented on the large number of personality clashes that occurred in this particular PBSim. As reported in Chapter 4, interpersonal conflict was mentioned by 16/41 respondents or 40% in the post-PBSim survey under the discussion of low points during the PBSim. Typical comments included:

There was a lot of stress and personality clashes.
Competing with the President.
When [Group x] made things personal and engaged in nasty slander against me, both publicly and privately.
A low point was...some of the interactions with other players.

From the number of conflicts mentioned, more preparation for the group work might be advisable, and is suggested in the literature (Kayes et al., 2005; Vos, 2014). Topics to be addressed prior to the start of the PBSim could include: group process, leadership in teams, ground rules for meetings and how decisions will be made. Pre-PBSim meetings with student groups could be required, not optional, with meeting minutes cc’d to Control. A conflict resolution process could be made public.

6.4.2. Encourage Systemic Thinking

While students reported knowing generally more about peacebuilding after the PBSim, there was a good deal of tunnel vision between the various factions, according to Dr. Brynen and my observations. At the end of the PBSim not all students seemed aware of all that had gone on. The NGO actors focused on their issues, leaving the political actors to negotiate. Some of the open-ended survey responses and focus group comments reflected this.
I was so unaware about how the Sim ended—was there a ceasefire? I had no idea!

The literature on business simulations discusses the importance of systemic thinking, encouraging students to be aware of larger systems and the broad business environment in the world (Gregory & Miller, 2014; Washington et al., 2014). While students in the focus groups acknowledged that what happened in the PBSim was like real life, with silos of knowledge developing that reduce overall awareness and understanding, in this undergraduate experience one of the outcomes should be a broader understanding of all of the factions involved by the end of the simulation. This could be accomplished through a debrief. Perhaps there could have been more done in the debrief or post-PBSim assignments. For example, a debrief could include students in small groups talking with others in completely different roles to discuss the challenges they faced. Representatives from each role group could have debriefed with the whole group for a few minutes. Students could have briefly even “tried on” another role in some fashion to answer a question or plan strategy. Students in the focus groups seemed to enjoy talking over the complexities of their roles with each other and they did seem to learn about each other’s roles through this small group discussion.

6.4.3. **Transferability and Adaptability of the PBSim**

Dr. Brynen is on sabbatical in 2015-2016 school-year and POLI 450 is not offered in his absence. Presumably, it would take some time and resources to train another instructor to take over and perhaps there isn’t the time, resources or will to do this in a typical academic environment with no real incentives for collaboration. It does point to the probability that this simulation cannot readily be run by someone else or a team. The TAs do not monitor the PBSim e-mails or give feedback to the students during the PBSim—Dr. Brynen does it all. He did mention that he thought it was too difficult to have more people involved in running the PBSim and that he would lose track of what was going on. So when Dr. Brynen is on leave, no simulation will be run and students will lose out on this opportunity until he returns. Hopefully, in the future some succession planning will be done to ensure this unique experience continues and can be adapted to other political science courses.
With all of the hard work and originality demonstrated in the PBSim is it possible for the basic design elements to be used in another context? Can it even be run by a different political science professor at McGill, much less adapted for use in another discipline by a business instructor such as myself? This is a challenge addressed in this thesis. Fortunately, as previously discussed, some of the learning objectives of the PBSim are similar to those of an undergraduate business curriculum. I have learned a great deal from the PBSim that has the potential for applicability to business undergraduate content. In the following chapter, the design principles determined from the literature and the research into the PBSim are outlined as they could apply to my work at Capilano University as well as being helpful to others designing simulations.
Chapter 7.

Moving Forward with a New Simulation Design

This chapter addresses the last question of this study, namely, can the design criteria evident from the literature review and derived from the structure of the McGill Peacebuilding Simulation be applied to the design of a new blended simulation model applicable to an undergraduate business curriculum?

Based on the research reported in the previous chapters of this thesis I propose that the answer is, “Yes they can.” However, this response has the proviso that a design for a simulation intended for application in an undergraduate business curriculum will need to be tested in a pilot or trial, an activity that is beyond the scope of this study. In the preceding chapters, I have made a number of suggestions about the ways in which the elements of the McGill Peacebuilding Simulation and the literature review could be adapted to provide a design framework for a new business education simulation. Taken together these suggestions do not constitute a detailed recipe for the design of a business simulation but rather offer a description of some of the key general elements that should be taken into consideration in the design process.

7.1. General Considerations for the Design of a Blended Business Simulation

The design elements outlined below as being important to the development of a blended format business simulation could be applied to a course in the context and format of BADM 101, either adding it to the end of the course as a final capstone project, as in POLI 450 at McGill, or more radically transforming a course to a totally immersive format. The suggested design elements presented below are generally applicable
although specific modifications would be needed to adapt to the contexts in which the course would be offered.

While the design elements that I list are all supported by literature cited in the literature review (Chapter 2) and by my observations and analysis of the McGill Peacebuilding Simulation (Chapters 5 and 6) they are stated here in broad terms rather than as specific items in a design recipe.

7.1.1. **A Business Simulation Should Employ Communication Approaches that Blend Physical and Digital Interactions**

This study suggests that a desirable element for the design of a business simulation is to incorporate a blend of communication channels combining a healthy dose of direct face-to-face interactions as well as common digital communication. The PBSim students found this simulation design to be highly engaging with their engagement being expressed in the multiple forms defined by Baldisson et al. (2013). Students reported being engaged in the simulation environment; being engaged in their individual role identities; being engaged in the simulation goals and wanting to achieve progress; and being engaged socially with each other while participating in the PBSim. A simulation achieving this strong evidence of student engagement is surely one to model.

This blended format reduces the effect of limited time in an actual physical classroom while allowing the experience to move back and forth from physical to virtual space. With limited availability of actual classrooms in educational institutions and scheduling restrictions this format makes sense. A simulation can run over 70+ hours per week rather than only in 1.5-hour periods in a physical classroom. The PBSim shows that it is possible to achieve high student engagement and intrinsic motivation with this design. Other research has recommended a blended design (Baldissin et al., 2013; Dickey, 2005; Lean et al., 2014; Tunstall & Lynch, 2010) although usually discussed in the context of providing ample face-to-face time for a class debrief and student discussion after an on-line simulation rather than as a component of the simulation itself.

The widespread student use of mobile technology makes it easy to implement a blended format. This format is also relevant in that it mimics the reality of anytime/anywhere decision-making in the modern world. This ability to successfully
model reality is a key aspect of a good simulation (Léger et al., 2012; Noel & Erskine, 2013; Sanchez, 2013). The blended format also allows for maximum choice and flexibility for students when the simulation includes a variety of activities, just as a regular class might, with opportunities for individual and group exercises in decision-making, problem solving and negotiation. Students will be able to practice their writing, presentation and financial literacy skills. With maximum opportunities for choice of activities during the PBSim due to the blended and open format comes significant opportunities for student control over the experience. Maintaining a high level of user (student) control over outcomes of the simulation will continue to be important and is another key ingredient of an effective simulation as the comprehensive meta-analysis of the simulation literature demonstrated by Gegenfurtner et al. (2014) showed.

I would like to acknowledge here that a blended design is challenging to develop, requiring complex considerations of content delivery, group interactions and desired learning outcomes. Plugging students in to a standardized computer simulation with a focus on financial outcomes, typical of simulations used widely in business classrooms today, is far easier than designing a realistic blended simulation with a wider variety of learning activities and high user control accomplished in an open communication environment. There is probably a reason that it was difficult to find other simulations similar to the PBSim to study. It takes creativity and stamina to develop and implement a simulation in which on-line interactions are monitored virtually non-stop for a week, and where the instructor must produce significant creative content as well as directing the action as Dr. Brynen does in the PBSim.

7.1.2. A Business Simulation Should Manage Student Expectations and Provide Pre-Simulation Coaching on Group Work

Students in a simulation should be provided with advance information about the activity in order to manage expectations and to make sure they have a reasonable picture of the experience. Both the challenging and the fun elements of the simulation should be emphasized. Paying attention to the weighting of the simulation in the overall course assessment will help to ensure it meets instructional goals.
Given that a business simulation should foster both individual and group problem solving, teambuilding and group process skills should be addressed before the simulation begins (Henriksen & Lainema, 2014; Salas et al., 2009; Vos, 2014). The literature shows that while this is helpful to the learning outcomes it is not always done before a simulation begins. As was shown in the PBSim, students reported interpersonal conflict and struggles which could possibly be reduced or avoided with pre-simulation coaching. However, students should be oriented to realize there will be stressful situations and challenges that will require good group communication and effective teamwork. Students should be asked to consider how they will handle group conflict and be advised and helped to establish decision-making protocols.

Strategic planning, an essential business skill, should be supported and encouraged by using class time and assignments beforehand to motivate students to think about human resources needs, communication planning, supply chain management, public relations and marketing and budgeting during the simulation. Short strategic plans could be developed as a team exercise, be signed off by all group members and be submitted for evaluation as a pre-simulation class exercise.

7.1.3. The Design for a Business Simulation Should Consider Pace, Information Provided and Patterns of Experience

The McGill PBSim demonstrated that it is possible to design a simulation with a fast pace and high levels of information and have the students report high levels of engagement even though individual responses to the information load varied widely over the week. There is evidence that academic challenge and complexity are necessary ingredients of a successful simulation (Gibbs & Simpson, 2004; Leigh et al., 2014). It is likely that a fast-paced simulation with plenty of information provided will be more likely to engage students. That said, this design worked with high achieving upper year students at a top Canadian university who had some advance expectations that the PBSim was going to be stressful. I will be adapting this design for first year business students who may find the information overload more challenging than did the McGill students.
7.1.4.  The Simulation Design Should Foster the Development of a Community during the Simulation

Attempting to create community is easier said than done in a commuter school such as Capilano University. Some adaptations of the PBSim communication protocols (which left the students completely free to determine how they interacted) may be required. The students could be actively encouraged to meet up during what would be normal class time, when they know everyone will be available, and ensuring they have the classroom and other dedicated spaces to meet face-to-face. All the little touches in the PBSim such as the flags for the UN actors, the costumes the students sometimes wear, the in jokes and silliness, contribute to community and show evidence of the intrinsic motivation prized by educators (Knowles et al., 2005; Ryan & Deci, 2013).

Where possible, local references and situations can be built into a future simulation. Other Capilano business faculty could contribute to the simulation as well as local business people. Setting the simulation in a local context, using realistic business challenges and incorporating some of the creative flourishes of the PBSim should assist in creating a similar community.

7.1.5.  The Simulation Design Should Build in Support for Systemic Thinking

As demonstrated in the literature review, researchers (Gregory & Miller, 2014; Washington et al., 2014) make a strong case for incorporating systemic thinking into undergraduate business simulations. A simulation can help students with the essential skill of systemic thinking by incorporating as many aspects of the business environment as possible, adding government, non-profit organizations, NGOs, citizen groups and other roles into the decision-making mix. Connecting the simulation to the broad course content as much as possible helps students make the link between their experiences in the simulation and the objectives of the course and their relevance to actual business management practices. Situations could be developed in which students face common challenges such as incorporating sustainability and environmental concerns into business planning while still making a profit. Another scenario could include the challenges of international business practices and ethical supply chain management.
The debrief should focus on the broad global context in which business decisions may often be made.

7.1.6. The Simulation Design Should Incorporate a Thorough Debrief Process

As previously discussed, the literature points to the fact that what happens after the simulation is of critical importance to the overall learning experience (Bellotti et al., 2013; Cook et al., 2013; Gegenfurtner et al., 2014; Henriksen & Lainema, 2014; Sanchez, 2013). Spending time on a comprehensive debrief of the experience is essential. While there is some debate about the appropriate place for a debrief (during the entire experience or just at the end) the literature points to making sure there is an extensive debrief, and most research points to situating it at the end of the experience. Simulations that do not pay attention to a comprehensive student debrief lose a valuable chance for learning. This was one of the few areas in which the PBSim could have been improved and an area to pay attention to in the design of a future business simulation.

7.1.7. The Simulation Should Be Designed for Student Accountability

In order to encourage accountability, something that did seem to be missing in the PBSim according to some student reports, students should complete self-assessments, documenting what they have learned about themselves through the simulation. Students should also complete peer and team assessments before the end of the simulation. The skill of giving useful and neutral feedback to employees is another managerial ability emphasized in an undergraduate business curriculum. Communications can be monitored by the instructor, by the use of special university emails, listservs or online discussions for students to use while in the simulation. Enhancing student accountability should increase individual learning and reduce some of the social loafing that occurred in the McGill Peacebuilding Simulation according to a few student reports.
7.1.8. **The Simulation Design Should Provide Opportunities for Collaboration among Students**

Good business practices will usually require opportunities for strategic partnerships and collaboration as well as competition. According to the literature discussed in Chapter 2, creating opportunities for collaboration within the simulation design may help to engage women in particular. The PBSim design does set up students in group roles for the most part (country governance, rebel groups, NGOs) and asks them to negotiate a peace treaty. A business simulation could also focus on negotiating a business deal, requiring the same kinds of extensive communication and negotiation for success. In this way, collaborative activities could continue to be encouraged in future simulation design.

7.1.9. **The Design Should Attend to the Instructor’s Role**

The operation and success of the simulation will be affected by the extent to which the instructor is seen to be fully committed to and engaged with the simulation (Faria et al., 2009; Salas et al., 2009; Vos, 2014). This was definitely the case in the PBSim. The participants were in awe of Dr. Brynen’s involvement and his involvement seemed to spur their own engagement, according to their reports. Baldisson et al. (2013) didn’t take the instructor role into account in her model of engagement, and much of the research into simulations does not include this as a factor as there is often no overt or defined instructor role in a digital simulation. This study again confirms that an instructor’s involvement can play a critical role in the student experience of a simulation. The debate will continue as to how much an instructor should be involved to maximize learning just as the debate over the instructor role in the traditional classroom continues to be debated.

It may be helpful for an instructor to be in regular and detailed communication with the participants in the simulation as was the case in the PBSim. An instructor can also model the use of a range of media and technologies in his/her activities and resource materials. In order for an instructor to be able to make this kind of intense commitment there will need to have university policies around teaching assignments, etc. that will support such involvement.
The suggestions listed above were derived through the process of the review of literature as described in Chapter 2 and the study of the McGill Peacebuilding Simulation. There is obviously more to be done to create a pilot for a unique business simulation. A critical element that will underpin the design is the development of an effective, credible, and relevant scenario or story as the basis for the simulation. The McGill Peacebuilding Simulation is an excellent example of the importance of an engaging and relevant scenario to the success of the simulation. As mentioned previously, I will plan to spend more time on character development and the personalities of the actors. I will also add specific topics not really dealt with in the PBSim but important to business and commonly discussed in a first-year management course. International business and cultural sensitivity is critical in today’s global business environment so that should definitely be a strong component of the simulation scenario. Financial literacy and basic understanding of business finance is another critical requirement for business undergraduates. Environmental sustainability, social responsibility and ethics are other topics to be incorporated into the pilot simulation, again however, depending on the scenario which grounds the simulation.

As mentioned, the design, development and implementation of a simulation having a large component of real-time, face-to-face communications requires a commitment of time and energy by the faculty member or members responsible for the experience. This has implications for how faculty are given credits for their teaching assignments. A time intensive learning experience such as the PBSim might be credited above the regular credit weighting allocated to teaching a typical undergraduate course. In this regard, university policies around teaching credit, teaching assignments, and the assessment of faculty performance can play critical roles as barriers or enablers. Hopefully, other faculty at Capilano University will be involved in the design and delivery of the simulation. Ideally, it will be a collaborative and sustainable component of the undergraduate business curriculum; an approach that would benefit from effective policies around team teaching.
7.1.10. Consideration of the Differences in Context between Capilano University and McGill University

I began this study with the intent of distilling a set of clear and specific design guidelines based on the general review of literature in Chapter 2 and from my observations of the McGill Peacebuilding Simulation as an example of highly developed, implemented, and field-tested example of a blended simulation. It is important however to note that while my study of the McGill Peacebuilding Simulation has been extremely useful and informative to my thinking about the design and development of a simulation for a undergraduate business management course at Capilano University, there are significant differences between the context of the PBSim and that of BADM101 at Capilano University. First, the PBSim is designed as an important component of an upper level political science course at one of Canada’s premier research universities while BADM101 is an introductory course for first year undergraduate students in the School of Business of a regional university. The students in the PBSim have typically completed approximately three years of studies and have gained experience with academic work in a range of different courses and topics. The students in BADM 101 are at the beginning or early stages of their university careers so they have less experience with some of demands that might be built in to a simulation experience. (Although that said, the PBSim students reported finding it stressful [and fun] and did complain about the fact that they didn’t have time for their other courses which still had demands while they were engaged in the PBSim).

Secondly, the McGill students, who often live in residence on the campus or very near to it, can readily connect physically with their colleagues and arrange to meet on campus or nearby during the PBSim experience. Capilano students commute to the campus for their classes but may not be easily able to meet with other students outside the regular class periods and may only be on campus at scheduled class times. These conditions argue for the use of a blended approach in which activities associated with the simulation occur in physical space in campus classrooms while other components occur online.

So there are obvious differences in contexts which point to potential challenges in implementing a PBSim-like simulation at Capilano University. That said, the
enthusiasm, energy and determination I observed of the students at McGill while engaged in the PBSim are behaviours I observe in my own students at Capilano University when thoroughly engaged in an interesting learning assignment. These are the behaviours that make teaching worthwhile and that most educators love to see in their students. I believe the similarities in these student groups and in learners generally outweigh the differences in context as described above.

The opportunity to design and implement a simulation that will potentially lead to the high levels of student engagement I saw in the PBSim will be both a challenge and a privilege to which to look forward.
Chapter 8.

Study Limitations, Directions for Further Research, and Conclusion

This study has general limitations in that it is an in depth case study of only one event as well as a review of relevant literature. It is also limited by the fact that my knowledge of the McGill Peacebuilding Simulation derives from my role as an observer. The smaller sample size of some of the student groups responding in the survey made it difficult to look at some of the issues such as the power roles the students took on.

This study touches on numerous areas worthy of further research. Gender and identity differences in the simulation experience should be further explored. The links between engagement and stress—termed as the positive pressure paradox—were unexpected and worthy both of a further look into the literature and possible empirical exploration. The influence of the instructor on educational outcomes in the case of the PBSim is an issue touched upon in classic debate. How much does “Control” control? How can an instructor in a simulation activate individual and group activity and creativity while still keeping the focus on the educational objectives?

The amount of information to be sifted through and the pace of the simulation did not receive any particular negative feedback from the students in the 2015 PBSim. However, it is a question as to whether and how their learning was affected by the volume and quality of the information built into the game scenario? Would less extraneous information and a slightly slower pace lead to more focused learning or just result in boredom?

The way the students communicated naturally using technology during the simulation was a real strength and a feature to be emulated in a future simulation design. More research into the most worthwhile ways to prepare for and enhance
communication during a simulation will be valuable to simulation designers. That there was no common pattern of student experience during the simulation is a reminder that what we think would be a natural flow to a learning activity is not necessarily experienced that way by students. More research into student experience while immersed in a simulation should provide interesting information. Given that web-based software specifically designed to support teamwork for collaborative problem solving or group project development is widely available, it is to be expected that students may take advantage of these resources as they explore the game experience. The amount of individual control and self-efficacy within a simulation is also an important variable to be further studied and refined for a business education simulation where both strong individual decision-making and teamwork are required.

The finding that the students “learned about themselves” bears more scrutiny. Questions remain about what did they learn and how might this personal awareness be enhanced and correlated with the course learning objectives? A further step in this research will be to design an evidence-based simulation pilot and test it with a group of business students. While simulation design is complex, time consuming and costly, this study and many others have shown it can be worthwhile.

The McGill Peacebuilding Simulation has numerous interesting and potentially replicable design elements that could be used in other contexts. The findings from my study of the PBSim and the accompanying results from the literature review provide a basis upon which I can design a new evidence-based business simulation. Looking outside the confines of my own discipline was an enriching experience and I am grateful for the opportunity. I encourage others to consider doing the same, so that we continue to strengthen the learning experiences we offer our students.
References


McGill University. (2011, June 1). *Training peace negotiators: McGill’s peacebuilding simulation* [YouTube video]. Available from https://www.youtube.com/watch?v=OrjOaMm2xUY


Appendix A. Approvals from McGill University

10 February 2015

This letter is to indicate my support for Nancy Nowlan’s proposed study “From Brynania to business: designing an evidence-based business education simulation from an exploration of a blended real-time model,” which will examine the Bryanian civil war simulation in my (Winter 2015) POLI 450 class. I have discussed the study and its procedures at length with her and her supervisor, Dr. David Kaufman.

The study, as proposed, appears consistent with the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans. Once approval is received from SFU’s Research Ethics Board, secondary approval will also be obtained from the McGill University REB.

Sincerely,

\[signature\]

Rex Brynen
Professor

http://www.mcgill.ca/politicalscience/faculty/brynen/
Research Ethics Board I
Certificate of Ethical Acceptability of Research Involving Humans

REB File #: 383-0315

Project Title: From Brynania to business: designing an evidence-based education simulation from an exploration of a blended real-time model

Principal Investigator: Nancy Nowlan

Department: Faculty of Education, Simon Fraser University

Status: Ph.D. Student

Supervisor: Prof. Milt McClaren, Simon Fraser University

Approval Period: March 18, 2015 – March 17, 2016

The REB-I reviewed and approved this project by delegated review in accordance with the requirements of the McGill University Policy on the Ethical Conduct of Research Involving Human Participants and the Tri-Council Policy Statement: Ethical Conduct For Research Involving Humans.

Deanna Collin
Ethics Review Administrator, REB I & II

* All research involving human participants requires review on an annual basis. A Request for Renewal form should be submitted 2-3 weeks before the above expiry date.
* When a project has been completed or terminated a Study Closure form must be submitted.
* Should any modification or other unanticipated development occur before the next required review, the REB must be informed and any modification can’t be initiated until approval is received.
Appendix B. Pre-Simulation Survey

Pre-Simulation Survey

Thank you for agreeing to participate in this research on the Peace-Building Simulation (referred to below as “the Sim”). The Survey asks that you respond to a few questions prior to the beginning of the simulation. Your name is not required on the survey form and your responses will be identified only by a code number. In order to participate in the survey you must first agree to the Consent Form. After you indicate your agreement, you will be able to take the pre and post simulation surveys where your responses will be anonymous and cannot be associated with your personal Consent.

The final aggregate survey results will be shared with the course instructor after the conclusion of the course but survey responses cannot be associated with your name. The objective of the research is to explore your experience in this simulation and see what elements could be adapted for future simulation designs.

Please attempt to answer all questions.

1. Major(s)

2. Gender M ___ F _____ Other ______

3. Year of Study U0  U1  U2  U3 other ______

4. Role in the Simulation

5. Please indicate your experience with simulations.

I play computer-based games:


*If you answer the above at #1 or #2, please continue to the next items. If you chose 3 or 4, proceed directly to the next section. (Item 6).*

I have participated in online computer games that involve multiple players simultaneously

I have participated in online computer games that require that I assume a role or identity


6. I have participated in role playing games (not on-line) that required me to assume a role or identity


7. Please state your agreement or disagreement with the following statements using the following scale:

1 – strongly agree  2 – agree  3 – neutral  4 – disagree  5 – strongly disagree

<table>
<thead>
<tr>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I expect to be engaged in my role during the Sim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am looking forward to finding out more about Brynania.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I expect to be challenged to make decisions and take action.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I hope I will have some fun with the other students during the Sim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I expect to do well in the Sim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I expect to work hard during the Sim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I expect the technology we use during the Sim will be manageable.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I expect to get stressed at points during the Sim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I expect the Sim will be a good learning experience.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

8. List one thing, (if anything) you have heard about the Sim?

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

9. What do you hope you will learn in the Sim?

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Thank you for completing the pre-Sim survey!
Appendix C.  Post-Simulation Survey

Post-Simulation Survey

Design Elements in the Simulation

These are questions about the design of the Simulation as a learning experience – how it was structured and the features of the game experiences that were most important to you. Please attempt to answer all questions.

Please indicate to what extent you agree or disagree with the following statements.

1 – Strongly agree  2 – Agree  3 – Neutral  4 – Disagree  5 – Strongly disagree

1. I found the Sim to be “real world” in terms of the issues we addressed and decisions we had to make.  
2. I knew what I had to do throughout the Sim.  
3. I took personal actions and made decisions throughout the Sim.  
4. I used the course content when participating in the Sim.  
5. I received feedback from other students on my performance throughout the Sim.  
6. I received feedback from the professor on my performance throughout the Sim.  
7. I was aware of mistakes I made and could take action to correct them.  
8. I learned from actions and events taking place throughout the Sim.  
9. I had opportunities to express some creativity throughout the Sim.  
10. I thought the rules were clear, acceptable and relevant to the game.  
11. I had personal goals to achieve.
12. I had many opportunities for interactions with my classmates.

13. There was too much teamwork in the Sim.

14. The actions I took in my role mattered in the game.

15. I saw the course material “come to life” during the Sim.

16. There were too many choices for actions during the Sim.

17. The time frame we had to operate in was realistic.

18. There was the right amount of collaboration in the game.

19. There was the right amount of winning/losing in the game.

20. There was too much information given to us that we didn’t need.

21. There was a balance of in person and on-line (e-mails, website development) activities.

22. At the end of the Sim I had an overall understanding of what we were doing and how my role fit into the larger picture.

23. I contributed more during the Sim than in a regular class.

24. Other students appeared to participate more in the Sim than in other classes.

25. The instructor seemed engaged in the Sim.

26. I was engaged throughout the Sim.

27. I was challenged throughout the Sim.

28. I had fun with other students throughout the Sim.

29. I enjoyed finding out about Brynania and how the game worked.
30. I learned a lot during the Sim.  1  2  3  4  5
31. I found the technology was manageable throughout the Sim.  1  2  3  4  5
32. The Sim met my expectations.  1  2  3  4  5
33. Anything else about the Sim that made it work (or not) for you?  1  2  3  4  5

34. Blended design: The simulation was a “blended” design format meaning that you worked both face-to-face with other students and on-line. The simulation could have been accomplished fully face-to-face ("guys and gals sitting around a table") as would have been done pre-technology, or it could be done fully on-line as a computer simulation. What would you prefer?

1. continue blended format
2. fully face-to-face
3. fully on-line
4. don’t know

35. Communication during the simulation: How important were the following to you in the simulation?

1 – Very important  2 – Important  3 – Neutral  4 – Not that Important  5 – Unimportant

Having a physical meeting space.  1  2  3  4  5

Having assigned emails.

Meeting face-to-face in a classroom.

Meeting face-to-face outside the classroom, on or off campus.

Communicating anytime throughout the Sim (not just in class)

Other methods of communication (blogs, Skype, YouTube, Instagram, Snapchat, etc.)
36. Other comments about communication during the simulation? (Point form is fine)

37. Was there a specific time during the simulation when you felt most engaged? Describe what was going on in detail – who were you with, what was happening, why does it stand out for you?

38. Thinking about the Sim and all of its’ characteristics as a learning experience, what did you most appreciate about the Sim and why?

39. What would you change if you were designing the Sim for future student groups?

40. What did you learn about yourself in the Sim?

Thank you for completing the survey!
Appendix D. Sample Field Notes

These are sample field notes Dr. Brynen gives to students in the PBSim.

ICRC currently operates four small clinic programmes in Brynanian government IDP Camp 10 in McGill in the town of Diku (Beta Province), in the capital of Hamraville, and in the nearby IDP Camp 8.

It also operates programmes in Camp 5 in Ruritania.

Camp 10

Conditions in Camp 10 are serious and deteriorating.

Camp 10 was constructed on the northwest outskirts of Mcgildishu to absorb IDPs fleeing fighting in the south. The area consists of a former industrial zone, and is largely unsuitable for a refugee camp.

There are approximately 55,000 people now present in the Camp, almost all of them Brn IDPs who have fled from Zaharian-controlled areas. Many of the refugees have strong anti-Zaharian feelings because of their displacement, and there is substantial support here for OPHUG and other Brn nationalists.

There is little or no infrastructure, apart from a rudimentary system of water distribution piped in from the city and a few small local electrical generators.

Located close to what is now the confrontation line with the PFLZ, camp 10 is subject to frequent shelling and small arms fire. ICRC workers are at risk.

Food supplies and distribution systems are extremely inadequate. Over 65% of children show signs of kwashiorkor and other forms of malnutrition. Estimated average consumption 1700 kCal per day. 30% rate of acute malnutrition. 40% of population with BMI below 18.5.

Refugees are housed in either abandoned buildings or refugee-constructed shelters made of wood and corrugated iron. The latter are particularly inadequate during the rainy season.

There is little local provision of local heal services, forcing most refugees to either use overcrowded clinics in Mcgildishu or forgo medical attention. Outbreaks of cholera are reported in the camp due to poor sanitation, and typhoid and TB have flourished amid the cramped and overcrowded conditions.

A limited amount of primary education is provided by the government teachers a few days each week in makeshift schools. Many teenage boys have joined OPHUG or have been conscripted into the army.

The Brynanian Red Bagel Society also operates a small clinic here.

Diku

Conditions in Diku are serious.

Diku is located in a rich cotton-growing area, consisting of heavily farmed and lightly forested areas.
Diku's prewar population of 42,000 has been more than doubled by an influx of ethnic Brn IDPs from rural, southern areas of Beta province. Unemployment is extremely high. While prewar Diku was moderately well-endowed with water, sanitation, and electrical infrastructure, this has been severely overstretched by the rapid growth of the urban population.

The city is the location of a large government military base, which deters major rebel attacks. However, there have been periodic acts of sabotage and terrorism. Travel to the south is extremely dangerous due to fighting between government and rebel forces, as well as the lack of roads. However, northern road access to the RCB highway is safe and secure.

Because of good road access to the north, Diku has full access to the general Brynanian market in foodstuffs. However, because of high unemployment (especially among poorly skilled rural-to-urban IDPs), many have only limited purchasing power, causing some food insecurity. Estimated average consumption 2800 kCal per day. 5% rate of acute malnutrition. 15% of population with BMI below 18.5.

Local housing is inadequate for the IDP population, leading to the rise of poorly-serviced shantytowns to the north of the town.

Government clinics and the Diku hospital are overburdened from large local population. many IDPs suffer from trauma injuries, or from after-effects of malnutrition of psychosocial stress.

Government primary and secondary schools are functioning, but are crowded and lack materials and trained teachers. Government educational curriculum places heavy emphasis on Brn nationalism.

CARE also has a small aid programme here.

Hamraville

Conditions in Hamraville are moderate to serious.

Hamraville is the capital of Brynania, and its major industrial centre. Food processing and light manufacturing industries predominate, as well as the government and service sector.

Hamraville's prewar population of around 2 million has been swelled by the arrival of perhaps 200,000 (predominately Brn) IDPs from the south. While some of these are found in the government-run Camp 8, most stay with relatives, rent local accommodation, or live in makeshift squatted shelters in the northwest side of the city. Unemployment is high.

Most of Hamraville's existing residential areas have water, sanitation, and electrical connections. However, this is not true of some lower-income areas, and certainly not true of the new squatter areas. Moreover, electrical supply in the country has become unreliable due to the inoperability of the Biku power generation station, resulting in frequent brownout and blackouts. This in turn has affected both other infrastructure provision (such as water supply) as well as the sustainability of local industries.

The heavy deployment of the regime's best security forced means that, with the exception of infrequent terrorism, the capital is generally secure. It is also located at the hub of Brynania's major road system, with good access to both Icasia and Ruritania.
José Hamra International Airport is a relatively modern facility, capable of handling all types of passenger aircraft.

Government policy has assured an adequate supply of food to the capital, although at the expense of outlying regions to a degree. Some recent IDPs exhibit some signs of malnutrition, however, especially those coming from South Alpha and West Beta. High unemployment, inflation, and the lack of resources among many IDPs mean that many poorer families survive on protein-poor diets.

Many IDPs lack adequate housing. Moreover, housing prices have increased substantially due to the influx of population into the capital.

Hamraville has the country's major hospital, plus a network of government and private clinics. These tend to underserve poorer areas of the city and IDP gatherings, however. There have been reports of both TB and polio among IDPs in particular, but the government lacks resources for an immunization programme.

The government provides free universal primary and secondary education. Education materials tend to emphasize traditional gender values and Brn nationalism. Poorer areas tend to be underserved by schools, and IDP gatherings often have no local schools. Many poorer children entire the labour force around ages 14-15.

**Camp 8**

Conditions in Camp 8 are serious.

Camp 8 is a government-established IDP camp located 10km west of Hamraville.

Although initially built for 20,000, the camp has swollen to a shanty-town of more than 75,000. The large majority of these are Brn from south Alpha and Beta provinces. The crime rate is high, and the streets are widely considered unsafe at night.

There is little reliable infrastructure in the area. A sporadic and inadequate electrical supply is supplemented with private generators. Piped water is available, but sanitation and solid waste collection is poor.

The camp is reached by dirt roads leading from the Hamraville-Aiku highway. Access to the capital is generally good, except in bad weather when the roads erode badly.

The Camp is part of the broader food market of the Hamraville area, although prices are typically 20% or so higher. Some signs of early malnutrition are evident among children, especially recent arrivals from the south.

The initial IDP "camp" area has is now supplements by a large shanty-town of IDP-constructed housing, made of scavenged wood, corregated metal, and even cardboard. Few shelters are warm at night, and fire poses an ever-present risk.

Government health workers provide some medical services, but these are grossly inadequate. Poor vaccination coverage among IDPs. Reports of TB and polio, as well as past cholera outbreaks due to poor camp sanitation.

The government operates a few, poorly resources primary schools for IDP children. There is no secondary school in the camp area.
Camp 5
Located 60 km inside Ruritania, south of southern highway. Constructed in 1985 following eruption of civil war in southern Brynania, the is now home to 69,000 persons (one third in environs), more than 10 times its original design capacity.

The camp largely consists of ethnic Zahrians. 50% of the population under 18. 65% of the population female. 20% of estimated 14,000 families are female-headed. Most of the population are from peasant background.

Inadequate water supplies and sanitation has led to fouling of drinking water, resulting in widespread dysentery and risk of cholera. TB and some typhoid reported amid overcrowded conditions. Malaria is endemic. High unemployment. Schools overcrowded.

Approximately 400 armed PFLZ and ZPF guerillas in nd around the camps. there is no Ruritanian security presence in camps, but heavy security presence outside camp limits refugee mobility. Relations between camp population and security forces are often tense.

POWs, Internees, and International Humanitarian Law
Both parties have failed to observe international humanitarian law in their military operations.

Both parties are believed to hold an unknown number of Prisoners of War. These have not been reported to the ICRC as required by the Third Geneva Convention.

The Government of Brynania is believed to hold up to 60,000 civilian internees in camps 7 and 9, under uncertain (but reportedly very adverse) conditions. These camps are closed military zones, under the exclusive jurisdiction of the Brynanian Ministry of Defence.
Appendix E. Course Outlines

Capilano University: BADM 101

<table>
<thead>
<tr>
<th>COURSE NAME:</th>
<th>COURSE NO: BADM 101</th>
</tr>
</thead>
<tbody>
<tr>
<td>TERM:</td>
<td>COURSE CREDITS: 3</td>
</tr>
<tr>
<td>INSTRUCTOR: Nancy Nowlan</td>
<td></td>
</tr>
<tr>
<td>E-mail:</td>
<td>INSTRUCTIONAL HOURS PER WEEK: 3</td>
</tr>
<tr>
<td>Phone:</td>
<td></td>
</tr>
<tr>
<td>Office:</td>
<td></td>
</tr>
</tbody>
</table>

COURSE PREREQUISITES:

Ability to deliver a professional business-related speech. Ability to work as an equal member of a student team.


COURSE WEBSITE (Moodle): http://moodle.capilanou.ca, enrolment key: ploc
The website also contains a link to the textbook website, www.pearsoned.ca/robbins for on-line self-testing (key required).

GENERAL OUTCOMES:

To develop the students’ awareness of the role of management in business today through study of the current business environment. Management concepts, theories and practices will be discussed and applied. The focus will be on three primary management functions of planning, organizing and controlling. One third of the course will be spent on enhancing verbal business presentation skills.

SPECIFIC STUDENT OUTCOMES:

Upon successful completion of this course, students should be able to demonstrate competence in the following abilities and skills:

2 Used with permission.
<table>
<thead>
<tr>
<th>Abilities*</th>
<th>Learning Outcomes</th>
<th>Expected Competency Levels</th>
<th>Manager’s Toolbox</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMUNICATIONS</td>
<td>1. Increase knowledge of own speaking and non-verbal communication skills through self-awareness activities and peer reviews.</td>
<td>1</td>
<td>Self-confidence through self-awareness</td>
</tr>
<tr>
<td></td>
<td>2. Understanding of the importance of audience-centred communication.</td>
<td>2</td>
<td>Adapting communication to intended audience to achieve results.</td>
</tr>
<tr>
<td></td>
<td>3. Increase ability to listen to and analyze other peoples’ communication and to give useful feedback.</td>
<td>2</td>
<td>Feedback skills</td>
</tr>
<tr>
<td></td>
<td>4. Increase ability to learn from feedback and develop speech-making skills</td>
<td>2</td>
<td>Handling criticism professionally.</td>
</tr>
<tr>
<td></td>
<td>5. Write and deliver a persuasive, organized, well-supported work-related speech.</td>
<td>3</td>
<td>Public speaking ability.</td>
</tr>
<tr>
<td></td>
<td>6. Practice using audio-visual aids.</td>
<td>2</td>
<td>Knowledge of presentation aids.</td>
</tr>
<tr>
<td>Analysis and</td>
<td>7. Broad understanding of current managerial roles and functions</td>
<td>2</td>
<td>Familiarity with all managerial functions.</td>
</tr>
<tr>
<td>Decision-Making</td>
<td>8. Recognize, define and apply decision-making and planning models to business issues discussed in class.</td>
<td>2</td>
<td>Decision-making and planning models. Strategic thinking.</td>
</tr>
<tr>
<td></td>
<td>9. Conduct an environmental scan of current international business issues</td>
<td>1</td>
<td>Global focus</td>
</tr>
<tr>
<td></td>
<td>10. Use a collaborative team approach during classroom activities and group assignments</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11. Analyze a business speech for effectiveness of delivery.</td>
<td>2</td>
<td>Analytical focus to improve communication.</td>
</tr>
<tr>
<td></td>
<td>12. Demonstrate an ability to select and apply control systems.</td>
<td>3</td>
<td>Knowledge of control systems.</td>
</tr>
<tr>
<td></td>
<td>13. Apply business case study methods, working with a group to solve a business problem.</td>
<td>2</td>
<td>Analytical focus to improve business decision-making</td>
</tr>
<tr>
<td>Social Interaction</td>
<td>14. Awareness of key elements of successful meetings</td>
<td>2</td>
<td>Leading a meeting</td>
</tr>
<tr>
<td>Abilities*</td>
<td>Learning Outcomes</td>
<td>Expected Competency Levels</td>
<td>Manager’s Toolbox</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------</td>
<td>---------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>15.</td>
<td>Successful group work in class and in assignments</td>
<td>2</td>
<td>Team work and delegation</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Brainstorming</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Creative problem-solving</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Evaluating group performance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Taking corrective action</td>
</tr>
<tr>
<td>16.</td>
<td>Practice communicating change in a class simulation.</td>
<td>2</td>
<td>Change management fundamentals</td>
</tr>
<tr>
<td>Citizenship and Global Perspectives</td>
<td>17. Awareness of ethics in business and practice making ethical choices</td>
<td>2</td>
<td>Understanding of the current business climate</td>
</tr>
<tr>
<td></td>
<td>18. Awareness of diversity in doing business</td>
<td>2</td>
<td>Diversity awareness</td>
</tr>
</tbody>
</table>

*See Faculty of Business – Our Commitment to Assessment and Constructive Feedback for description of the six “Levels” of Comprehension.

**EVALUATION PROFILE:**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>% of Final Grade</th>
<th>Individual/Group</th>
<th>Communication</th>
<th>Analysis &amp; Decision Making</th>
<th>Social Interaction</th>
<th>Citizenship &amp; Global Perspective</th>
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</thead>
<tbody>
<tr>
<td>Midterm Exam</td>
<td>25%</td>
<td>I</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Final Exam</td>
<td>20%</td>
<td>I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presentation Skills</td>
<td>30%</td>
<td>I and G</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Readiness Assessments, questions</td>
<td>5%</td>
<td>I and G</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simulation and presentation</td>
<td>20%</td>
<td>G</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
<td></td>
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**COURSE CONTENT/SCHEDULE:**

<table>
<thead>
<tr>
<th>Lectures</th>
<th>Topic</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEEK 1</td>
<td>Introduction to Management and Organizations</td>
<td>Chapter 1, Supplement</td>
</tr>
<tr>
<td>Jan 6-10</td>
<td>+ Supplement 1, Small and Medium Sized Enterprises and Organizations</td>
<td></td>
</tr>
<tr>
<td>WEEK 2</td>
<td>Public Speaking – Coaching Groups</td>
<td>Making it Stick chapter</td>
</tr>
<tr>
<td>Jan 13-17</td>
<td>Presentation Skills - Storytelling</td>
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</tr>
<tr>
<td>WEEK 3</td>
<td>Public Speaking preparation, Using visuals</td>
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<td>Jan 20-24</td>
<td>Outline due</td>
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<td>WEEK 4</td>
<td>Public speaking - Stories</td>
<td>Robbins</td>
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<td>Jan 27-31</td>
<td>Environmental Constraints (and opportunities) for Managers</td>
<td>Chapter 2</td>
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<td>WEEK 5</td>
<td>1-Readiness Assessment for Chapter 3 (1%)</td>
<td>Chapter 3</td>
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<td>Feb 3-7</td>
<td>Review online M/C and T/F chapter questions</td>
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<td></td>
<td>Planning and Strategic Management</td>
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<td>Feb 10-14</td>
<td>Reading Week</td>
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<td>Lectures</td>
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<td>Chapter</td>
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<td>---------------</td>
<td>--------------------------------------------</td>
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<tr>
<td>WEEK 6</td>
<td>2-Readiness Assessment for Chapter 4 (1%)</td>
<td>Robbins Chapter 4</td>
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<td>Feb 17-21</td>
<td>Review on-line M/C and T/F questions</td>
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<td>Decision-Making</td>
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<td>WEEK 7</td>
<td>3-Readiness Assessment for Chapter 5 (1%)</td>
<td>Robbins Chapter 5</td>
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<td>Feb 24-28</td>
<td>Review on-line M/C and T/F questions</td>
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<td>Organizational Structure and Design</td>
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<td>WEEK 8</td>
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<td>Mar 3-7</td>
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<td>WEEK 9</td>
<td>4-Readiness Assessment for Chapter 6 (1%)</td>
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<td>Mar 10-14</td>
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<tr>
<td>WEEK 10</td>
<td>5-Readiness Assessment for Chapter 8 (1%)</td>
<td>Chapter 8</td>
</tr>
<tr>
<td>Mar 17-21</td>
<td>Foundations of Control</td>
<td></td>
</tr>
<tr>
<td>WEEK 11</td>
<td>Managing Change</td>
<td>Chapter 9</td>
</tr>
<tr>
<td>Mar 24-28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEEK 12</td>
<td>Managing Responsibly and Ethically</td>
<td>Chapter 10</td>
</tr>
<tr>
<td>Mar 31-April 4</td>
<td>Production Simulation</td>
<td></td>
</tr>
<tr>
<td>WEEK 13</td>
<td>Final Presentation preparation</td>
<td>20%</td>
</tr>
<tr>
<td>Apr 7-11</td>
<td>Final presentations</td>
<td></td>
</tr>
<tr>
<td>Apr 14-25</td>
<td>Final Exam period</td>
<td></td>
</tr>
</tbody>
</table>

**UNIVERSITY POLICIES**

Capilano University has policies on Academic Appeals (including appeal of final grades), Student Conduct, Cheating and Plagiarism, Academic Probation and other educational issues. Copies of these and other policies are distributed to all students during the registration processes and are available in the University Calendar and in the Library.

In addition to the policies of the university, the Faculty of Business has the following policies governing the management of our classes and curriculum.

**FACULTY OF BUSINESS POLICIES**

**Attendance:** Regular attendance and punctuality are both essential and expected due to the nature and format of the course materials.

**Cheating and Plagiarism:** Cheating is an act of deceit, fraud, distortion of the truth, or improper use of another person’s effort to obtain an academic advantage. Cheating includes permitting another person to use one’s work as their own. Plagiarism is the presentation of another person’s work or ideas as if they were one’s own. Plagiarism is both dishonest and a rejection of the principles of scholarship. Information about how to avoid plagiarism by proper documentation of sources is available in the Library, the Writing Centre and is published in the University Calendar.
Penalties for Cheating and Plagiarism:
A grade of '0' for an examination, quiz or assignment or 'F' for the course may be
assigned if cheating or plagiarism has taken place. First incidents deemed by
the instructor to be particularly serious or second or subsequent incidents of
cheating and plagiarism will be dealt with under the provisions of the University
Policy on Cheating and Plagiarism (See the University Calendar). All students
should familiarize themselves with the University Policy on Cheating and
Plagiarism as such behaviour can result in suspension from the University.

Incomplete Grades:
Incomplete grades will not be given unless special arrangements have been
made with the instructor prior to the date set by University Administration.

Professional Behaviour:
Students must demonstrate a professional attitude and behaviour toward work,
fellow students and their instructors. Each student should demonstrate reliability,
respect for and co-operation with colleagues. A willingness to work calmly and
courteously under difficult conditions as well as a determination to achieve first-
class work while meeting deadlines is necessary in the Business Faculty.
Students should have respect for equipment and systems. Students should
display a constructive response to criticism.

Copyright Policy:
Students are expected to familiarize themselves with and abide by the
University’s Copyright Policy. The University’s Copyright Policy is published in
the University Calendar.

PROGRAM POLICIES – Capilano School of Business

In addition to the Capilano University and Faculty of Business policies, the Capilano School of
Business has the following policies governing the management of our classes and curriculum.

Missed Exams and Quizzes:
Missed exams or quizzes will receive a grade of "0" unless PRIOR
arrangements (wherever possible) are made with the instructor.
Permission to make up an exam will only be given in extraordinary
situations such as illness of the student or the death of a close family
member. A doctor’s certificate, or other proof supporting the reason for
the absence, may be required.

English Usage: All assignments are marked for correct English usage, proofreading and
formatting.

In addition to Capilano University, Faculty of Business, and the Capilano School of Business
policies, the following policies govern the management of this class and its curriculum.
Grading Profile:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>90-100%</td>
</tr>
<tr>
<td>A</td>
<td>85-89</td>
</tr>
<tr>
<td>A-</td>
<td>80-84</td>
</tr>
<tr>
<td>B+</td>
<td>77-79</td>
</tr>
<tr>
<td>B</td>
<td>73-76</td>
</tr>
<tr>
<td>C+</td>
<td>67-69</td>
</tr>
<tr>
<td>C</td>
<td>63-66</td>
</tr>
<tr>
<td>C-</td>
<td>60-62</td>
</tr>
<tr>
<td>D</td>
<td>50-59</td>
</tr>
<tr>
<td>F</td>
<td>Below 50%</td>
</tr>
</tbody>
</table>

Assignments: Homework assignments are due at the start of class on the due date unless otherwise advised by your instructor. Late assignments will only be accepted if prior approval for a late submission date has been given by the instructor.

Programmable Tools: Please note the use of programmable items such as calculators, dictionaries etc. is forbidden during tests, quizzes, and exams. Cell phones are not to be brought to any test, quiz, or exam.
CAPILANO UNIVERSITY VISION, MISSION and GOALS

UNIVERSITY VISION
Students are drawn to our dynamic and unique programs, passionate faculty, welcoming staff, and close-knit learning environment; graduates are independent learners, thinkers, and doers actively contributing to their communities.

UNIVERSITY MISSION STATEMENT
We are a teaching-focused university offering a wide range of programs and services that enable students to succeed in their current studies, in their ongoing education, in their chosen careers, in their lifelong pursuit of knowledge, and in their contribution as responsible citizens in a rapidly changing and diverse global community.

UNIVERSITY GOALS
Arising from the Mission statement, the Institutional Goals are broadly defined as the general areas of success that are desired for all students. From the Mission, the Institutional Goals are:

- Student success in ongoing education
- Student success in chosen career
- Student success in lifelong pursuit of knowledge
- Student success in contributing as responsible citizens in a rapidly changing and diverse global community

In order to support student success in these areas, the institution has identified seven broad learning outcomes for students in all programs.

These institutional student learning outcomes are:

1. Self-directed learning, awareness, and responsibility
2. Up-to-date information gathering and research skills
3. Communication skills
4. Quantitative reasoning ability
5. Group and social interaction skills
6. Creative, critical, and analytical thinking skills
7. Community/global consciousness and responsibility
FACULTY OF BUSINESS

MISSION STATEMENT

To provide students with the necessary skills and abilities to be immediately effective in their employment or further studies, and to possess a sound basis for future progression in their chosen career, in the lifelong pursuit of knowledge, and in their contribution as responsible citizens in a rapidly changing and diverse global community.

OUR COMMITMENT TO SKILLS AND ABILITIES

The Faculty of Business, through the delivery of this course, is committed to the development of skills so that students can perform the tasks of this discipline in an efficient and effective way.

In addition, through the delivery of all courses, the Faculty is committed to the development of core ‘abilities’ that will prepare students for future career progression in a chosen field. A well rounded graduate, in addition to being able to perform certain tasks, will have the following CAPabilities:

<table>
<thead>
<tr>
<th>CAPability</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>Selects, uses and integrates communication skills to develop informative, explanatory and persuasive presentations to a variety of audiences using oral and written communication and language, quantitative and technological literacy.</td>
</tr>
<tr>
<td>Analysis and Decision-Making</td>
<td>Brings a unique perspective to the analysis of organizational issues through systematic thinking and the application and adaptation of frameworks and tools that assist decision-making</td>
</tr>
<tr>
<td>Social Interaction</td>
<td>Uses appropriate interpersonal and group theory to deal with interpersonal, team, stakeholder and professional situations to inform, persuade and influence.</td>
</tr>
<tr>
<td>Citizenship and Global Perspective</td>
<td>Understands corporate social responsibility within organizational contexts and the social role and impacts of organizations. Integrates personal, professional and community values in a decision-making context as a member of an organization. Works effectively with interdependence and diversity by framing issues in the broader global context, understanding the social and cultural roots of business, governments and other organizations and by providing managerial support as part of a global strategy.</td>
</tr>
</tbody>
</table>
OUR COMMITMENT TO ASSESSMENT AND CONSTRUCTIVE FEEDBACK

The Faculty of Business is committed to providing feedback that rewards excellence and motivates personal development. We use a mixture of personal, peer and professional assessment so that students have a diverse view of their progress in skills and abilities development. It is important to use feedback to enhance the quality of learning.

The assessment model is designed to give a fair reflection of the letter grade earned, as well as a road map for personal skill and ability development. For each skill and ability in the course students will be assessed as to the level of comprehension demonstrated. Grades are a function of how students have met course expectations as to those levels of comprehension.

SIX “LEVELS” of comprehension

<table>
<thead>
<tr>
<th>KNOWLEDGE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Recognize</td>
<td>Be able to identify the components of a framework or tool.</td>
</tr>
<tr>
<td>2. Define</td>
<td>Be able to describe the aspects of the components of the framework or tool.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APPLICATION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Use</td>
<td>Be able to manipulate the framework or tool to cause a result.</td>
</tr>
<tr>
<td>4. Interpret Results</td>
<td>To understand the result of the manipulation in a meaningful way.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>JUDGMENT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Situational Use</td>
<td>To be able to identify situations where the framework or tool should be applied, and then apply the framework or tool, including using the results effectively.</td>
</tr>
<tr>
<td>6. Adaptation</td>
<td>To be able to creatively adapt the framework or tool such that its use will be maximized in a given situation.</td>
</tr>
</tbody>
</table>
[PROGRAM NAME ABT, CSB, LAW, CMNS, PADM]

MISSION STATEMENT

To be developed by program areas

PROGRAM OUTCOMES

Once approved by senate and the board, there will be 7 institutional outcomes that will become the framework for defining measured outcomes for programs that must feed in to the accreditation report. Program areas will develop program outcomes that encompass the institutional learning outcomes.

These institutional student learning outcomes are:

1. Self-directed learning, awareness, and responsibility
2. Up-to-date information gathering and research skills
3. Communication skills
4. Quantitative reasoning ability
5. Group and social interaction skills
6. Creative, critical, and analytical thinking skills
7. Community/global consciousness and responsibility
Peacebuilding and Post-Conflict Reconstruction

INSTRUCTOR: Prof. Rex Brynen  
phone: 514 398-4400 x00634  
email: rex.brynen@mcgill.ca

CLASS HOURS: MWF 10h35-11h25 (LEA 232)

OFFICE HOURS: Mondays, 14h30-15h30, Wednesdays 12h00-13h00 (3465 Peel), or by appointment.

WEBPAGE: http://www.brynnia.net (simulation)

Course Description
This course offers an examination of transitions from civil war to peace, and the role of external actors (international organizations, bilateral donors, non-governmental organizations) in support of such transitions. Topics will include the dilemmas of humanitarian relief, peacekeeping operations, refugees, the demobilization of ex-combatants, transitional elections, and the politics of socioeconomic reconstruction.

Prerequisites
Students are required to have taken at least one previous course in comparative politics. Previous coursework in international relations is strongly recommended.

Course Texts
There is no textbook for the course. Instead, emphasis is on primary source materials, of the sort used by peacebuilding practitioners:


All required readings are available online. Students must also participate regularly in class discussions via myCourses, and read any additional required material posted online there.
Course Requirements and Grading

Course participation (myCourses, up to March 23) 10%
Team research paper (6-12,000 words, due March 23) 30%
Simulation participation 10%
Simulation debriefing (1250 words maximum, due April 8) 10%
Final examination (university-scheduled) 40%

Course participation: This will be largely based on your myCourses activity up until midnight on March 23. All students are expected to offer at least three substantial comments on the course discussion list during the term to earn a passing grade—greater participation will result in a higher grade. Please do not post more than three items of any sort per week, or the course discussion board will rapidly become overloaded. Other opportunities to earn course participation credits will be announced in class or posted on myCourses.

Simulation participation: This grade will be based on the accuracy, energy, and skill with which you performed your simulation role. Students have the option of NOT taking part in the simulation; in this case, alternative assignments will be arranged. You must notify the instructor before the end of January if you wish to do this.

Simulation debriefing: This will consist of 4-5 pages, identifying the major lessons to be learned from the main simulation exercise. It is due at the start of class on April 8—late debriefs will not be accepted without documented medical (or similar) excuse. A simulation blog may be substituted for the debrief.

Team research paper: In groups of 2-4, students will prepare a 6-12,000 word comparative policy assessment of a key dimension of international peacebuilding/reconstruction efforts. Unless otherwise approved, the paper should: i) provide an overview of the issue, ii) identify the policy mechanisms utilized by the international community in the context of 3-5 different transitional countries; iii) assess the utility of these instruments, and the factors shaping policy effectiveness; iv) assess the overall success or failure of international engagement in each case, and suggests lessons to be learned. If a group wishes to (and has adequate skills), the project may be completed in the form of a website rather than a conventional research paper. All topics must be approved in advance by email by the course instructor by 15 February. The research paper is due in class on March 23, or may be submitted late on April 8 (with a penalty of -2.5/30). It may not be submitted after this second date without a documented medical (or similar) excuse. If you wish to write a 5,000 word solo paper instead you may do so, but you will receive an additional -1.5/30 penalty for not being part of a group.

Students may also, instead of a research paper, design a peacebuilding simulation. Additional details on this will be provided in class.

Final exam: a university-scheduled final exam will address all material covered by the class.

Important Fine Print

Please note that this course is extremely demanding in the latter part of the term. Good study/research habits and time management skills are essential. Students are STRONGLY advised to complete their team research projects prior to the start of the course simulation. Also, keep on top of the reading—there is more of it than usual.

In accord with McGill University’s Charter of Students’ Rights, students in this course have the right to submit in English or in French any written work that is to be graded.
Also, it is important to note that incidents of plagiarism will be dealt with severely. If you are unsure of what plagiarism is or how to identify your sources, ask your teaching assistant. McGill University VALUES ACADEMIC INTEGRITY. THEREFORE ALL STUDENTS MUST UNDERSTAND THE MEANING AND CONSEQUENCES OF CHEATING, PLAGIARISM AND OTHER ACADEMIC OFFENCES UNDER THE CODE OF STUDENT CONDUCT AND DISCIPLINARY PROCEDURES (see www.mcgill.ca/integrity for more information).

**Lectures** (all dates approximate)

1. **Introduction** (January 5, 7, 9)
   - what is peacebuilding?
   - civil conflict in the 20th and 21st centuries
   - actors and phases
   - conflict analysis


2. **Conflict Prevention** (January 12, 14)
   - early warning
   - instruments for conflict prevention


3. **Dilemmas of humanitarian relief** (January 16, 19, 21)
   - aid and conflict
   - operational challenges

   *Inside the Haiti Earthquake* (online game), at http://www.insidedisaster.com/experience/Main.html

4. **Mediation and negotiation** (January 23, 26, 28)
   - conflict mediation
   - SRSGs and other mediators
   - peace agreements

   UN OCHA, Guidelines on Humanitarian Negotiations with Armed Groups (2006), Summary and Quick Reference (+skim remainder).
5. Peacekeeping and stabilization (January 30, February 2, 4)
   • peacekeeping and stabilization operations
   • counterinsurgency


6. Challenges of coordination (February 6, 9)
   • issues and architectures
   • local ownership


7. Refugees (February 11, 13)
   • basic needs
   • the challenge of refugee-warriors
   • resettlement and repatriation

UNHCR, Protecting Refugees: The Role of UNHCR (2012).

8. Demilitarization (February 16, 18, 20)
   • demobilization and reintegration of ex-combatants
   • security sector reform
   • land mines and UXO


9. Governance, democratization and human rights (February 23, 25, 27)
   • political transitions and the role of the international community
   • transitional justice: human rights, war crimes, truth commissions, and the ICC
   • building good governance

UN DPKO and DFS, Civil Affairs Handbook (2012), Chapter 11.
Reading break (March 2-6)

10. Simulation: Prebriefing (March 9)

11. Aid, fragility, and post-conflict development (March 11, 13, 16)
   - overview/needs
   - institution-building, public sector support
   - role of IFIs, NGOs
   - PCI exercise

   OECD DAC, Evaluating Peacebuilding Activities in Settings of Conflict and Fragility (2012),
   Chapter 2.
   International Dialogue on Statebuilding and Peacebuilding, A New Deal for Engagement in
   Fragile States (2011).
   Chapter 5 (transforming institutions).

12. Gender and peacebuilding (video lecture—no classes on March 18 or 20)

   UNDP, Gender Approaches in Conflict and Post-Conflict Situations (2001).

13. Open topic (March 23)

14. Simulation: The civil war in Brynania (March 25 – April 1)
   - no classes
   - simulation website at http://www.brynania.net/

15. Simulation: Debriefing (April 8, 10)

16. Conclusion (April 13, 14)
Appendix F. Study Survey: Participant Consent Form

Consent Form for Participation in Study Survey

From Brynania to Business: Designing an Evidence-Based Education Simulation from an Exploration of a Blended Real-Time Model

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Research Supervisor</th>
</tr>
</thead>
</table>
| Nancy Nowlan, EdD Candidate  
Faculty of Education  
Simon Fraser University | Dr. Milton McClaren  
Faculty of Education  
Simon Fraser University |

My name is Nancy Nowlan. I am an EdD candidate in the Faculty of Education, at Simon Fraser University, located in Burnaby, B.C. I will be the principal investigator in the proposed research which I am conducting for my doctoral thesis. The survey and interview results collected during the research will be analyzed, described, and summarized for the thesis. My supervisor, Dr. Milton McClaren and I will be the only people to access the raw data collected.

Study Purpose
You are being invited to take part in this research study because you are a student taking Political Science 450 with Dr. Rex Brynen at McGill University in Spring 2015 and will be participating in a simulation game, the Peacebuilding Simulation, as an experience in the course. The design aspects of this simulation are being studied to determine the elements that resonate with you, that are important and should be replicated in future simulations. The study will help me learn more about student engagement in simulations so that similar learning experiences can be developed or enhanced in the future. The end product of the research will be a design for a new educational simulation that I will pilot with undergraduate business courses at Capilano University in North Vancouver, B.C. where I am a faculty member. No ethics review is required from Capilano University as I am completing the study as a Simon Fraser University graduate student.

Voluntary Participation
Your participation is completely voluntary. You may refuse to participate at all or withdraw at any time. Your instructor will not have any information on your participation in the study, and will only see total results and summaries of data after the Political Science 450 course is completed. In addition, as the Principal Investigator I may at times be observing at certain points during the simulation. The data that I gather through my observations will not contribute in any way to your course evaluation and will focus on the operation and design features of the simulation.

Study Procedures
If you agree to participate in the study:

You will be asked to complete a confidential survey before the Simulation begins and a further survey at the end of the Simulation. It is expected that the pre-Simulation survey will take approximately 5-10 minutes to complete while the post-Simulation survey will require approximately 10-20 minutes. You will be asked to use a code identifier so we can match up your pre and post surveys. At no time will you indicate your real name but we will ask basic demographic information such as your gender and program of study.

Page 1 of 3  Version 2015 March 12
Potential Risks
I am required to inform you of any risks you might take in participating in this research. I do not consider that there is any level of risk in your participation greater than the risks associated with your regular activities at the university.

Potential Benefits
There are no specific personal benefits associated with your participation in this study, beyond the opportunity to take a few moments to reflect on the Simulation game experience. This study will hopefully aid in designing better simulations in the future, so that other students have the opportunity to experience effective evidence-based simulation design. The study may encourage others to design simulation experiences for their courses by applying the design criteria that are developed from this research.

Payment
You will not be paid for participating in this study. Participants who complete the pre- and post-Simulation surveys will receive a $5 Second Cup gift certificate. You will receive this gift certificate even if you withdraw from the study. Those students participating in the focus group will also receive a pizza lunch or dinner.

Confidentiality
All documents you complete in the course of this research, including this Consent Form will be kept by me in a locked drawer in my office. You will access the surveys under a code identifier. Any personal information or research data that might allow personal identifications, will be stored on a password protected, encrypted hard drive, which will be stored in a locked cabinet in my personal office when not in use in the research process. On completion of the research and submission of the thesis, the contents of the hard drive will be securely erased.

A few general photographs may be taken during the simulation which may be used in future presentations of the research. No individual students will be identified and these photographs will be kept on the same hard drive as above.

The server for the survey you are taking is hosted by Google Docs in the U.S. so there are associated limits to the confidentiality that may be maintained.

Withdrawal
You may withdraw from the study at any time without giving a reason. As the survey data collected is anonymous it cannot be removed if you decide to withdraw from the study after completing the survey.

Organizational Permission
Dr. Rex Brynen, McGill University, has given permission for this study to be conducted with his students. At no time will he see any individual results of this survey.

Study Results
The results of this study will be reported in a graduate thesis and may also be published in journal articles and books or referenced in presentations at professional and academic meetings. The completed thesis will be available from the Simon Fraser Library.
Contact for Information about the Study
Please contact Nancy Nowlan (contact information) at any time for further information on the study. You may also contact my research supervisor, Dr. Milton McClaren, at (contact information).

Contact for Complaints
If you have any concerns about your rights as a research subject and/or your experiences while participating in this study you may contact Dr. Jeff Toward, Director, Office of Research Ethics at (contact information) or 778-782-6593.

Future Use of Participant Data
No future use of your personal information/data is anticipated.

Consent and Signature
Taking part in this study is entirely voluntary. You have the right to refuse to participate. If you decide to participate you may choose to change your mind and withdraw at any time without giving a reason and without any negative impact on you.

Your signature below indicates that you have read the information on this form, that you have consented to participate in the study and that you have received/retained a signed copy of this Consent form for your records.

Participant Signature ___________________________ Date __________

Printed Name of Participant ___________________________

Principal Researcher

Printed Name ___________________________ email address ___________________________

Signature of the Principal Researcher ___________________________ Date __________
Appendix G. Focus Group Questions

Questions for focus groups of 8-10 students:
1. How would you describe your experience in the Simulation?
2. What aspects of the Simulation did you most appreciate about the simulation and why?
3. What would you change if you were designing the simulation for future student groups?
4. Other comments you would like to make about the simulation?
Appendix H. Focus Groups: Participant Consent Form

Consent Form for Participation in Focus Groups

From Brynania to Business: Designing an Evidence-Based Education Simulation from an Exploration of a Blended Real-Time Model

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Research Supervisor</th>
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</table>
| Nancy Nowlan, EdD Candidate  
Faculty of Education  
Simon Fraser University | Dr. Milton McClaren  
Faculty of Education  
Simon Fraser University |

My name is Nancy Nowlan. I am an EdD candidate in the Faculty of Education, at Simon Fraser University, located in Burnaby, B.C. I will be the principal investigator in the proposed research which I am conducting for my doctoral thesis. The survey and focus group results collected during the research will be analyzed, described, and summarized for the thesis. My supervisor, Dr. Milton McClaren and I will be the only people to access the raw data collected.

Study Purpose
You are being invited to take part in this research study because you are a student taking Political Science 450 with Dr. Rex Brynen at McGill University in Spring 2015 and will be participating in a simulation game, the Peacebuilding Simulation, as an experience in the course. The design aspects of this simulation are being studied to determine the elements that resonate with you, that are important and should be replicated in future simulations. The study will help me to learn more about student engagement in simulations so that similar learning experiences can be developed or enhanced in the future. The end product of the research will be a design for a new educational simulation that I will pilot with undergraduate business courses at Capilano University in North Vancouver, B.C., where I am a faculty member. No ethics review is required by Capilano University as I am completing this study solely as a Simon Fraser University student.

Voluntary Participation
Your participation is completely voluntary. You may refuse to participate at all or withdraw at any time. Your instructor will not have any information on your participation in the study, and will only see total results and summaries of data after the Political Science 450 course is completed.

Study Procedures - Focus Group
If you agree to participate in the study:
You will be asked to participate in a one hour focus group, with 6-8 students in the course, in a meeting room on the McGill campus. During the focus groups the Principal Researcher will ask you to talk about your experience in the Simulation you have just experienced. The sessions will be audio-recorded and transcribed by the Principal Researcher. A few general photographs, not identifying particular students may be taken for future presentations of the research. At no time will you indicate your real name but we will ask basic demographic information such as your gender and program of study.
Potential Risks
I am required to inform you of any risks you might take in participating in this research. I do not consider that there is any level of risk in your participation greater than the risks associated with your regular activities at the university.

Potential Benefits
There are no specific personal benefits associated with your participation in this study, beyond the opportunity to take a few moments to reflect on the Simulation game experience. This study will hopefully aid in designing better simulations in the future, so that other students have the opportunity to experience effective evidence-based simulation design. The study may encourage others to design simulation experiences for their courses by applying the design criteria that are developed from this research.

Payment
You will not be paid for participating in this study. Those students participating in the focus group will receive a pizza lunch or dinner and a $5 Second Cup gift certificate.

Confidentiality
We encourage participants not to discuss the content of the focus groups to people outside the group; however we can’t control what participants do with the information discussed.

All documents you complete in the course of this research, including this Consent Form will be kept by me in a locked drawer in my office. Any personal information or research data that might allow personal identifications, will be stored on a password protected, encrypted hard drive, which will be stored in a locked cabinet in my personal office when not in use in the research process. On completion of the research and submission of the thesis, the contents of the hard drive will be securely erased.

 Withdrawal
You may withdraw from the study at any time, without giving reasons. If you decide to withdraw any data that contains information that might identify you will be erased or physically destroyed unless you give specific permission for it to be retained in the research database.

Organizational Permission
Dr. Rex Brynen, McGill University, has given permission for this study to be conducted with his students. At no time will he see any individual results or know who is participating in the focus groups.

Study Results
The results of this study will be reported in a graduate thesis and may also be published in journal articles and books or referenced in presentations at professional and academic meetings. The completed thesis will be available from the Simon Fraser Library.

Contact for Information about the Study
Please contact Nancy Nowlan (nnowlan@sfu.ca, 604-291-3545), at any time for further information on the study. You may also contact my research supervisor, Dr. Milton McClaren, at mcmclaren@sfu.ca.
Contact for Complaints
If you have any concerns about your rights as a research subject and/or your experiences while participating in this study you may contact Dr. Jeff Toward, Director, Office of Research Ethics at (604) 220-8200 or 778-782-6593.

Future Use of Participant Data
No future use of your personal information/data is anticipated.

Consent and Signature
Taking part in this study is entirely voluntary. You have the right to refuse to participate. If you decide to participate you may choose to change your mind and withdraw at any time without giving a reason and without any negative impact on you.

Your signature below indicates that you have read the information on this form, that you have consented to participate in the study and that you have received/retained a signed copy of this Consent form for your records.

Participant Signature ___________________________ Date __________

Printed Name of Participant ___________________________

Principal Researcher

Printed Name ___________________________ email address ___________________________

Signature of the Principal Researcher ___________________________ Date __________
Appendix I. Annotated Survey Questions

Pre-Survey

Annotated Version of Pre-Sim Survey
(Annotations in blue)

Pre-Simulation Survey

Thank you for agreeing to participate in this research on the Peace-Building Simulation (referred to below as "the Sim"). The Survey asks that you respond to a few questions prior to the beginning of the simulation. Your name is not required on the survey form and your responses will be identified only by a code number. In order to participate in the survey you must first agree to the Consent Form. After you indicate your agreement, you will be able to take the pre and post simulation surveys where your responses will be anonymous and cannot be associated with your personal Consent.

The final aggregate survey results will be shared with the course instructor after the conclusion of the course but survey responses cannot be associated with your name. The objective of the research is to explore your experience in this simulation and see what elements could be adapted for future simulation designs. Please attempt to answer all questions.

1. Major(s) ____________________________________________

2. Gender  M  F  Other  _____

3. Year of Study  U0  U1  U2  U3  other  _____  (corresponds to Year 1-4)

4. Role in the Simulation

______________________________________________

Version: March 10, 2015
5. Please indicate your experience with simulations.

I play computer-based games:

If you answer the above at #1 or #2, please continue to the next items.
If you chose 3 or 4, proceed directly to the next section. (Item 6).

I have participated in online computer games that involve multiple players simultaneously

I have participated in online computer games that require that I assume a role or identity

6. I have participated in role playing games (not on-line) that required me to assume a role or identity

7. Please state your agreement or disagreement with the following statements using the following scale:

The following statements refer to the expectations students might have of their potential engagement in the simulation, referring to Bouvier’s social (so)/action (a)/environment (e)/self (se) dimensions of engagement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1 - strongly agree</th>
<th>2 - agree</th>
<th>3 - neutral</th>
<th>4 - disagree</th>
<th>5 - strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I expect to be engaged in my role during the Sim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am looking forward to finding out more about Brynania. (e)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I expect to be challenged to make decisions and take action. (a)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I hope I will have some fun with the other students during the Sim. (so)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I expect to do well in the Sim. (se)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I expect to work hard during the Sim. (se)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I expect the technology we use during the Sim will be manageable.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I expect to get stressed at points during the Sim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I expect the Sim will be a good learning experience.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

8. List one thing, (if anything) you have heard about the Sim?

9. What do you hope you will learn in the Sim?

Thank you for completing the pre-Sim survey!

Version: March 10, 2015
Post-Survey

Annotated Post-Simulation Survey

The blue-ink annotations give some rational for the survey items chosen.

Note: the questions relating to engagement correspond either to Bouvier’s four types of engagement in simulations – environment, self, action or social, or Kahn’s definition of engagement which includes cognitive, emotional and physical elements.

Post-Simulation Survey

Design Elements in the Simulation

These are questions about the design of the Simulation as a learning experience – how it was structured and the features of the game experiences that were most important to you. Please attempt to answer all questions.

Please indicate to what extent you agree or disagree with the following statements.

1 - Strongly agree  2 - Agree  3 - Neutral  4 - Disagree  5 – Strongly disagree

1. I found the Sim to be “real world” in terms of the issues we addressed and decisions we had to make. (from the literature - the more real world the more engaging a simulation can be)

2. I knew what I had to do throughout the Sim. (good curriculum design – clear instructions)

3. I took personal actions and made decisions throughout the Sim. (engagement - self)

4. I used the course content when participating in the Sim. (good curriculum design – relate to course content)

5. I received feedback from other students on my performance throughout the Sim. (from the literature on the importance of feedback)

6. I received feedback from the professor on my performance throughout the Sim. (from the literature on the importance of feedback)

7. I was aware of mistakes I made and could take action to correct them. (from the literature on control and self efficacy)

8. I learned from actions and events taking place throughout the Sim.

9. I had opportunities to express some creativity throughout the Sim. (literature on simulation design)
10. I thought the rules were clear, acceptable and relevant to the game. (literature on simulation design)
11. I had personal goals to achieve. (engagement – self)
12. I had many opportunities for interactions with my classmates. (engagement – social)
13. There was too much teamwork in the Sim. (engagement – social)
14. The actions I took in my role mattered in the game. (engagement – self)
15. I saw the course material “come to life” during the Sim. (good curriculum design)
16. There were too many choices for actions during the Sim. (engagement – self)
17. The time frame we had to operate in was realistic. (literature on simulation design)
19. There was the right amount of collaboration in the game. (engagement-social)
20. There was the right amount of winning/losing in the game. (engagement – action)
21. There was too much information given to us that we didn’t need. engagement – cognitive)
22. There was a balance of in person and on-line (e-mails, website development) activities. (communication)
23. At the end of the Sim I had an overall understanding of what we were doing and how my role fit into the larger picture. (engagement – environment)
24. I contributed more during the Sim than in a regular class. (measuring engagement)
25. Other students appeared to participate more in the Sim than in other classes. (measuring engagement)
26. The instructor seemed engaged in the Sim. (measuring engagement)
27. I was engaged throughout the Sim. (measuring engagement)
28. I was challenged throughout the Sim. (engagement – cognitive)
29. I had fun with other students throughout the Sim. (engagement – social)
30. I enjoyed finding out about Brynania and how the game worked. (engagement-emotional)
31. I learned a lot during the Sim.
32. I found the technology was manageable throughout the Sim.
33. The Sim met my expectations. (literature on context and setting expectations)
34. Anything else about the Sim that made it work (or not) for you?
35. Blended design: The simulation was a “blended” design format meaning that you worked both face-to-face with other students and on-line. The simulation could have been accomplished fully face-to-face (“guys and gals sitting around a table”) as would have been done pre-technology, or it could be done fully on-line as a computer simulation. What would you prefer?

1. continue blended format
2. fully face-to-face
3. fully on-line
4. don’t know

36. Communication during the simulation: How important were the following to you in the simulation?

<table>
<thead>
<tr>
<th></th>
<th>1 - Very important</th>
<th>2 - Important</th>
<th>3 - Neutral</th>
<th>4 - Not that Important</th>
<th>5 - Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having a physical meeting space.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having assigned emails.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meeting face to face in a classroom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meeting face to face outside the classroom, on or off campus.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communicating anytime throughout the Sim (not just in class)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other methods of communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(blogs, Skype, YouTube, Instagram, Snapchat etc)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

37. Other comments about communication during the simulation? (Point form is fine)

..................................................................................................................

..................................................................................................................

..................................................................................................................

38. Was there a specific time during the simulation when you felt most engaged? Describe what was going on in detail – who were you with, what was happening, why does it stand out for you?

..................................................................................................................

..................................................................................................................

..................................................................................................................

Version: March 10, 2015
39. Thinking about the Sim and all of its’ characteristics as a learning experience, what did you most appreciate about the Sim and why?

40. What would you change if you were designing the Sim for future student groups?

41. What did you learn about yourself in the Sim?

Thank you for completing the survey!
Appendix J. Interview Questions

1. What do you think the strengths of the Simulation are?
2. What would you change?
3. How do you see it evolving in the future?
4. What design elements do you think are the most important contributors to its success?
5. What are the potential barriers to adapting this simulation for other purposes, such as a business simulation?
Appendix K. Interviews: Participant Consent Form

Consent Form for Participation in Interviews

From Brynania to Business:
Designing an Evidence-Based Business Education Simulation from an Exploration of a Blended Real-Time Model.

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Research Supervisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nancy Newlan, EdD Candidate</td>
<td>Dr. Milton McClaren</td>
</tr>
<tr>
<td>Faculty of Education</td>
<td>Faculty of Education</td>
</tr>
<tr>
<td>Simon Fraser University</td>
<td>Simon Fraser University</td>
</tr>
</tbody>
</table>

My name is Nancy Newlan. I am an EdD candidate in the Faculty of Education, at Simon Fraser University, located in Burnaby, B.C. I will be the principal investigator in the proposed research which I am conducting for my doctoral thesis. The survey, focus group and interview results collected during the research will be analyzed, described, and summarized for the thesis. My supervisor, Dr. Milton McClaren and I will be the only people to access the raw data collected.

Study Purpose
You are being invited to take part in this research study because you are involved in Political Science 450 at McGill University, either as the instructor, Dr. Rex Brynen or as a graduate student assisting with the simulation game, the Peacebuilding Simulation, during the Spring 2015 term. The design aspects of this simulation are being studied to determine the elements that resonate with you, that are important and should be replicated in future simulations. The study will help me learn more about student engagement in simulations so that similar learning experiences can be developed or enhanced in the future. The end product of the research will be a design for a new educational simulation that I will pilot with undergraduate business courses at Capilano University in North Vancouver, B.C., where I am a faculty member. No ethics review is necessary from Capilano University as I am completing this study at McGill University as an SFU student and am not involving Capilano University.

Voluntary Participation
Your participation is completely voluntary. You may refuse to participate at all or withdraw at any time.

Study Procedures - Interviews
If you agree to participate in the study:

You will be asked by the Principal Researcher about your experience with Simulation and how you see it evolving in the future. The interview may be audiotaped and a photo may be taken. You will be identified by name in the study. Your name and photo may be used in future presentations and articles on this research.
Potential Risks
I am required to inform you of any risks you might take in participating in this research. I do not consider that there is any level of risk in your participation greater than the risks associated with your regular activities at the university.

Potential Benefits
There are no specific personal benefits associated with your participation in this study, beyond the opportunity to take a few moments to reflect on the Simulation game experience. This study will hopefully aid in designing business simulations in the future, so that other students have the opportunity to experience effective evidence-based simulation design. The study may encourage others to design simulation experiences for their courses by applying the design criteria that are developed from this research.

Payment
You will not be paid for participating in this study.

Confidentiality
All documents you complete in the course of this research, including this Consent Form will be kept by me in a locked drawer in my office. Dr. Milt Maclaren is the only other person who could access this information. Any personal information, such as a photo, or research data that might allow personal identifications, will be stored on a password protected, encrypted hard drive, which will be stored in a locked cabinet in my personal office when not in use in the research process. On completion of the research and submission of the thesis, the contents of the hard drive will be securely erased.

Withdrawal
You may withdraw from the study at any time, without giving reasons. If you decide to withdraw any data that contains information that might identify you will be erased or physically destroyed unless you give specific permission for it to be retained in the research database.

Organizational Permission
Dr. Rex Brynen, McGill University, has given permission for this study to be conducted with his students.

Study Results
The results of this study will be reported in a graduate thesis and may also be published in journal articles and books or referenced in presentations at professional and academic meetings. The completed thesis will be available from the Simon Fraser Library.

Contact for Information about the Study
Please contact Nancy Nowlan, [email address], [phone number], at any time for further information on the study. You may also contact the research supervisor, Dr. Milton McClaren, at [email address].

Contact for Complaints
If you have any concerns about your rights as a research subject and/or your experiences while participating in this study you may contact Dr. Jeff Toward, Director, Office of Research Ethics at [email address] or 778-782-6593.

Future Use of Participant Data
No future use of your personal information/data is anticipated.
Consent and Signature
Taking part in this study is entirely voluntary. You have the right to refuse to participate. If you decide to participate you may choose to change your mind and withdraw at any time without giving a reason and without any negative impact on you.

Your signature below indicates that you have read the information on this form, that you have consented to participate in the study and that you have received/retained a signed copy of this Consent form for your records.

Participant Signature ___________________________ Date ____________

Printed Name of Participant ___________________________

Principal Researcher

Printed Name ___________________________ email address ___________________________

Signature of the Principal Researcher ___________________________ Date ____________
Appendix L.  New York Times Article: Ceasefire!

A mock article written by Dr. Brynen (2015c) and posted on the Brynania website as a resource for students; used with permission.

The New York Times

1 August 2015  Cyberian Edition

Ceasefire!

Despite Hitches, the Guns Fall Silent—for Now

Megilidishu (NYT) 1 August 2015. The government and rebel groups have agreed to a formal, indefinite ceasefire in Brynania.

Under the terms of the agreement, both sides will remain in place in the Megilidishu area, although they are not restricted from moving elsewhere. No arms shall be brought into the port. Both sides, however, agree to facilitate the movement of relief supplies. It is not clear whether the PFLZ is required to open Highway 1, linking Megilidishu to the capital.

Implementation has also encountered a hitch: Concordian forces that are supposed to monitor the deal have not yet deployed. Under Article 3 of the ceasefire they may not do so until UN observers have arrived at controversial government detention camps 7 and 9—something that has not yet occurred.

Government supporters, who claim that the siege of Megilidishu has now been lifted without any political concessions, have hailed the agreement as a major victory. Although there have been promises of emergency aid for Zaharian areas hit hard by famine, it has been slow to arrive. UN officials estimate that as diplomats argued as many as ten thousand may have died in southern Brynania in the past month alone. For his part, President Uzair may be worried about what UN observers find in Camps 7 and 9, if and when they are given access.

The deal has already been formally endorsed by the OCN, and it is believed the UN Security Council will do so too in the coming weeks.

Political Talks Ahead

New York (Reuters) 1 August 2015. Assuming that the ceasefire doesn’t unravel, the next step will be for the parties to begin political talks on the future of Brynania. The United Nations, with considerable support from the EU and OCN, has drawn up preliminary proposals for a federal political system to serve as a possible basis for discussion.

The issues to be agreed are complex. If a federal system is adopted, what will be the borders and powers of each entity? What will be the role of the central government, and how will it be chosen? How will revenues be divided among the entities?

Beyond such long-term constitutional issues, there is the question of transition to be addressed. Will the current government remain in power, or will a transitional administration be formed? What and how will elections occur? At what point will demobilization begin? Can refugees return? Despite the ceasefire, Brynania remains a heavily-armed powder-keg—one that could easily explode once more into war.

Inside Today’s New York Times:

- Is the southern famine eroding the strength of the PFLZ?
- Icasian government commits to anti-smuggling measures and eventual Kimberley recertification
- Ruritania confronts a new “Zaharian problem”: its own angry minority
- OCHA warns aid agencies, government of impending monsoon season
Concordian Forces Are Ready to Go

Port Royal Highlanders Have Long, Proud History

Port Royal (Reuters) 1 August 2015. Although their deployment has been held up by delays in fully implementing the new ceasefire, Concordia’s Port Royal Highlanders are ready to go.

Considered one of the most elite forces in Cyberia, the unit dates to British colonial times. It served with distinction in WWII, and has extensive peacekeeping experience until the port is repaired and Highways 1 and 2N opened for commercial traffic, the revenue gains will be limited.

President Uzair could also address his budget problems by gaining access to revenues from the northern mining districts. These are currently under the control of the Free People’s Army, however—and the FPA are under no obligation to share any wealth under the terms of the recent ceasefire agreement.

Above: Concordian troops share a waffle as they wait to deploy.

“...The chaps are jolly enthusiastic, they really are,” said Colonel Finius T. Stormfroth II, commander of the unit. “It just seems like a awfully good thing to be doing, helping to sort out all that damnable bother in Brynania.”

** **

IMF Warns Brynania “Headed for Fiscal Collapse”

Large military budget said to be “unsustainable”

Washington DC (NYT) 1 August 2015. The International Monetary Fund has warned that the government of Brynania faces “imminent fiscal collapse” if it does not raise revenues and reign in military spending.

The opening of Meqilidishu could have some positive effect, although Concordia’s 3-0 victory over Icasia won it a berth in the semi-finals.

Finally, the Ugamins secured a narrow 1-0 victory over rival Rutania. The start of the game was delayed by a dispute over where the midfield line should be repositioned, but this was ultimately resolved by a committee of cartographers.

This month’s games will see Brynnia facing Uqamistan, Ruritania against Concordia, and Udem hosting Icasia.

** **

Human Rights Groups Call for Release of Political Prisoners

Zahra, Macklin still in detention

Hamrawille (UPI) 1 August 2015. Human rights groups—including the Brynianan Human Rights Group, Human Rights Watch, and Amnesty International—have called upon President Sheikh Huzaila Uzair to release political prisoners still held in Brynianan jails.

Activist and poet Zahra al-Zahra is believed to have been hospitalized following a hunger strike and force-feeding that has left her clinging to life. Zev Macklin, General Secretary of the Brynianan Federation of Trade Unions, was arrested in June and has not been heard from since.

** **

Three Teams Secure Playoff Berths

Who will be the fourth?

Port Royal (ESPN) 1 August 2015. After last month’s games, three teams are now assured of a place in the Cyberian Premier League semifinals: Brynania, Concordia, and Uqamistan. The fourth position, however, is still up for grabs.

The Brynianan team secured its place with an unimpressive 1-1 tie with Udem. Star Brynianan striker Zachary Arvanitidis was injured in the first half, and it is not clear when he will next be able to play.