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# **A VIRTUAL, IMMERSIVE, AND DISTRIBUTED LEARNING COURSE IN INFORMATION SYSTEMS: PROPOSED METHODS AND EXPERIMENT**

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## **ABSTRACT**

This article proposes a cutting edge teaching method and a research agenda to test its effectiveness. A Virtual, Immersive, and Distributed Learning environment is described in detail as it relates to a study abroad in which students interact through live video while taking part in an immersive service learning project. Research methods are proposed to measure the learning effectiveness, student engagement, and student satisfaction with the course.

Keywords: virtual, immersive, distributed, learning

## **I. INTRODUCTION**

As technological advancements become less expensive, global business has become prevalent in the daily lives of the vast majority of people worldwide. As such, it is becoming increasingly important for business students to study global business, global affairs, and global economies. To a certain extent, this can be done, through computer mediated technologies.

Universities are being asked to take a look at not only how they deliver educational content and how students are receiving this content (Darling-Hammond, 2000, Stahlke and Nyce 1996). Traditional education models are being updated to include both technology and service-learning initiatives. Often these two issues can be implemented in a symbiotic fashion.

This article proposes a new education model that uses technology to include students in a business information systems service-learning project through both an actual and virtual study-abroad. This model potentially can build upon the traditional distance education model. Distance education formerly meant that students were located off-campus, the professor was on-campus, and in the best of situations students were able to interact with the professor and the class through a live video feed. The proposed model includes on-campus students, off-campus students interacting with the class via live video, study abroad students interacting with the class via internet, and a professor who is out of the classroom, at the study abroad field location. All parties will be engaged in a live-case study activity as part of a service learning project.

In addition to detailing a proposed teaching method, the paper outlines a research study to test several hypotheses relating to student learning, engagement, and satisfaction with the proposed experience.

## **II. LITERATURE REVIEW**

Traditional distance learning developed from radio and television into multicultural phenomena with technologies expanding at an exponential rate (Sherry, 1996). Until recently, the dominant view that informed distance learning reflected the traditional, information processing approach, based on the concept of a computer performing operations on symbols (Seamans, 1990). This translated into a professor could convey a fixed organization of information to students via external representation. The professor represents an abstract body of information as concrete representation and then presents the representation of information to the student via a medium. The student then, once the information is received, decodes the information. The student then reconstructs the

information, proceeds to develop their image and uses it to construct new knowledge.

The traditional approaches to learning and teaching will not have the capacity to meet the escalating demands of higher education in the future (Stahlke and Nyce 1996). This is primarily due to the social and technological developments that have resulted in major changes taking place in the field of higher education. These changes have not been restricted to individual institutions, but have occurred globally, with institutions increasingly competing for students in the international marketplace for their students. This has required new approaches to educational material is presented of material and how courses are taught.

### **Distance Education**

Distance education has been defined as, "all arrangements for providing instruction through print or electronic communications media to persons engaged in planned learning in a place or time different from that of the instructor or instructors (Moore, 1990)." Many studies have been conducted to examine how distance education benefits the learner academically (Zhang, 1998; Navarro & Shoemaker, 2000). The learner's accomplishments show that such services can result in positive learning outcomes.

For example, Regent University at Virginia Beach conducted a study to analyze a five-week graduate course conducted solely through the Internet. The study investigated the sense of community developed among the students in the course. Findings show that learners took advantage of the 24-hour learning period and that the classroom community grew over the course of the study. Additionally, female students manifested a stronger sense of community and communicated more dependently within the classroom; while males were found to communicate independently (Rovai, 2006).

### **On-Line Learning Environment**

This instructional approach can also enhance students' ability to apply abstract knowledge by placing education in genuine, virtual contexts similar to the settings in which learners' skills will be used (Dede, 1992). In addition, a wide range of

participants are attracted to cooperative virtual environments because they can gain additional value by collaborating together. Social system (an immediate web of contacts with useful skills), knowledge assets (a personal, distributed brain trust with just-in-time answers to immediate questions), and communion (psychological support from people who share common joys and trials) are three types of "collective goods" that bind together the virtual communities enabled by computer-mediated communication (Smith M. , 1992).

Kansas State University studied the interaction between online and traditional students. In the study the course contained two sections. Each section was taught by the same professor with identical assessment tools used in each course. Scores of students are significantly higher online than traditional classrooms by a GPA of 0.5 (Beuckman, Rebello, & Zollman, 2006). This study continues but results so far show an increase of online students' participation.

### **Blended Learning**

Blended learning has been defined as, "...the combination of instruction from, historically, two separate models of teaching and learning: traditional face-to-face learning systems and distributed learning systems. It also emphasizes the central role of computer-based technology in blended learning" (Graham, 2004). Blended courses represent a combination of Web and face-to-face interactions. This hybrid can combine the best of both instructional worlds. Some instructors define blended learning approaches as the "thoughtful integration of classroom face-to-face learning experiences with online experiences" (Garrison & Kanuka, 2004).

"The importance of a blended approach to learning is that it ensures the widest possible impact of a learning experience and thus ensures...that the organization optimizes productivity and delivers value to its customers" (Julian & Boone, 2001). In 2002, IDC Corporation validated one of the many e-learning vendors, KnowledgeNet, on its ability to deliver measurable and effective blended learning outcome. The independent study of nearly 4,000 students revealed average pre-test scores of 54% and average post-test scores of 89% – a jump of 35

percentage points after students completed KnowledgeNet training (Anderson C. , 2002).

### **Study Abroad**

There is a body of research that describes individual programs and purposes, as well as student and faculty perspectives about the influence of a study abroad experience on participants. In particular, the most often cited benefits related to study abroad participation are in three areas: maturity, language proficiency, and increased knowledge of a specific culture (Anderson K. , 1996). “Comparative studies of students versus non-participants of study abroad have shown enhanced academic growth, personal development and global mindedness (Bates, 1997)” (Posey, 2003).

Most American students traveling overseas do this during junior academic year. This is usually done for language training rather than purely academic knowledge. Americans do not usually pursue developing nations as study abroad destinations (Altbach, 2004). The main disadvantage of study abroad is the lack of research pertaining to academic achievement (Crhanová, 2007). Students studying abroad as well often opt for education not in their given field.

### **Service learning**

Service learning is a teaching and learning strategy that attempts to integrate meaningful community service with instruction and reflection to enrich the learning experience teach civic responsibility and strengthen communities (Eyler, D, & Giles, 1999). “Educational programs [like these] need champions. Those champions must be found in the faculty if an innovation is to be profound and long-lasting. Administrators should not be shy about seeking out faculty champions" (Wood, 1990). Developing service learning at the institutional level has been characterized as a cycle that includes awareness, planning, prototype, support, expansion and evaluation (Kupiec, 1993).

### **Immersive Learning**

The Ball State University use seven criteria to define immersive learning In particular, immersive learning melds content, skills, societal need, and [student]

interests into an experience—an intense, real-world transformative experience that results in a tangible product such as a book, DVD, or business plan. And that product lives on and has a purpose beyond the duration of the experience itself” (University, 2008). The seven criteria for an immersive experience are:

- 1: Carry academic credit
- 2: Engage participants in an active learning process that is student-driven but guided by a faculty mentor
- 3: Produce a tangible outcome or product, such as a business plan, policy recommendation, book, play, or DVD
- 4: Involve at least one team of students, often working on a project that is interdisciplinary in nature
- 5: Include community partners and create an impact on the larger community as well as on the student participants
- 6: Focus on student learning outcomes
- 7: Help students define a career path or make connections to a profession or industry

In recent years, immersive learning has become advantageous in industrial and retail areas such as building construction scheduling, architecture, interior design and landscaping where the facility to create an immersive three-dimensional representation of ideas can have obvious benefits for planning, evaluation, marketing, and training (Green & Sulbaran, 2006).

Reviews of research related to simulations in the classroom concluded that the literal realism of the simulation materials is less important than the extent to which the simulation promotes “realistic problem-solving processes” (Smith P. E., 1987, Nicklas Dahlström, Sidney Dekker, Roel van Winsen and James M. Nyce in press, Sidney Dekker, Nicklas Dahlström, Roel van Winsen, and James M. Nyce. Crew Resilience and Simulator 2008).

### **Problem Based Learning**

Problem based learning (PBL) presents structured challenges to the students. The course’s instructor supports students as they work through the challenges

(Stepien & Gallagher, 2001). PBL is a teaching methodology that is commonly found in medical institutions that use it to diagnose a patient's medical condition (Mifflin BM, 2000).

The PBL method to education has been widely practiced. However, evaluating its effectiveness has been a challenge. Though PBL has methodological flaws, improvements are being created. For example, presenting PBL educational goals so that results can be measured is in development (Sanson-Fisher & Lynagh, 2005).

### **Case Studies**

A California University has used PBL to support a semester long case study. The purpose of this education format is to gradually introduce more information as the semester progresses according to the learning objectives. The focus was on a computer information system project in Systems Analysis and Design. This project was built around a capstone course in which student teams were assigned group projects that provide proper stimulus and context for the learning process (Gackowski, 2003).

### **RFP as an Educational Tool**

The increased demand for skilled employees has also amplified the demand for modern tools of learning (Gokhale, 1995). An approach used by some institutions involves engaging local businesses by using current or recently used (request for proposals) RFPs as class projects (Kitchens, 2007).

A Request for Proposal Systems allows individuals or entities to submit an invitation (RFP) for providers of a product or service to bid on the right to supply that product or service (Merida-Campos & Willmott, 2006). RFP's have been used successfully as hands-on substitutes for traditional case studies. One educational use involved an RFP for an installation of a complete document management system for an Australian government agency. Students gained professional experience working with professionals in IT project management (Wilson & Terry, 2001).



### **Charrettes**

A charrette is a collaborative planning process originally used in architectural design. It engages the talents and energies of all interested parties in a competition to develop a feasible plan (NCI Charrette System, 2001-2008). It can transform a daunting challenge into a successful plan. Usually, it is an intensely focused, multi-day session that uses a collaborative approach to create realistic and achievable designs (Lindsey, Todd, & Hayter, 2003). Charrettes create a learning experience that mixes disciplines and allows students to learn while contributing to the quality of the specific community.

As an example, North Carolina State University's Landscape Architecture Department (LAD) collaborates across studios to conduct a community design charrette. Charrettes provide a real life learning experience for the students, one that has community benefit as well as offering opportunities to work intensively with faculty (Design Influence, 2006).

### **Distributed Learning**

Distributed learning is not just a new term to replace the other 'DL', distance learning. Distance learning refers to the situation in which a student learns from off-campus or not in a traditional classroom lecture, but via the Internet. Distributed learning is derived from the concept of distributed resources. Distributed learning is an instructional model that allows instructors, students and content to be located in different locations. (Saltzberg & Polyson, 1995, Stahlke and Nyce 1996).

## **III. Methods**

The proposed study involves an immersive experience where students will develop an electronic commerce business plan for a small business. For this purpose the authors sought out a project with the following four criteria. First, a small or new business is desirable because it allows students to brainstorm new methods without being tied to pre-conceived institutional ideas or operations. Second, a project requiring a new online presence is preferred in order to foster more freedom in brainstorming and cutting-edge ideas without existing

constraints. Third, projects that involve the complete supply chain are preferred so that students can see and work with the complete flow of goods, services, and information including Customer Relationship Management. Fourth, the project should be conducted in a developing nation where there is opportunity for success and less probability for preconceived ideas. With these four criteria in mind, the authors located a client interested in starting a small business in e-commerce involving local suppliers in a developing nation.

The authors include an anthropologist, Dr. James Nyce, who has worked for some years in Romania. Together the authors have established contact with a client wishing to start a small e-commerce business linking local artists and their products to the global market. The client resides in the developing nation of Romania (TheWorldBank, 2008). The project will consist of field studies in Romania, with a connection to an ongoing class at Ball State University via Virtual, Immersive, and Distributed Learning (VIDL).

### **Virtual, Immersive, and Distributed Learning**

The proposed VIDL methods involve three aspects of education: Study Abroad, Immersive Service Learning, and Traditional Classroom activities.

### **STUDY ABROAD**

Ball State University has a goal to include 1,000 students in high-quality international experiences per year by the year 2012. The authors propose using this project to help their university to achieve both these goals, in addition to contributing to a number of other university objectives.

Conducting an immersive project of this type in a developing nation is expected to be a challenging task. This is a high risk enterprise, particularly in respect to planning and execution. Further, study abroad opportunities have been attacked as lacking rigor; not using academic resources effectively, and for not reconfiguring teaching paradigms to fit study abroad programs (Abrams, 1960; Fransico, Montecinos, & van Olphen, 2007). These criticisms can be overcome by including some of the criteria for an “immersive project”. In relation to developing an e-commerce business plan for a Romanian company, the most relevant, and measurable immersive learning criteria of Ball State University

initiative is: “*Number 3: Produce a tangible outcome or product, such as a business plan...*” (University, 2008). Other course elements derived from immersive- and service-learning will help add academic rigor to the experience.

### **IMMERSIVE SERVICE LEARNING**

The proposed immersive service learning experience incorporates several distributed education methods. The proposed experiment will use problem-based learning through a case study, often used in the traditional classroom; an RFP, most often seen in business; and incorporate a charrette, commonly used in architecture.

### **LIVE CASE STUDY**

Case Studies are a time-honored method of injecting “real world” situations into a traditional classroom setting. Over the past two decades, teaching has moved from a “largely teacher-centered, product-based activity, to [a] more student-centered, process-based activity” (Mellor, 1991). Dr. Fred Kitchens has used this method successfully for eight years in a two-semester sequence of courses in Systems Analysis and Design (Kitchens, 2007). Students in that course sequence are required to function as a team of outside consultants working with a real business to solve an information system problem. It is this model that largely will inform what class structure and content in Romania. These projects have proven very successful, causing businesses to change the form and function of their Information Technology departments and even cancel existing contracts. Projects have received awards from such events and organizations as the International Business Informatics Challenge in 2006 and Computerworld magazine in 2008.

The intent behind the live case study is three-fold. First, the Live Case Study concept will raise the academic rigor of the project and thereby raise the level of learning on Bloom’s Taxonomy from around levels three and four, application and analysis; to levels five and six, synthesis and evaluation (Ormell, 1974). A parallel class, Anthropology 440/540 Anthropological Field Trip: Global Information Infrastructure: National Issues, Local Contexts in Romania: An ethnographic field school, taught by Nyce at the same time will provide input,

knowledge and information requirements elicited from other small scale Romania businesses. This course will be running concurrently, and there may be some adverse effect from the course running at the same time. It is also intended to provide students an immersive experience where they are able to apply their education in a hands-on environment. The project will ultimately deliver value to a chosen client and the client's community by providing a state of the art business and technology plan.

### **REQUEST FOR PROPOSAL**

Using a Request for Proposal (RFP) is one of several methods of introducing problem-based learning through a live case study. RFPs are commonly used in business to gather proposed solutions from external vendors (Services, American Express Corporate, 2006). They offer a ready-made, relevant problem to challenge students. Depth and scope of the project are pre-defined in the RFP. Dr. Kitchens has developed a capstone course in Information Systems around a semester-long team project in which student teams respond to an RFP. Previous projects include a proposal for designing and operating a wireless network for travelers at a nearby international airport; designing the technological components of a new high-tech bank branch; and building and maintaining a national database for the resort industry.

Faculty mentors will have a unique opportunity to make an assignment to students for which they themselves do not have a pre-established answer. It is also a model often found in service-learning environments. Faculty members guide students through the proper procedures to arrive at an answer without steering them toward any particular pre-conceived answer. This parallels the methodology and intent of the field study classes Nyce has conducted in Romania since 2004.

In the proposed study abroad project, an RFP will be developed by the client in collaboration with the professors and will be issued to the students. The RFP will define the task and control the depth and scope of the project. It will be broad enough to give students the opportunity to explore a variety of e-commerce business models and will incorporate enterprise-wide technology issues.

The situation involves the client, the owner of a Romanian travel agency, who wants to expand into the role of a Romanian folk art dealer. A brief analysis of the client's situation includes several interesting situations and challenges for students to tackle:

- The client has many contacts in the Romanian folk art industry
- Romanian folk art is created by small pockets of gifted, independent artists scattered throughout the country
- Romania has small regions where technology such as the Internet and wireless communications are thriving, but it is not wide-spread or pervasive
- Men tend to run the large scale businesses in Romania: This client is a woman and for this reason expanding her business is not without its challenges.
- Romanian folk art has a very narrow niche market. However, on a world-wide scale, there could be a significant demand for it, especially if the provider can find ways to "add value" to her inventory.
- The client wants to become a dealer and distributor of Romanian folk art to the outside world; providing a service to artists, especial women artists, in the country.
- In e-commerce, sales of goods and services is not the only business model or source of revenue available to a businessperson. Adding value through "naming" and document/certification could dramatically increase volume and revenue
- Currently, the Romanian artists sell almost exclusively to local tourists in their own cultural region.

The objective is to establish a line of business that will allow the client to use personal resources and contacts within the Romanian folk art community to become a conduit to bring together the artists and the buyers on the world-wide market. The business plan requested in the RFP will involve the entire supply-

chain from the various artisans, through the client, to the end-buyer, including a procedure for financial transaction.

### **CHARRETTES**

A charrette is a competitive brainstorming technique commonly used in architectural design contests. Students, or contenders, are given the general requirements for a new structure, and are expected to produce a conceptual design within a limited amount of time.

The concept works well in business classes when an RFP is given to several teams of students in a competitive environment. Each team works as though they are an independent vendor responding to the RFP in a competitive business environment. Dr. Kitchens has used this technique for the past five years in a corporately-sponsored, year-end competition. Students compete to provide a feasible solution to a business problem for a large national restaurant chain in the United States.

### **BLENDED-LEARNING CLASSES**

The blended learning component of the proposed study abroad will incorporate the graduate-level *Information Systems* course in the Masters of Business Administration (MBA) program at Ball State University. This is a required course for MBA students. It is charged with providing graduate-level introduction to information systems, including topics such as implementation strategies, managerial issues, organizational impact, and human resource issues. A background in operations management is a prerequisite to the *Information Systems* course.

Many of the MBA courses (including this course) at Ball State University are taught in a Blended Learning environment. Approximately half of the students are on-campus, and attend class in a traditional classroom setting. The other half of the students are watching the class in real-time at off-campus locations participating by live video feed. They have the opportunity for live interaction with the class by either calling the professor on the telephone or by sending an instant message through a course-exclusive bulletin board environment.

As one of the early courses in an MBA program which relies heavily on blended learning, and because Information Systems is the topic; the course is charged with introducing students to virtual teams. When the course is taught, two to three case studies are used in the course. Student-team assignments are arranged in effort to maximize the geographical distribution of each team. This is intended to help force students to use the on-line virtual team tools available to them. One issue the professor cannot completely control is the ease and frequency with which students are able to use telephones to interact with their teammates on the traditional case study assignments. This will be more of an issue when the class is taught in Romania.

#### **PROPOSED COURSE ENVIRONMENT**

Technology will be used to form virtual teams in a study abroad project. Student team members will be both in the field and in the classroom will support one of the strategic goals of Ball State University: “Maintain best-practice use and innovative use of information technology in support of strategic directions” (University, 2008). Students in the MBA class will be placed on teams to work on the RFP in a charrettes competition. Each team will be assigned one “Romanian Liaison” who will conduct field research on behalf of the campus teams. Traditional research will be conducted by the campus-based teams through the Internet and other domestic sources regarding topics such as economy, market conditions, business models, e-commerce, etc... Field research will be conducted regarding local conditions such as supply chain analysis, logistics, transportation models, communication, banking and financial transaction methods, Internet availability and costs. This again will be supported by Nyce’s field study class.

#### **Research Procedures**

The research methods used in this study consist of a two-sample test. The control sample will be one section of the MBA Information Systems course, taught using previously established blended-learning practices. The experimental sample will be a VIDL section of the course. Learning effectiveness will be based on a common set of learning objectives.

The control sample will be taught in a blended learning environment at Ball State University, as it has been done twice per year for more than eight years. This course will also include a term project consisting of an academic RFP based case study. This RFP will be academic in nature, but similar in learning objectives to the RFP used in the VIDL class. The lessons during the two class periods in which the professor is in Romania will be taught by videoconferencing from Romania. In addition, part of the class time will be spent asking questions and delivering answers about the local Romanian conditions related to the RFP and interviewing the client.

The two samples will be compared on the basis of learning effectiveness and learning engagement. Learning effectiveness will be evaluated through a pre- and post-test measurement based on specific learning objectives common to both samples, found in the textbook. The pre-test will be delivered on the first day of class, and the post-test will be conducted as part of the final exam. Results will be measured through a paired-means test.

Learning engagement will be measured through the use of a survey at the end of the semester. Both open-ended and closed-ended questions will be used to measure student engagement and satisfaction.

### **HYPOTHESES**

Hypotheses for the study are in three categories: learning effectiveness, students' engagement, and students' satisfaction.

Learning effectiveness will be measured using the pre- and post- tests. Learning is expected to be greater for students using the VIDL teaching methods, as stated in the following hypotheses:

- Hypothesis 1: There is no significant difference in pre-test results between the VIDL group and the Control group results, for each learning objective.
- Hypothesis 2: There is no significant difference in pre- and post-test scores between the VIDL group and the Control class, for each learning objective.
- Hypothesis 3: There is no significant difference between the number of questions for which each VIDL student scored over 70% on the pre-test



and the number of questions for which each Control student scored over 70% on the pre-test.

- Hypothesis 4: There is no significant difference between the number of questions for which each VIDL student scored over 70% on the post-test and the number of questions for which each Control student scored over 70% on the post-test.

Student engagement will be measured using the survey. Engagement is expected to be greater for students using the VIDL teaching methods. This will be tested using the hypotheses:

- Hypothesis 5: There is significantly greater learning engagement in the VIDL group survey results than in the Control group survey results, for each question relating to learning engagement.
- Hypothesis 6: There are a significantly greater number of survey questions for which each VIDL group student scored over 70% engagement than the number of survey questions for which each Control group student scored over 70% engagement.

Student Satisfaction will be measured using open-ended questions on the survey. Satisfaction is expected to be higher among students in the VIDL sample than students in the Control sample. This will be tested using the hypotheses:

- Hypothesis 7: There are significantly higher scores for the VIDL group survey results than the Control group survey results, for each question relating to learning satisfaction.
- Hypothesis 8: There are a greater number of survey questions relating to satisfaction for which each VIDL group student reported satisfaction than the number of survey questions for which each Control group student reported satisfaction.

## **IV. Results**

Results of the study will be categorized in two broad categories. The first category of results relate to extending academic literature on innovative forms of graduate education. The second category relate to university goals.

### **Results Relating to Research**

Results of the study are expected to show that the VIDL sample outperformed the Control sample in each of the relevant hypotheses (2, 4, 5, 6, 7, and 8). Hypotheses 1 and 3 are used only to establish a baseline for hypotheses 2 and 4.

Student engagement will be measured using the survey. Engagement is expected to be greater for students using the VIDL teaching methods. This will be tested using the hypotheses.

Student satisfaction will be measured using open-ended questions on the survey. Satisfaction is expected to be higher among students in the VIDL sample than students in the Control sample. This will be tested using the hypotheses.

### **Results Relating to University Goals**

The outcome of this experience will directly support the following strategic goals and objectives of Ball State University.

The first strategic goal at Ball State University relates to learning. The university will promote academic excellence among undergraduate and graduate students seeking a rigorous learning experience. There are four objectives relating to this goal pertinent to this research. First is to provide each student with the opportunity to participate in an immersive learning experience. Second is to increase the number and quality of significant in- and out-of-classroom learning opportunities such as experiential learning, international learning experiences and service learning. Third is to offer market-responsive and nationally ranked or recognized extended education opportunities that are integrated with on-campus offerings. Fourth is to maintain best-practice use and innovative use of information technology in support of strategic directions.

The second strategic goal relates to scholarship. The university will support and reward faculty and student scholarship of discovery, integration, application and

teaching. There are three objectives relating to this goal pertinent to this research. First, to increase the number of faculty and students and the breadth of disciplines engaged in scholarship. Second, to recognize scholarship of discovery, integration, application, and teaching with implementation defined at the department level. Third, grow selected graduate programs that support increased scholarship.

The third strategic goal relates to engagement. The university will address local, state, national, and international needs through activities that foster collaboration and mutually beneficial relationships with its diverse constituents.

In addition to university strategic goals, the proposed experience will meet all seven of the seven criteria for educational experiences to be considered “Immersive Learning” at the Ball State University (University, 2008).

## **V. Conclusions**

Results of the study are expected to show that teaching in a VIDL environment, using a live RFP in place of a traditional academic case study has a positive effect of student learning, engagement and satisfaction. However, due to the cost of such activities, more research will be needed to investigate the durability of those benefits, and the long-term effects. Still, the benefits are expected to outweigh the cost, for at least most of the participants.

For the sponsoring university, a class such as this requires a significant investment in technology infrastructure, and a dedication to support a study abroad program. One benefit to the VIDL method is that students who chose not to travel, or cannot afford to travel, will still be able gain a valuable immersive experience. This helps to justify the cost by spreading some of the value among a greater set of students.

While the results of this study are expected to be positive, further research needs to be conducted to confirm the results. Many variables need to be studied and accounted for in future research, including differences in teaching styles, levels of experience with study abroad, experience with immersive learning, experience

with technology, type of industry used in the RFP, and education and maturity levels of student participants at home and abroad.

Like all studies, not all variables can be controlled. First, the chapters in the textbook, and the associated lessons need to be taken out of order for the VIDL sample. However, the authors of the textbook obviously had a reason for the order of the chapters. Taking chapters out of order could potentially have an impact on the study results. Second the potential issues from the Anthropology 440/540 course running concurrently may cause unforeseen changes in the expected results.

Further this study is essentially a sample of one: one attempt, one client, one country, one professor, and so on. All of these should be considered variables as VIDL teaching methods are attempted in future studies. Over time, as VIDL-type techniques become easier and more popular, a meta-analysis should be conducted to handle some of the potential variations that cannot be controlled on class by basis.

## **VI. Works Cited**

- Altbach, P. G. (2004). Higher Education Crosses Borders. *Change* , 6.
- Anderson, C. (2002). Customer Needs & Strategies: Effective Learning: Measurable Results from a Solid Process: A Case Study on KnowledgeNet.  
<http://www.knowledgenet.com/pdf/IDC%20Learning%20Effectiveness.PDF>.
- Anderson, K. (1996). Education: Expanding your horizons. *Black Enterprise* , 318.

- Bates, J. T. (1997). The effects of study abroad on undergraduates in an honors international program. Unpublished Doctoral Dissertation, University of South Carolina.
- Beuckman, J., Rebello, N. S., & Zollman, D. (2006). Impact of a Classroom Interaction System on Student. Department of Physics, 116 Cardwell Hall, Kansas State University .
- Crhanová, I. (2007). Some of thr Main Benefits of Study Abroad. MASARYK UNIVERSITY FACULTY OF EDUCATION DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE .
- Dahlström, N., Dekker, S., van Winsen, R., & Nyce, J. M. (2008). Fidelity and Validity of Simulator Training. *Theoretical Issues in Ergonomics* .
- Darling-Hammond, L. (2000). How Teacher Education Matters. *Journal of Teacher Education* , Vol. 51, No. 3, 166-173.
- Dede, C. (1992). The future of multimedia: Bridging to virtual worlds. *Educational Technology* , 54-60.
- Dekker, S., Dahlström, N. D., van Winsen, R., & Nyce, J. M. (2008). Crew Resilience and Simulator Training in Aviation. In E. Hollnagel, C. P. Nemeth, & S. Dekker, *Resilience Engineering Prespectives*. Hampshire, UK: Aldershot.
- Design Influence. (2006). College of Design . North Carolina University.
- Eyler, J., D, E., & Giles, J. (1999). Where's the Learning in Service-Learning?
- Franklin, C. L. (2001). DISTANCE VERSUS LIVE EDUCATION:POINTS OF COMPROMISE, POINTS OF SYNERGY. *Academy of Educational Leadership Journal* , (5) 97-104.
- Fransico, R., Montecinos, C., & van Olphen, M. (2007). Lessons Learned from a Collaborative Self-Study in International Teacher Education: "Visiones, Preguntas, y Desafios". *Teacher Education Quartly* , 57-74.
- Gackowski, Z. J. (2003). Case/Real-Life Problem-Based Learning with Information System Projects. *Journal of Information Technology Education*
- Garrison, D. R., & Kanuka, H. (2004). Blended Learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education* , 7, 95 - 105.
- Gokhale, A. A. (1995). Collaborative learning enhances critical thinking. *Journal of Technology Education* , Vol 7, No 1.
- Graham, C. R. (2004). BLENDED LEARNING SYSTEMS: DEFINITION, CURRENT TRENDS, AND FUTURE DIRECTIONS. In C. J. Bonk, & C. R. Graham, *Handbook of blended learning: Global Persepctives, local designs*. San Francisco: Pfeiffer.

- Green, M. E., & Sulbaran, T. (2006). Preview of using distributed virtual reality in construction scheduling education. *Proceedings of ELearn Conference 2006* (pp. 51-56). Chesapeake, VA: AACE.
- Greenhalgh, M. (2002). Learning art history in context: A model of Borobudur and the limits of reality. *The Journal of Education, Community and Values: Interface on the Internet*, , 2(6) 1-14.
- Hatcher, J. A., & Bringle, R. G. (1996). Implementing Service Learning in Higher Education. *Journal of Higher Education*, .
- Julian, E. H., & Boone, C. (2001). Blended Learning Solutions: Improving the Way Companies Manage Intellectual Capital: An IDC White Paper. [http://suned.sun.com/US/images/final\\_IDC\\_SES\\_6\\_22\\_01.pdf](http://suned.sun.com/US/images/final_IDC_SES_6_22_01.pdf) .
- Kitchens, F. L. (2007). Experiential Technology Education. In Press International Business Informatics Challenge and Conference. Dublin: Logos-Verlag, Berlin.
- Kupiec, T. Y. (1993). Rethinking Tradition: Integrating Service with Academic Study on College Campuses. Denver, Colo.: Education Commission of the States .
- Lindsey, G., Todd, J. A., & Hayter, S. J. (2003). A Handbook for Planning and Conducting Charrettes for High-Performance Projects. National Renewable Energy Laboratory .
- Mellor, A. (1991). Experiential learning through integrated projectwork: An example from soil science. *Journal of Geography in Higher Education* , 15 (2): 135-49.
- Merida-Campos, C., & Willmott, S. (2006). The effect of heterogeneity on coalition formation in iterated request for proposal scenarios. *Knowledge Engineering and Machine Learning Group* , 2,(3).
- Mifflin BM, C. C. (2000). A conceptual framework to guide the development of self-directed, lifelong learning in problem-based medical curricula. *Medical Education* , 34:299-306.
- Moore, M. G. (1990). Background and overview of contemporary American distance education. *Contemporary Issues in American Distance Education* , xii-xxvi.
- Navarro, P., & Shoemaker, J. (2000). Performance and perceptions of distance learners in cyberspace. *The American Journal of Distance Education* , 14(2), 15-35.
- NCI Charrette System. (2001-2008). Retrieved 8 27, 2008, from National Charrette Institute: <http://www.charretteinstitute.org/charrette.html>
- Ormell, C. P. (1974). Bloom's Taxonomy and the Objectives of Education . *Educational Research* , 3-18.

- Perry, J. H. (1995). The Fifth RIS-PACS School. Georgetown University Medical Center .
- Posey, J. T. (2003). STUDY ABROAD: EDUCATIONAL AND EMPLOYMENT OUTCOMES OF PARTICIPANTS VERSUS NON PARTICIPANTS. A Dissertation submitted to the Department of Educational Leadership and Policy Studies .
- Rovai, A. P. (2006). Building classroom community at a distance: A case study. *Educational Technology Research and Development* , 33-48.
- Saltzberg, S., & Polyson, S. (1995). Distributed learning on the World Wide Web. Syllabus. Sept '95. Retrieved 8 15, 2008, from [http://www.syllabus.com/archive/Syll95/07\\_sept95/DistrLrngWWWWeb.txt](http://www.syllabus.com/archive/Syll95/07_sept95/DistrLrngWWWWeb.txt)
- Sanson-Fisher, R. W., & Lynagh, M. C. (2005). Problem-based learning: a dissemination success story? *MEDICAL EDUCATION* , 183, 5.
- Seamans, M. C. (1990). New perspectives on user-centered design. Presentation at the Interchange Technical Writing Conference. Lowell MA, University of Lowell .
- Services, American Express Corporate. (2006). Commercial Card RFP Guide: How to create an effective Request for Proposal for corporate T&E card and / or corporate procurement card services.
- Sherry, L. (1996). Issues in Distance Learning. *International Journal of Education* .
- Smith, M. (1992). Voices from the WELL: The logic of the virtual commons. University of California at Los Angeles .
- Smith, P. E. (1987). Simulating the classroom with media and computers. *Simulation and Games* , 18(3) 395-413.
- Stahlke, H. F., & Nyce, J. N. (1996). Reengineering the University: Reinventing Teaching and Learning. *CAUSE/EFFECT* , 19(4):44-51.
- Stepien, W., & Gallagher, S. (2001). Problem-based learning: As authentic as it gets. *Educational Leadership* .
- TheWorldBank. (2008). Data and Statistics. Retrieved 7 27, 2008, from [www.worldbank.org:  
http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20421402~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html](http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20421402~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html)
- University. (2008). Immersive Learning. Retrieved August 14, 2008, from University: <http://cms.bsu.edu/Academics/UndergraduateStudy/BeyondtheClassroom/ImmersiveLearning.aspx>
- Wilson, V., & Terry, J. (2001). Project Management Professionalism and Ethics: Guide. Edith Cowan University .

Wood, R. J. (1990). Changing the Educational Program. *Managing Change in Higher Education* , 53.

Zhang, P. (1998). A case study on technology use in distance learning. *Journal of Research on Computing in Education* , 30(4), 398-419.