

CREATIVE PEDAGOGY: A QUALITATIVE STUDY OF
IMMERSIVE LEARNING AT THE
CENTER FOR INFORMATION AND COMMUNICATION SCIENCES (CICS)

A DISSERTATION
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BY
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DEDICATION

This dissertation is dedicated firstly to God Almighty, the glory and lifter of my head,
who is my present help in time of need;

to my husband and partner Ayodeji who is my inspiration, who fully supported my quest
for advancement, and continually expressed his faith in my ability to learn;

and to my wonderful children – Olufemi, Bolutife, Toluwa, and ItoreOluwa, my delight.

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ABSTRACT

DISSERTATION TITLE: Creative Pedagogy: A Qualitative Study of Immersive Learning at the Center for Information and Communication Sciences (CICS)

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The Center for Information and Communication Sciences graduate program commenced at Ball State University in 1986 with a specific focus to train graduate students to be leaders in the Information and Communication Technology (ICT) industry. The Center is the manifestation of a vision birthed out of creativity and resourcefulness. This study examined the creative pedagogy approach at CICS based on instruction, social learning culture, professional development, academic achievements, and collaborative interaction among students, faculty, alumni, and colleagues in ICT industries. The distinctiveness of this graduate program that combined in-class and out-of-class learning experiences was the focus of this study.

This study employed a qualitative method, specifically a descriptive case study design with the intent to understand and explain the academic, social, and cultural phenomena of the graduate program at CICS. The central research questions of this study focused on the impact of the teaching, learning, social and leadership outcomes of the

program. The data collection methods used for this inquiry were semi-structured interviews in combination with evidence from archival document data. The twelve participants were selected through purposive sampling and snowball sampling techniques.

The data analysis consisted of open coding techniques that produced eight themes. The findings were organized in relation to the study's three central research questions and indicated that the educational, technical, and social learning experiences of the masters program at CICS impacted the current students and alumni in a variety of ways. All the participants considered the program intense and comprehensive. They also agreed that the program was built around professional development. The existence of elements such as, the Student Social Learning Program (SSLP), teamwork, group projects, close-knit alumni community, well qualified faculty members, enrollment diversity, and student-centered immersive learning made CICS distinct from other programs.

The educational philosophy used in the program was described as effective, deliberate, consistent, clear-cut, invasive, multidisciplinary, integrated, and a culture of success. Key recommendations for further studies include study on the feasibility of replicating the success of CICS by adopting their pedagogical philosophies and practices and a comparative study of similar programs.

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CHAPTER 1

INTRODUCTION

“What follows is a vision, dream, a set of ideas filled with ambiguities and possibilities . . . we must have a strategic focus which can lead toward excellence. That focus, if maintained long enough will allow able people to create an improved learning environment.”

This was part of a speech by Ray L. Steele, the founding director on the opening of the Center for Information and Communication Sciences at Ball State University in April 1986. My journey to Ball State University (BSU) in summer 2004 to commence an eleven-month master’s degree program at the Center for Information and Communication Sciences (CICS) became an opportunity to be immersed in a theoretical and practical learning opportunity. My first visit was exciting with much to take in. My first impressions were very positive and have stayed with me ever since. The ambience of the Center was welcoming and impressive. The Center demonstrated professionalism and warmth, which were two things I never lacked at CICS during my eleven-month sojourn.

The director of the Center, who I was meeting for the first time, even though I had spoken to him during an international telephone call and had communicated with him many times through emails, warmly welcomed me. He introduced me to the two faculty members that were present, the office coordinator and all the graduate assistants that were present in the lobby of the Center. He then requested one of the graduate assistants to

give me a tour of the Center, which was the start of a journey for me that ended in May 2005 with a Masters degree in Information and Communication Sciences.

The Center is the manifestation of a vision that was birthed out of creativity and resourcefulness with a focus to create an enabling atmosphere for teachers and learners to pursue knowledge. The desire to “grow leaders for the information age” was paramount to the founding director, Ray Steele, and his team of faculty; thus, a culture of leadership and professionalism was created with a passion to bring excellence to the information age. The Center located at Ball State University housed the Applied Research Institute that consists of six industry-supported laboratories - Convergence, Networking, Digital Media, Applications, Wireless Innovation, and the Network Integration Center (Ball State University [BSU], 2007g).

The need for professionals in the Information and Communication Technology (ICT) industry to exhibit social, human communication, leadership, management, and technical skills is crucial to the information technology industry. In times past, Information Technology (IT) professionals were perceived as technical and mechanical workers with minimal contact with other employees in the workplace. The assumption is that since they work with technology, their focus is unilateral and most college IT programs are traditionally designed with such preconceived notions. Therefore, they produce professionals working with technology skills without consideration for social interaction (R. Steele, personal communication, September 10, 2007).

CICS provided a different thrust aiming to turn out technology professionals who could also resolve problems that require strong interpersonal skills. According to Ray Steele, “the graduate program [was] designed to prepare effective leaders for

the Information age,” and the goal of the program was to “turn out problem-solvers” (R. Steele, personal communication, September 10, 2007). Thus, the graduate program at CICS presented an interesting opportunity to conduct an in-depth study and examine how the program is structured to produce IT professionals who can combine both communication and technology skills to solve problems in their work environment.

As the evolving new technologies create challenges for the world, IT professionals must be able to respond to the different needs of consumers. Thus, it is important to produce those who can adequately manage the amorphous challenges of organizations and at the same time be people-friendly. The thirty-eight credit hours master’s program, which can be completed in eleven months, is modeled as a real world curriculum with the support of different IT organizations (BSU, 2007f).

The culture at CICS has been noted to be unique due to the combination of the academic program and social interaction-Student Social Learning Program (SSLP) to produce well rounded professionals in the information and communication industry. The program combines theory and practice to teach professionals how to analyze information and communication problems (BSU, 2007j).

The program has been identified as one of the few interdisciplinary programs in the country that combines theory and hands-on learning opportunities in diagnosing information and communication problems. The recognition by the International Telecommunication Education and Research Association (ITERA) of “the holistic nature of the CICS program and its unusual level of success over its 20+ year history” (BSU, 2007d, ¶ 3) reinforces the need to study the concept and

fundamentals of the graduate program in an objective manner. The founding director stated that the “award recognizes the holistic nature of the CICS program and its unusual level of success over its history . . . It is peer-based recognition, which is the highest compliment we can receive” (Ransford, 2007, ¶ 5).

Purpose of the Study

The purpose of this research was to examine the pedagogy approach at the Center for Information and Communication Sciences based on instruction, social learning culture, professional development, academic achievements, and collaborative interaction among students, faculty, alumni, and colleagues in ICT industries. The study will help to gain insight into CICS educational and immersive learning culture.

This study is set to illuminate the learning, social and enriching experience at CICS through the ‘Real World Experience’ initiative of the program. The real world experience is achieved through students’ active participation in special projects of the Applied Research Institute. This is an umbrella for the Human Factors Institute, the Institute of Wireless Innovation, the Software Testing Institute, and the Internetworking Academy and Training Institute dedicated to support the Center and assist students gain valuable experience and interact with IT professionals in the industry (BSU, 2007i).

The CICS program was created to enable students have an educational experience in a holistic environment that incorporates academics, laboratories, and social interaction. Thus, it is crucial to examine the process of producing students who are suitable for technical, leadership, and management responsibilities in a variety of organizations (BSU, 2007k). This study will also investigate the “success of CICS alumni, the high level of contribution of the faculty in publication, presentations and leadership, and the

overall quality of the student experience” that was the standard for ITERA award (Update, 2007, ¶ 6).

Research Questions

There are three research questions focused on the impact of the teaching, learning, social, and leadership frameworks of the program at CICS.

1. How do current students and the alumni of the program describe how the educational, technical, and social learning experiences at CICS impacted their professional experience?
2. How do CICS alumni define and describe professional success in relationship to the Center?
3. How do students and faculty describe the impact of the educational philosophy used in the CICS masters program?

Background Information

The Center for Information and Communication Sciences graduate program commenced at Ball State University in 1986 with a specific focus to train graduate students to be leaders in the information and communication technology field. It was relocated in 1988 to the then newly-completed Edmund F. Ball Communications Building. The Center houses specially designed information age facilities that “enables CICS to extend its academic program, house and equip its Applied Research Institute, conduct its teleconferencing and special programs mission, and display the most promising information age technologies” (BSU, 2007h, ¶ 4).

The visionary for the program, Ray Steele, was formerly at the University of Pittsburgh where he created a similar program. The Ball State graduate program was

designed to run for eleven months for full-time students in order to teach the full complement of the “information technology business.” The focus of the program was to build a community of leaders and professionals in the United States and globally. It was designed for students “on the fast track to management positions in the ICT industry” with a one-year program that enables students to “learn to create manageable solutions that support the bottom line for organizations in all areas of [the] society” (BSU, 2007a, ¶ 1).

The International Telecommunication Education and Research Association (ITERA) named CICS the National Graduate Program of the Year in March 2007. The Director was recognized and awarded ITERA’s Distinguished Service Award, an award for service to the academic field and to the telecommunications and information and communication technologies profession. ITERA is the primary association for graduate and undergraduate programs in the fields involving telecommunications and information and communication technologies and management in the United States (Ransford, 2007).

The purpose of the graduate program at CICS is targeted towards bringing enduring change in the students in a professional environment and impact on the broader society. The goals are (a) developing professionalism, (b) helping individuals think holistically about problems, (c) encouraging the development of leadership, (d) causing the concept and practice of integration to be more commonly used, (e) providing a learning environment in which theory, hands-on experience and outcome expectations merge, and where constant growth is required, (f) offering a rich resource of service sufficient to attract attention at the national and global level and providing local and state opportunities which follow and benefit all with whom we are associated, (g) increasing

sensitivity to ethical behaviors and issues and (h) providing leading-edge opportunities (BSU, 2007i).

The center also has fundamental values of which the students are constantly reminded such as integrity, professional behavior, personal respect, candor, commitment, entrepreneurial orientation, quality commitment, loyalty, leadership, communication, reality, and outcome-oriented activities. These values are usually inculcated early in the students' mind at the orientation program specially designed to break the students into the tradition at CICS. The students are also reminded constantly of these values throughout their studies in the Center (BSU, 2007e).

Alumni Networking

The program has over 1300 alumni in United States and internationally who work in various industries across different IT related careers. The strength of alumni networking hinges on the culture of being a brother's keeper that has been impressed upon them as students in the Center. Alumni contribute regularly to the success of the program through monetary contributions, equipment donations, employment notification and references, employment placements, attendance of the center's academic and social programs, and mentoring current students (BSU, 2007b).

The Center has updated contact information of all reachable alumni, which is available on the Center's website for students, faculty and alumni to view with a protected password. This enables the Center to be in contact with alumni to share information about the Center and request their continued support. The support from alumni has been noted to provide travel opportunities, networking, and social event opportunities for students (BSU, Alumni, 2007). "Graduates have maintained a 95 percent placement rate in the field since

CICS opened its doors in 1986” (BSU, 2007k, p. 3-4). This is a remarkable accomplishment that the Center attributes to alumni networking.

Curriculum

Pedagogy at CICS consists of various classroom work, laboratories, seminars, presentations, field trips, team projects, blogging, social events, and similar extracurricular activities. The faculty is composed of full-time seasoned practitioners in the IT field with extensive real-world industry experience, interdisciplinary instructors, and distinguished visitors. Various users, vendors, and consultants in IT industries provide resources at the Center. The Center's senior faculty members are regularly joined in teaching by talented members of affiliated departments such as computer science, management science, telecommunications, marketing (BSU, 2007f).

One of the goals of the Center for Information and Communication Sciences is to create well-rounded individuals; therefore, the Center regularly creates for students, opportunities to interact on social and professional levels with industry executives and other individuals through the Student Social Learning Program (SSLP). This program enables students to gain cultural and social experiences, as well as developing networking and communication skills through a variety of activities including (a) orientation and backyard barbeque, (b) leadership and team development challenge events (c) golf outings (d) symphony dinners (e) presentation skills workshop (f) homecoming tailgating event (g) international dinner (h) job placement seminar (i) alumni dinner (j) holiday receptions (k) super bowl party (l) mid-winter "Shed the Doldrums" event (m) ski trip and information summit (n) wine tasting (o) final fling for soon to be graduates and (p) graduation luncheon (BSU, 2007e).

Recruitment of Students

The method of recruitment of students at CICS is reinforced by word-of-mouth through the testimony of current students, the alumni network, and CICS industry partners in the United States. This is one of the strong points of the program. The director, alumni, and current students recruit international students from India through visits to that country. Others are referred from various colleges nationally and internationally (R. Steele, personal communication, September 10, 2007).

The program at CICS is designed to enhance the ability of students to manage projects, work in teams, and acquire leadership skills in the IT industry. Student development is encouraged by faculty interaction and collaboration with the students. The creative approach of teaching information and communication sciences has produced laudable results for 23 years, thus it is appropriate to study how model functions.

Significance and Scope of the Study

The peculiarity of the program makes it distinctive for a study because it was created for hands-on learning that takes place inside and outside the classroom. It also involves the use of real-world technologies in the center's laboratories, projects for corporate partners, and social learning outside the traditional classroom (BSU, 2007e). Student growth and development is encouraged by faculty interaction and collaboration with the students.

The study focuses on the perceptions of students, faculty, and alumni affiliated with the Center for Information and Communication Sciences at Ball State University. In addition, archival materials relevant to the Center were examined to corroborate information provided by the participants.

Definition of Terms

Alumna – female college or university graduate.

Alumni – (plural) used to describe two or more college or university graduate. This is also referred to as ‘alum’ by some of the participants.

Alumnus – male college or university graduate.

Collaboration - collective learning, participation or responsibility for a project, an assignment or professional learning that is centered on achieving desired results.

Faculty - an instructor or academic staff member in a college or university.

Higher Education –a two or four year college or university form of education.

ICS – acronym for Information and Communication Sciences.

ICT – acronym for Information and Communication Technology commonly referred to as Information Technology (IT).

Immersive Learning - instruction or learning experiences that extends beyond the traditional classroom.

Interview Field- an interview space which may be the physical space or the interview process.

Mentorship - a supportive relationship or developmental relationship established between two individuals or more where knowledge, skills, and experience are shared to help in building the less experienced individual(s).

Networking - the process of building communities of people who share the same interests or are working towards the same purpose.

Paradigm- standard, model or pattern. It could also be a set of statement, theory, principles, or practices.

Pedagogy - teaching method or curriculum. It could also be described as the principles, science and methods of teaching.

The Program - the term were used to represent various units in this study such as CICS, Center, Program, and Center for Information and Communications Sciences.

Researcher's Perspective

My strength as a researcher in this study was the insider status. I have prior knowledge of the Center's activities and was able to utilize the direct involvement and prior knowledge that I had as an alumna of this program. Robson (2002) noted that researchers could belong to the culture they were studying. Anti-positivist perspective indicates that insider research possesses the potential to enhance validity due to the additional richness, honesty, fidelity and authenticity of the information acquired. Insiders were noted to possess a wealth of knowledge that outsiders lacked (Tedlock, 2000; Tierney, 1994; Robson, 2002).

I relied on the assertion that qualitative research is enriched by the personal experience and prior knowledge of the researcher (Bogdan & Biklen, 1982; Hoepfl, 1997; Lincoln & Guba, 1985; Patton, 1990, Stake, 1978; Yin 2003). Hoepfl (1997) stated, "Strauss and Corbin believe that theoretical sensitivity comes from a number of sources, including professional literature, professional experiences, and personal experiences" (p. 50). My prior knowledge of CICS was a source of strength in the research process.

A minimal risk factor is indicated because of the type of research where the participants only recount their experiences and opinions on the subject matter. Along with engaging in the process of sustained reflexivity, I used a member-checking

procedure to ensure credibility. Member checking involves sharing the draft of the analysis with the participants (Denzin & Lincoln, 2000; Strauss & Corbin, 1998). The participants read through the summary of their interviews and verified the accuracy of their recorded experience.

Summary

This chapter commenced with a general introduction to this study. The purpose of this research was to examine the pedagogy approach at the Center for Information and Communication Sciences. Three research questions that focused on the impact of the teaching, learning, social, and leadership outcomes of the program at CICS were propounded. Background information about the Center that included alumni networking, curriculum, and recruitment of students were discussed. The chapter provided definition of terms used in this study and discussed the significance, scope, and researcher's perspective of the study. The next chapter will review literature relevant to this study.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

This chapter reviewed literature relevant to creative pedagogy and the purpose of the research, which was to examine the pedagogy approach at the Center for Information and Communication Sciences based on instruction, social learning culture, professional development, academic achievements, and collaborative interaction among students, faculty, alumni, and colleagues in ICT industries. Prior research on the concept of experiential learning, collaborative learning, constructive learning theory, and problem-based learning were examined. This chapter also examined participative leadership, group, and teamwork, diversity in higher education enrollment and communication and conversation theory.

Experiential Learning

The increase of experiential learning in colleges was due to the need for students to be more marketable when they graduate (Gettys 1990; Kolb & Fry, 1975; Kolb, 1984). As colleges and universities became concerned about the decrease in job markets and increased competition among college graduates, it was apparent that students would require being involved in a different form of hands-on-experience to learn about their chosen industries. According to Kolb and Kolb (2005)

Experiential learning is often misunderstood as a set of tools and techniques to provide learners with experiences from which they can learn. Others have used the term to describe learning that is a mindless recording of experience. Yet experiential learning is above all a philosophy of education based on what Dewey (1938) called a ‘theory of experience.’ (p. 3)

The increase of non-traditional students in college study and diverse learning coupled with the effort of colleges to provide access, and ensure retention and completion was noted by Kerka, (1989) and Baxter Magolda (1999) as a reason for colleges to provide various opportunities to apply theory to practice, resulting in experiential learning.

Kolb and Fry (1975) created a model out of four elements of Kurt Lewin’s reflection of a spiral of steps that consist of a circle of planning, action, and fact-finding regarding the effect of the action. The authors noted that the experiential learning circle began at any one of the following points: concrete experience, observation, and reflection, the formation of abstract concepts, and testing in new situations.

Kolb (1984) posited that experiential learning theory was rooted in the work of various scholars regarding theories of human learning and development, particularly John Dewey, Kurt Lewin, Jean Piaget, William James, Carl Jung, Paulo Freire and Carl Rogers. The need to develop a holistic model of the experiential learning process was described by Kolb as relevant to adult development.

As students become immersed in the workplace during their studies or simulations like laboratories or professional operations, they gain experiences that enable job placement. According to BSU (2007a) a typical example of immersive learning is *NewsLink Indiana* at Ball State, where

the student-run professional news operation allows students to participate in the daily operations of a real-life newsroom. During the full-credit, semester-long experience, students handle all the production duties—reporting, shooting, directing, editing—for live newscasts that air on the local PBS station and NPR affiliate and are posted on the Web. (¶ 2)

The Institute for Digital Entertainment and Education (IDEE) at Ball State also provided the opportunity for telecommunications and theatre students to “put their creative ideas to work. They learned from industry experts how to use state-of-the-art cameras and technology to create webisodes and film shots, but those lessons turned into actions when students got into production” (BSU, 2007j, ¶ 4).

Kolb and Kolb (2005) defined experiential learning space in experiential learning theory paradigm as
 attracting and repelling forces (positive and negative valences) of the two poles of the dual dialectics of action/reflection and experiencing/conceptualizing, creating a two dimensional map of the regions of the learning space. An individual’s learning style positions them in one of these regions depending on the equilibrium of forces among action, reflection, experiencing and conceptualizing. (p. 19)

The ability to work as a group in the learning process enables the learners to conceptualize ideas and establish standards for future references. Melles (2004) stated “the use of group work in higher education is linked to teamwork skills” (p. 217). The justification of group work in colleges is a reaction to the demands of industry for additional skills for students (Ackermann & Plummer, 1994; Bourner, Hughes, & Bourner, 2001; Mutch, 1998).

Collaborative Learning

Collaborative learning strategies were noted by Love and Love (1996) to “enhance learning by actively incorporating social and affective dynamics between students, and between students and faculty” (¶ 8). The importance of collaboration and practice is crucial to the success of teaching and learning in a classroom. The interaction between the instructor and the students enables both parties to have an understanding of the learning process. It enables students to gain control of their learning as active learners (Kremer & McGuinness, 1998; Leki, 2001).

Collaboration was identified by Kellogg (1999) as a source to develop learning communities and impact positively the holistic learning experience of the student. The existence of institutions of higher education is dependent on student learning, thus the need to provide social, economic and intellectual support, which the inclusion of subordinates, peers, superiors and other stakeholders would achieve. Carlsmith and Cooper (2002) stated, “Students worked significantly harder for and learned more from the cooperative learning components than from the traditional lecture and text-based components” (p. 132).

Lee, Ng, and Jacobs (1997), however, believed that despite the linking of collaborative learning to improved thinking and problem solving, it was not certain if group work improved learning experience. Kremer and McGuinness (1998) confirmed that the outcome remain “a matter for conjecture” (p. 48). According to MacCallum (1994) collaborative learning varies substantially among students. Participation of students in group work has been noted to be associated with teaching and learning theories. Student-centered learning, experiential learning, collaborative and cooperative

learning, constructivism, and problem-based learning were identified as tools to enrich students' learning (Ackermann & Plummer, 1994; Hodder, 1998; Lejk & Wyvill, 2001; McGraw & Tidwell, 2001; Nance & Mackey-Kallis, 1997; Yin, 1994).

Panitz and Panitz (2004) opined that “Collaborative learning is a personal philosophy, not just a classroom technique. In all situations where people come together in groups, it suggests a way of dealing with people which respects and highlights individual group members' abilities and contributions” (¶ 4). The strength of collaborative learning is dependent on the cooperation of group members. Competition is discouraged in groups in order to foster teamwork and cohesion. Collaborative learning also encourages groups of students to work together in and out of the classroom which foster relationships (Brufee, 1993).

Participation in class discussions, written assignments, and specially designed examination questions to promote critical thinking were noted by Schafersman (1991) to encourage critical thinking. He added, “Critical thinking cannot be taught by lecturing; critical thinking is an active process, while, for most students, listening to lectures is a passive activity” (¶ 34). Constructivism and problem-based learning has been noted to be valuable in collaborative learning.

Constructivist Learning Theory

Constructivist approaches to teaching are based on various scholars' contributions such as Vygotsky's theoretical contributions to the development of curricula and teaching strategies (Terhart, 2003; Vygotsky, 1978). According to Terhart, there were four types of theoretical contexts in constructivist didactics: radical constructivism, the neurobiology of cognition, systems theories, and current conceptions of learning

developed in the field of cognitive psychology. The constructivist view of learning was noted as “encouraging students to use active techniques (experiments, real-world problem solving) to create more knowledge and then to reflect on and talk about what they are doing and how their understanding is changing” (Educational Broadcasting Corporation [EBC], 2004, ¶ 2).

Constructivism is hinged on the understanding of the student’s point of view to acknowledge, disapprove with evidence, or develop for further studies. Faculty in a constructivist classroom must be able to connect appropriately with the students, engage them in active learning, and encourage participation of all the learners (Harasim, Hiltz, Teles, & Turoff, 1995). Swing (2002) stated, “to produce learning outcomes in critical thinking, writing, reading, and oral presentation skills; connections with faculty; or time management skills, then a critical first step is to ensure that seminars are delivered with a high level of engaging pedagogy” (¶ 9). The opportunity to discuss at the level of the individual’s experience and reflect on the analysis would result in better judgment and the potential of yielding to superior reason.

In the constructivism paradigm, it is anticipated that people will construct their world of experience through cognitive processes. Young and Collins (2004) noted that the difference between this process and scientific orthodoxy of logical positivism is the “contention that the world cannot be known directly but rather by the construction imposed on it by the mind” (p. 375). According to Terhart (2003)

the constructivist approach was formulated and tested in the field of mathematics and science teaching, which has always had a relatively close relationship with empirical psychology of learning and cognitive psychology.

However, this new movement should not be considered as limited to this content area in that it appears explicitly with the claim to present a new approach in general didactics. (p. 27)

Yin (2003) reaffirmed the importance of asking good questions, being a good listener; being adaptive and flexible; having a firm grip of the issue under study, and being unbiased by preconceived notions. These are certainly great attributes to exhibit in a dialogue. In a constructivist classroom, students' questions and interests are highly valued and learning is interactive, with great emphasis on the knowledge students possessed previously. As the teacher helps the students to construct their own knowledge, there should be room for negotiation.

A report of the EBC (2004) stated, "Constructivism is basically a theory - based on observation and scientific study - about how people learn" (§ 1). It gives an understanding that the experience and reflection of people influence their understanding and knowledge of the world. The importance of allowing students to construct their understanding of phenomenon cannot be over-emphasized; it will enable students to share their experience and encourage participation.

The use of constructivism in a classroom encourages students to articulate themselves and develop both social and communication skills. EBC (2004) noted the importance of students exchanging ideas and negotiating with others in order to evaluate their contributions in a socially acceptable manner. Indeed, students would have to interact with others, promoting interpersonal communication skills that would be useful in the workplace.

Alvarez et al. (1990) confirmed that case studies have been used to develop critical thinking; therefore the use of case studies will be appropriate teaching tools to help develop critical thinking skills. Nickerson (1987) noted the characteristics of a good critical thinker as someone who

uses evidence skillfully and impartially organizes thoughts and articulates them concisely and coherently distinguishes between logically valid and invalid inferences, sees similarities and analogies that are not superficially apparent [and] can learn independently and has an abiding interest in doing so, applies problem-solving techniques in domains other than those in which learned. (¶ 13)

Project management in small teams is widespread in IT industries and the problem statement of the project should be open-ended and structured in a way to encourage critical thinking.

Problem-based Learning

John Dewey [1859-1952], an American philosopher, psychologist, and educational reformer noted problem-based learning to be an offshoot of inquiry training. One of the early uses of problem-based learning documented was in the early 1950s, pioneered at Case Western Reserve University. It was subsequently used as a teaching strategy and curricular design at McMaster University, Canada in the late 1970's (Jones, 1996; Baker, 2000). Cognitive Constructivism by Piaget and Social Constructivism by Vygotsky are two theories that support problem-based learning. These two theories are noted to favor student autonomy, meaningfulness, personal motivation, team choice, common interest, social dialogue, which are major attributes of problem-based learning. Barrows (1998) opined that problem-based learning is both a curriculum and a process.

Problem-based learning is utilized extensively in medical schools because of the ability to have hands-on-practice. Duch, Groh and Allen, (2001) noted that about 80% of medical schools use problem-based learning to teach students about clinical cases. According to Duch et al., problem-based learning is used for most programs in some colleges like the University of Maastricht, the University of Delaware, Stanford University, and Samford University. Pew Charitable Trusts, an independent organization, gave over \$600,000 to the University of Delaware and a comparable grant to Samford University in Alabama to study how to reorganize traditional instruction using problem-based learning. The Trust has consistently added more funding opportunities over the years for research into and implementation of problem-based learning.

Problem-based learning is student-centered and only requires facilitation of an instructor. In the project/problem paradigm, the students are assigned to small learning teams and encouraged to learn through complex, real life projects or through the investigation of a problem. This type of classroom interaction has been noted to promote skills required for various industries. This learning method was expected to prepare students for various careers that involve projects and problem solving (Duch et al., 2001). Problem-based learning prepares “students to think critically and analytically, and to find and use appropriate learning resources” (Samford University, 2006, ¶ 8). This will boost their leadership skills as they interact with each other and promote participative leadership in particular (Crawford, Brungardt, & Maughan, 2002). Participative leadership is based on inclusion in decision making and problem solving, thus accommodative of divergent views.

Participative Leadership

Bolman and Deal (1997) viewed participative leadership “as a matter of style and climate rather than as a way to share authority” (p. 132). This is because leaders still make the final decision irrespective of participation of others in the decision making process. Teamwork forms the basis of participative leadership where team members feel a greater sense of contribution to the control of the team’s destiny. Such leaders are able to build a cohesive team that works together for the greater good of the organization. According to Likert (1967) this will create psychological bonding because team members can learn to trust each other as they work well together at different levels.

Information sharing is germane to the effective leadership. According to ChangingMind (2007) effective leaders “use a participative style, managing at the group level as well as individually, for example using team meetings to share ideas and involve the team in group decisions and problem-solving. By their actions, such leaders model good team-oriented behavior” (¶ 5).

Participative leadership is also known as democratic leadership where subordinates become part of the decision making process; they are at liberty to express their opinions without fear of reprimand. This form of leadership believes that input from everyone who has ideas in the group, irrespective of their position in the group, will produce an ideal and enhanced working environment. This in turn will promote participation and contributions from group members, making them feel important and dedicated to the decision-making process, even though the leader makes the final decision (Crawford, Brungardt, & Maughan, 2002).

Collaboration in participative leadership has been noted to assist in developing people skills and motivation to work, even though participation of everyone in decision-making could result in slow decision-making and low productivity, if not properly managed. To avoid this, Chrislip and Larson (1994) stated, “If you bring the appropriate people together in constructive ways with good information, they will create authentic visions and strategies for addressing the shared concerns of their organization” (p. 14).

Diversity in Higher Education Enrollment

Multiculturalism was contextualized as a democratic outcome involving what students learned in college and the effect and benefit to the larger society as they eventually interact with a diverse world (Antonio, 2001; Gurin, Dey, Gurin & Hurtado, 2004; Hurtado, 2003). The importance of a diverse campus was highlighted by Villalpando (2002). He noted that understanding students' racial ideologies and beliefs was crucial in higher education. According to Villalpando

By fostering an environment that, at a minimum, includes and reflects the contributions and perspectives of a diverse population—or promoting and emphasizing “diversity and multiculturalism”—the expectation is that the entire university community will benefit through the enhanced multicultural educational experiences of its students. (p. 125)

Bey (2004) noted that multiculturalism enhances students' education and social well-being. The issue of diversity goes beyond demography; it encompasses pedagogy, the concept of community and institutional mission. Smith, Wolf and Levitan (1994) indicated that institutions would be more academically and socially conducive if the campus community, especially students, is well educated on the importance of diversity.

Moses (1994) opined that higher education in United States has consistently paid attention to the importance of diversity and the need to prepare students for the world they live in. The author noted that “diversity in and of itself leads to institutional excellence” (p. 14).

Leadership in higher education must be persuasive about the importance of international and domestic diversity. Openness to an intercultural dialogue about intercultural relations expands the mind. Otten (2003) gave credence to diversity by claiming that

the experience with a rapidly growing number of international programs throughout Europe and the research on diversity policies in the United States and other countries show the necessity for serious consideration of the personal, social, and professional challenges that accompany international education. (p. 22)

Many higher education organizations are committed to effective leadership in higher education by collaborative effort. The American Council on Education (ACE) is focused on ensuring that higher education issues are well articulated and that public policy on higher education is advocated. The ACE, established in 1918, is the major coordinating body for the entire nation's higher education institutions. They advocate diversity, most especially access for women in higher education. Their responsibilities are representation, leadership development, and service (Mingle, 1997).

Love and Love (1996) believed that “strong cultural forces have acted as barriers to efforts at reforming and transforming higher education, but now forces within and out of higher education have gathered that are exerting tremendous pressure on the entire

enterprise” (¶ 1). They noted that education has been struggling with the notion of increasing student-learning experience, which is disintegrated due to the divide between faculty staff, student affairs professionals, and the community. Jackson and Ebbers (1999) asserted, “academic-social divide are the barriers between academic and student affairs that prevent collaboration” (¶ 1).

Moses (1994) discussed students’ success and diversity. The author raised pertinent questions about the characteristics of student success, how those characteristics relate to institutional diversity, and if an institutional commitment to diversity diminishes the quality of student experience. With support of literature, she asserted that “diversity in and of itself leads to institutional excellence” (p. 14). The role faculty play in promoting quality and excellence was discussed. She opined that the presence of a diverse faculty in a college contributed to institutional excellence. Moses recommended methods and techniques in assessing the success of institutional transformation for diversity.

The experiences and competencies acquired in intercultural student exchange programs are an enriching path to professional development and personal growth. The primary goals of international student exchange are academic. Sowa (2002) stated that international student exchange programs contribute substantively to participants’ individual development and international understanding. Robbins and Orr (2004) confirmed that “students who participate in either study abroad or in shorter-term study tours are more knowledgeable with respect to international affairs and tend to be more reflective and self confident ” (p. 51).

The importance of student exchange program in institutions of higher education and state governments was highlighted by Sowa (2002) as a way of competing in the global market place and maintaining U.S. economic strength. Fugate and Jefferson (2001) theorized that the academic community had fallen behind in getting students ready to be global citizens who can compete with other nations, working or living in different countries. Research had shown that students who participated in exchange programs were more reflective, more prepared to help others, more knowledgeable with respect to international affairs, and more self-confident (Pandit, 2007; Sowa 2002). They exhibited personal development, increased language proficiency, and the cultivation of a comparative perspective and cross-cultural understanding. Such diverse enrollment also included organizational benefits that comprise student recruitment, alumni giving, and faculty development (Sowa, 2002).

Various research studies posited that student exchange programs were a valuable and crucial component in internationalizing colleges and universities (Sowa, 2002). Students who participated in exchange programs or took classes with international students were more likely to assist others and have respect for international culture which would positively affect their career goals (Kraft, Ballantine, & Garvey, 1994). Burrell and Kim (1998) confirmed that college students in the United States would gain tremendously from interaction with international students which would improve their cultural competence.

Communication and Conversation Theory

Communication was noted by Bradley (1984) as dynamic, not static; it involves changes and effects as the elements interact. The importance of feedback was advocated

by Shannon and Weaver (1964) as crucial to human communication process. Kolb (1984) also emphasized the importance of feedback; he noted learning is followed by feedback through an iterative circle of experience. Human Communication can be described simply as communication among humans, involving multiple, substantively distinct processes. Human beings are complex in nature. The acts of communication is systematically aligned to suit the sender most of the time rather than the receiver, subsequently amounts to noise as attributed by Shannon and Weaver.

Human communication is affective because our emotional responses (subjective evaluations) affect the way we communicate with others and the way others communicate with us. Communication is personal in the sense that the meaning attached to it exists in the participants and not in the non-verbal symbols employed in communicating. Communication becomes active when used as a tool to control the environment, to affect and influence other people because it provides satisfaction to the communicator, without any intention to influence others or control the environment (Craig, 1999; Littlejohn & Foss, 2005; Peters, 1999).

Laurillard (1993) opined that conversation theory was developed to challenge traditional course delivery method; she noted the lectures system were effective for elite groups of dedicated students but would be less successful for teaching the current student population. According to Laurillard (2002), “The characterisation of the teaching-learning process as an iterative ‘conversation’ is hardly a new idea” (p. 87). Dialogue is collaborative and is regarded as a reciprocal conversation between two or more entities. Littlejohn (1992) offered “communication does not happen without meaning, and people create and use meaning in interpreting events” (p. 378).

In an academic learning environment, continuous conversation with students will enable clarity and precision. As people dialogue in a conversation theory class, they learn to understand other's perspectives and reevaluate their positions. Conversation theory however, has its disadvantage in that the participants may stay away from the main subject under discussion or spend too much time on a particular subject to the detriment of another. This can be minimized by the instructor's ability to keep students on task. Making an agenda for each class session and constantly reviewing it for consistency is another form of control (Atherton, 2005).

Communication is crucial to the success of information and communication scientists. As the evolving new technologies create challenges to the world, IT professionals must be apt to respond to the different needs of the consumer. Universities will be prudent to produce graduates who are people-friendly individuals and can adequately manage the amorphous challenges of organizations. Using conversation theory in ICT courses involves presentations and feedback. Students are assigned to groups to encourage collaboration and relationship. As they engage in dialogue, the students learn how to conduct themselves in open discussion forums (Craig, 1999; Atherton, 2005).

Summary

Literature relevant to creative pedagogy and the purpose of the research were reviewed in this chapter. Prior studies conducted by various researchers on experiential learning, collaborative learning, constructive learning theory, problem-based learning, participative leadership, group and teamwork, diversity in higher education enrollment, and communication and conversation theory were discussed. In the next chapter the methodology of this research will be discussed.

CHAPTER 3

METHODOLOGY

Introduction

This chapter discussed the methodology adopted in this study and the process of participant selection. The importance of the research design with discussions on the data collection procedure employed in the study was emphasized. The attributes of the general population provided an understanding of the participants in this study. The process of coding and categorizing themes was summarized. Throughout the research, I have interchangeably used the terms, Center, Program, and CICS to refer to the Center for Information and Communication Sciences.

This study adopted a qualitative method, specifically a descriptive case study design with the intent to understand and explain the academic, social, and cultural phenomena of the graduate program at CICS. The selection of participants was through purposive sampling and snowball method. The data collection method adopted for this inquiry was interviews with corroboration of evidence from archival data.

The purpose of this research was to examine the pedagogy approach at the Center for Information and Communication Sciences based on instruction, social learning culture, professional development, academic achievements, and collaborative interaction among students, faculty, alumni, and colleagues in ICT industries. Three research

questions focusing on the impact of the teaching, learning, social, and leadership frameworks of the program formed the foundation of this research.

Research Questions

1. How do current students and the alumni of the program describe how the educational, technical, and social learning experiences at CICS impacted their professional experience?
2. How do CICS alumni define and describe professional success in relationship to the Center?
3. How do students and faculty describe the impact of the educational philosophy used in the CICS masters program?

Research Design

The Qualitative Paradigm

The importance of using a qualitative method for this study was to ensure richness of detail. Strauss and Corbin (1990) opined that the use of qualitative methods was an avenue to have better understanding and gain perspective on issues of current awareness or to acquire in-depth information that quantitative methods may not be able to convey adequately. They claimed that

qualitative methods can be used to better understand any phenomenon about which little is yet known. They can also be used to gain new perspectives on things about which much is already known, or to gain more in-depth information that may be difficult to convey quantitatively. (p. 47-48)

The choice of qualitative method for study enabled the examiner to participate in the information inquiry process and gather relevant data that would assist the readers in

understanding the phenomena under study. Strauss and Corbin (1990) defined qualitative research as "any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification" (p. 17).

Qualitative research is interpretive in nature and was noted by Marshall and Rossman (1995) to be informative because "the researcher gathers information about actions and interactions, reflects on their meaning, arrives at and evaluates conclusions" (p. 23). According to Capjon (2004), "unlike positivist research design agendas, which emphasizes pre-conception of the problems, hypotheses of probable findings, specification of research strategies and methods of analysis, qualitative research designs should leave possibilities open for discoveries in findings" (p. 38).

Qualitative research involves going to the natural environment in order to understand occurrences in perspective without manipulating the observed event. The use of qualitative research enabled the examiner to describe, explore, and explain the teaching technique, culture, and collaborative ability of the program at CICS. Hoepfl (1997) confirmed "qualitative research uses a naturalistic approach that seeks to understand phenomena in context-specific settings . . . where quantitative researchers seek causal determination, prediction, and generalization of findings; qualitative researchers seek instead illumination, understanding, and extrapolation to similar situations" (p. 47-48).

In the qualitative paradigm, the researcher is the instrument of data collection, with "attempts to observe, describe, and interpret settings as they are, maintaining emphatic neutrality" (Patton, 1990, p. 55). Qualitative research has an interpretive character, aimed at discovering the meaning events have for the individuals who

experience them and the interpretations of those meanings by the researcher (Hoepfl, 1997; Strauss & Corbin, 1990). Hoepfl further stated, “The researcher acts as the ‘human instrument’ of data collection” (p. 49). Strauss and Corbin (1990) confirmed that the researcher must possess “the attribute of having insight, the ability to give meaning to data, the capacity to understand, and capability to separate the pertinent from that which isn’t” (p. 42). Patton (2001) confirmed that the credibility of instrument construction in qualitative research was dependent on the researcher; according to Patton, “the researcher is the instrument” (p. 14).

Why is Descriptive Case Study suitable for this research?

Descriptive case study method was the choice for this study because CICS is identifiable as a group and a limited sample of the population can be the focus for data collection. Eisner (1991) and Hoepfl (1997) noted that the descriptive nature of qualitative research provided an avenue for integrating expressive language. The choice of descriptive case for this study facilitated the ability to understand and depict the meaning assigned to experiences of the participants. Capjon (2004) stated,

Conducting case study research requires that the researcher can ask good questions and be a good listener who avoids preconceptions and his or her ideologies or biased notions. He or she must have a firm grasp of the issues being studied. (p. 43)

According to Tellis (1997a), the “case studies are multi-perspectival analyses”, which capture the voices the voices and perspective of both the participants and the group in which they belong including “the interaction between them” (¶ 7). Yin (1984) stated that case study research method is “an empirical inquiry that investigates a contemporary

phenomenon within its real-life context when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used” (p. 23). The use of descriptive case study in the qualitative paradigm enables a better understanding and a comprehensive view of the phenomena to gain meaningful data which is rich with details (Hoepfl, 1997; Stake, 1978, 1995). Descriptive case study has also been used increasingly in the education field and it most appropriate for research in education (Tellis, 1997a).

Hoepfl (1997) stated, “Qualitative research has an interpretive character, aimed at discovering the meaning events have for the individuals who experience them and the interpretations of those meanings by the researcher” (p. 49), thus supporting the need to ensure that the responses of the participants, and the analysis of archival data are descriptive. The importance of incorporating expressive languages in order to accommodate the participant’s voice in the text was identified (Eisner, 1991; Lincoln & Guba, 1985; Patton, 1990; Stake, 1995; Yin, 1994).

Tellis (1997b) opined that “case study is known as a triangulated research” (¶ 31). The use of multiple data collection methods in the research enables the examiner to adopt triangulation in order to strengthen the research findings and conclusions. Triangulation has the ability to strengthen research and ensure its credibility (Mingers, 2001). Yin (1984) confirmed that using multiple sources of data would ensure triangulation. The process of corroborating evidence from archival data and providing member checking was an attempt at triangulation. Capjon (2004) stated, “Case study inquiry deals with distinctive situations with many more variables than the focused ones. Therefore many sources of evidence are called for, which need to converge in a triangulation

fashion” (p. 43). Mathison (1988) confirmed “triangulation has risen an important methodological issue in naturalistic and qualitative approaches to evaluation [in order to] control bias and establishing valid propositions because traditional scientific techniques are incompatible with this alternate epistemology” (p. 13).

Participants

CICS students, faculty, and alumni were the intended population of the study. The population consisted of approximately 60 students, 1,300 alumni, and 7 full-time faculty members. Those to be included in this study met the criteria for the study due to their association with CICS as a subgroup of student, faculty, or alumni. The intended size was a range of 12 -15 participants. According to Patton (1990),

There are no rules for sample size in qualitative inquiry. Sample size depends on what you know, the purpose of the inquiry, what’s at stake, what will be useful, what will have credibility, and what can be done with available time and resources. (p. 184)

To capture fully articulated views based on the purpose of inquiry in this study, twelve participants with four participants in each category of the subgroups were interviewed.

The students at CICS came from different nations and were of various age groups and educational qualifications. Most of them were full time students while some were part time students in employment. The Center provided graduate assistantship positions for many of the full-time students, while other departments at BSU with IT obligations employed some of the remaining students. The students were usually involved in the different units of the Applied Research Institute that consist of six industry-supported laboratories namely Convergence, Networking, Digital Media, Applications, Wireless

Innovation, and the Network Integration Center (BSU, 2007c). Four of the laboratories are dedicated to assist students gain valuable technical experience.

CICS has over 1,300 alumni who work in different spheres of IT, business, commerce, insurance, education, and health care industry. Availability was primary for participation in this study from the pool of alumni. Participation for all participants was voluntary and confidential. Alumni who graduated two to ten years ago from the program were interviewed. The present faculty at CICS possesses outstanding academic accomplishments. All of them have professional experience with required academic qualifications, are tenured and have produced numerous academic publications (R. Steele, personal communication, September 10, 2007).

Recruitment Process

The recruitment of participants was through email messages and verbal communication (see Appendix D). Though the Institutional Review Board (IRB) rated the study as 'exempt' status (see Appendix B), all the participants had an opportunity to sign an informed consent form for research purposes (see Appendix E). All those who participated in this study met the criteria for the research due to their association with CICS as a subgroup of student, faculty, or alumni. Due to the qualitative nature of this research, and to intentionally select participants who fitted the selection criteria, purposive sampling was the selection technique.

Purposive and Snowball Sampling Techniques

Using purposive sample technique to identify the participants in this study ensured the specific subset of the population in the sample. Even though the participants from present students, faculty members, and alumni were purposefully chosen,

participation was voluntary and the recruitment was confidential. The intention to have a clear rationale or criteria for selecting the participants from the subgroups was to have credible and trustworthy data. Purposive sampling enables the researcher to target a particular population and select participants based on affiliation with the group (Patton, 1990; Trochim, 2000).

Weiss and Sosulski (2002) stated, “Purposive sampling is a sampling method in which elements are chosen based on purpose of the study. Purposive sampling may involve studying the entire population of some limited group . . . or a subset of a population” (¶ 34). Patton (1990) wrote extensively on purposive sampling, noting it helped to inquire intensely rich information. He stated, “The logic and power of purposeful sampling lies in selecting *information-rich cases* for study in depth” (p. 169). Information-rich cases were described as “those from which one can learn a great deal about issues of central importance to the purpose of the research” (Patton, 1990, p. 169).

This study on immersive learning at CICS targets a specific group, which is the CICS community of students, alumni, and faculty. In purposive sampling, the sample is determined from one or more specific predefined groups (Gay, Mills & Airasian, 2006). Each of the subgroups at CICS told their stories from different perspectives of experience and impartation, thus utilizing purposive sampling resulted in the choice of participants who were most suitable for the particular purpose of the study.

Gay, Mills, and Airasian (2006) stated that purposive sampling “is the process of selecting a sample that is believed to be representative of a given population” (p.113). The use of purposive sampling enables “researchers to handpick the cases to be included in the sample on the basis of their judgement of their typicality” (Cohen, Manion &

Morrison, 2000, p. 103). Due to the qualitative nature of the research, it was crucial to interview participants who would provide an understanding of immersive learning at CICS. Purposive sampling enabled the selection of twelve participants that met the purpose of this study, which is to gain insight into CICS educational and immersive learning culture.

The study also made use of the snowballing sampling methods in order to enable participants to identify others who were willing to participate in the study. Snowball sampling depends on referrals from initial participants to acquire new participants. Snowball sampling is a method used where existing participants in a study can recruit prospective participants amongst their acquaintances (Heckathorn, 1997). The decision to include this sampling method was to ensure a robust participation from each subgroup. Patton (1990) confirmed the veracity of this method.

Salganik and Heckathorn (2004) noted that snowballing facilitates continuity and guarantees participation. According to Patton (1990), snowball sampling assists in categorizing people with specific characteristics needed in a research. Some of the participants were requested to recommend others who met the criteria and would be available for the study. Snowball sampling became useful to ensure that the part of the population [alumni] less accessible was reached. In order to reduce association bias of this form of referral process, not every referral was utilized. Heckathorn (1997) confirmed that in snowballing sampling, not using every referral would avoid personal bias.

Accessing the Field

The process of conceptualizing the research field beyond the physical location and the interview process is what drives a great researcher (Cohen, Manion & Morrison, 2000; Denzin & Lincoln, 2000). As a researcher, understanding of the field of qualitative research evolved with the research methodology and ethnographic classes I attended, and the various research studies I have done over the years. The process of defining the research field commenced with the decision of the topic for this dissertation. The peculiarity of CICS pedagogy became more evident as I continued to study different forms of higher education pedagogies. Inadvertently I became an instrument of data collection.

According to Merriam (1998), “In qualitative study the investigator is the primary instrument for gathering and analyzing data, and as such can respond to the situation by maximizing opportunities for collecting and producing meaningful information” (p. 20). Miles and Huberman (1994) noted that one of the attributes of a good researcher is the ability to be familiar with the “phenomenon and the setting under study; to have strong conceptual interests and good investigative skills” (p. 38). I set out to do this by conducting a pilot study with a research class in spring semester 2007 to help me further understand the research field and prepare research questions for the study.

After the doctoral committee approved the dissertation proposal and the IRB requirement was met, I sent out emails to potential participants. During a period of six months, the twelve participants were interviewed. I asked for their time and location preferences because I wanted to be accommodative in the interview process. It was important to build an atmosphere of trust and confidence as I entered the field, so I

informed them of the confidentiality clause and the right to withdraw at any time from the study if they desired to do so.

The date, time, and venue of the interviews were set according to each participant's preferences. The interview field was easier than I expected. I was apprehensive as I entered into my first interview space. I wanted to ensure that I collected data as a researcher and not as an alumna of the program. It was important to create an atmosphere conducive for the interviews. The interviews were conducted in a professional manner with optimal privacy. The participants were welcomed, briefed about the dissertation goal, and given an opportunity to sign an informed consent form for research purposes. The interviews were semi-structured to accommodate expressive comments from the participants. In preparing for collecting data, I relied on the assertion of Yin (2003) that noted the importance of asking good questions, being a good listener, being adaptive and flexible, having a firm grip of the issue under study, and being unbiased by preconceived notions. During each of the interview sessions, I took notes and recorded the sessions on a digital tape recorder for transcribing.

Data Collection

Data collection was in the form of single interviews of between sixty and ninety minutes from each of the students, faculty, and alumni recruited for the study. The information collected from the study was corroborated by reviewing archival data from the master's program. The research questions formed the basis to generate interview questions and guided the interview process and the archival data analysis process. In the spirit of transparency, it would be appropriate to declare that my prior knowledge of the

topic could have been a bias, so I deliberately refrained from providing my opinion on issues during data collection.

Interviews

Yin (1994) considered interviews as a significant source of information in case study. There are three major formats, namely the open-ended questions, focused based questions, and structured questions also known as surveys. In order to explore the experience of the participants in this study, open-ended questions in a semi-structured interview format helped to gain latitude in response and accommodate follow up questions. Semi-structured interview format is one of the most frequently used qualitative methods to gather extensive and rich data from the participants (Patton, 1987; Bogdan & Biklen, 1998). According to Bogdan and Biklen, semi-structured interviews enable the “subjects to freely express their thoughts around particular topics” (p. 3).

The use of open-ended questions was an effective tool in interviews, because it enabled the freedom that results in rich data content emerging from the informants (Yin, 1994). Open-ended questions enabled participants to tell their story in their own words. Drake (1989) stated, “One reason why open-ended questions are helpful is that they convey a strong interest in what the other person has to say on the topic” (p. 2). This became evident during the interview process as different participants spoke more elaborately topics of apparent interest.

The open-ended interview questions were developed from the research questions (see Appendix A) and as anticipated, these questions encouraged the participants to talk freely. The questions enabled the participants to relate their experiences and provided insight to the concept of success in the program. I [the researcher] personally

administered the interviews in order to ensure effectiveness and confidentiality. It was important that I ask the right questions; therefore, I examined the interview questions with the feedback acquired during the pilot study I conducted in 2007 and the suggestions from a faculty at CICS. This process was helpful in modifying my questions to be more accurate and relevant to the research questions.

I started every interview by identifying the purpose of the study and thanking the participants for partaking in the study. The interviews were audio recorded, while I took notes of attention-grabbing issues during the inquiry process. Corsaro (1981) noted that analyzing field notes with other data would assist in ascertaining codes. The recorded interviews were subsequently transcribed and coded. I endeavored to handle the information collected confidentially by providing pseudonyms for the participants at the point of transcribing. The transcripts were summarized for analysis with additional coding, and thematic categories emerged through the process.

Archival Data Analysis

The chronological information collected during the interview sessions was crosschecked for accuracy from documents available at the Center and from information available on the Center's website. The information retrieved from the documents was used to substantiate information collected from the participants of this study and used as a guideline to analyze the data received from the interviews. Some of the documents are publicly available in the Center's library; while some are part of the private collection of the founding director and current faculty of the Center. Hoepfl (1997) opined that content analysis is very valuable to qualitative researchers.

Kolbe and Burnett (1991) stated, “Objectivity is a fundamental component of content analysis because it encompasses details that directly affect the overall quality of the judging process” (p. 247). Nightingale and Cromby (1999) opined it was important “to explore the ways in which a researcher's involvement with a particular study influences, acts upon and informs such research” (p. 228). The need to be careful about the interpretation of documents was also noted by Tellis (1994a). Tellis described such documents as communication between those in the study or represented in the study, therefore, he advocated the need for the researcher to determine the usefulness of the documents.

Data Analysis

Yin (1994) stated, "Data analysis consists of examining, categorizing, tabulating, or otherwise recombining the evidence to address the initial propositions of a study" (p. 102). Descriptive approach was the platform for analyzing data in this study. Hoepfl (1997) stated, “Qualitative analysis requires some creativity, for the challenge is to place the raw data into logical, meaningful categories; to examine them in a holistic fashion; and to find a way to communicate this interpretation to others” (p. 55). The process of open coding was synonymous with identifying the themes that emerged from the data collected.

Coding is the process of identifying and classifying data. I was systematic and selective to ensure that different categories were identified from the codes. Strauss and Corbin (1990) identified open codes as the process of "breaking down, examining, comparing, conceptualizing, and categorizing data" (p. 61). The coding process started when I transcribed the data and continued after summarizing the transcript. Before

finalizing the coding process, I read the transcripts repeatedly to identify words, phrases, and expressions, which I modified and re-examined throughout the analysis process.

According to Hoepfl (1997), coding will “create descriptive, multi-dimensional categories which form a preliminary framework for analysis” (p. 55). Tellis (1997a) stated, “Establishing the significance or importance of themes or findings is crucial; the discussion should ideally link these themes explicitly to larger theoretical and practical issues” (¶ 8).

There was a deliberate attempt to reproduce data accurately in the process of analyzing information collected from the participants and archival documents. Member checking was introduced in order to ensure trustworthiness. Lincoln and Guba (1985) noted that member checking helped to establish credibility of the researchers finding and to alleviate researchers’ concern of how they interpret the social worlds of others. Summaries of the interviews created by restating and paraphrasing the information collected from participants during the interview process were sent to them with a request that they indicate if it truly represented their responses. All the participants who responded indicated that the summary truly represented their response. Kuzel and Like (1991) indicated that member checking will ensure correctness and richness of the final report.

In order to ensure trustworthiness and credibility in this study, multiple sources for collecting data were employed. Merriam and Simpson (2000) noted that reliability and validity in qualitative research was possible through “triangulation-the use of multiple investigators, multiple sources of data, or multiple methods to confirm the emerging findings” (p. 102). Henwood and Pidgeon (1992) identified seven attributes of

importance of fit, integration of theory, reflexivity, documentation, development of emerging theories, sensitivity to negotiated realities, and transferability as criteria to characterize good qualitative research and ensure credibility.

Ethical Considerations and Researcher's Bias

My fascination with CICS had been from the time I got an international telephone call from the founding director in 2004 asking if I wanted to be a research fellow in the program. After graduating in 2005, I chose the program as my cognate for the doctorate program in higher education and continued to benefit from the exceptional experience CICS provided. My dissertation topic was not a clear-cut decision based on my perceived bias as an alumna of the masters program at CICS.

What would have been my greatest bias was my association with CICS, and this was highly compensated by my insider/outsider status. As I gathered information about the Center, I was conscious of reflexivity and aware of constructing meaning as an insider/outsider. My prior knowledge of the program as an alumna was an advantage to contribute knowledge and meaning all through the research process. According to Louis and Bartunek (1992), an insider/outsider approach to research would expand the existing perception and aid in the interpretation of behaviors.

I was able to conduct this research based on my prior knowledge of the program along with engaging in the process of sustained reflexivity, and I used member-checking procedure to ensure credibility. Member checking required sharing the draft of the analysis with the participants (Denzin & Lincoln, 2000; Strauss & Corbin, 1998). The participants read the summary of their interviews and verified the accuracy of the

information. The strength of case study is on the emphasis on context through the use of thick description, rich details and deep data (Tellis, 1997; Yin, 2003).

As an alumna of the program at CICS and as someone who has immensely benefitted from the program, it is crucial to remember that my primary responsibility in this study was the position of the researcher. I was obligated to report, present the information collected authentically, and capture the essence of the interview. In order to eradicate any conflict of interests that could hinder the credibility of the study, I engaged in a process of continual reflexivity to make my analytical thought process as transparent as possible. According to Willig (2001), “Personal reflexivity involves reflecting upon the ways in which our own values, experiences, interests, beliefs, political commitments, wider aims in life and social identities have shaped the research” (p. 10).

I endeavored to include the major concept of the interviews but deliberately excluded names, traceable personal information, venues, and occasions of occurrence for confidentiality. I adopted pseudonyms to conceal the identity of the participants and introduced member checking process to ensure that the narrative I generated from their interviews represented their perspective and that there was no misrepresentation or misinterpretation in the data collected. Lincoln and Guba (1985) proposed that criteria like credibility, transferability, dependability, and confirmability would enable researchers to establish trustworthiness. Ballinger (2006) confirmed that qualitative researchers developed alternate criteria to respond to positivist criticism of qualitative methods of inquiry.

Even though the limitation of qualitative studies starts with sampling because of the impossibility of representation of the population, the ability to assemble the

participants through purposive sampling and snowballing is crucial to getting specific participants (Marshall & Rossman, 1995; Patton, 1990). The lack of credibility associated with case study in the qualitative paradigm was not a limitation due to triangulation and reflexivity employed in this study. A negligible risk factor exists because of this type of research where the participants only recount their experiences and opinions on the subject matter. None of the participants indicated a risk or discontent during or after the interview sessions.

Summary

This chapter discussed the research method adopted in this study. The research design, identified as descriptive case study, and the suitability for this study were discussed. The process of recruiting participants for this study, the interview space access, and the process of data collection and analysis were also discussed. This chapter ended with ethical consideration and the researcher's bias in this study. The next chapter analyzed the findings of this study.

CHAPTER 4

FINDINGS AND ANALYSIS

Introduction

This chapter presented findings of the study in a thematic structure. It also discussed how classes are structured at the Center for Information and Communication Sciences (CICS). The findings were organized by the thematic categories that emerged from the interviews transcripts. During the process of transcribing the interviews, various codes emerged from the information and were classified into eight broad thematic categories. The process of coding is synonymous with identifying the themes that emerged from the data collected (Strauss & Corbin, 1990).

The process of coding the data commenced at the point of transcribing. In order to make the analysis interpretive with the perspectives of the participants incorporated, the process continued after transcribing the data. The transcripts were reviewed continuously to identify words, phrases, and expressions that were constant and recurring. These codes were modified and re-examined by continually identifying parts of the transcripts, which were developed in thematic categories, with the participants voices reflected. According to Patton (2001) in the process of coding, the researcher must make "use of standardized measures so that the varying perspectives and experiences of people can be fit into a limited number of predetermined response categories" (p. 14).

The importance of reflecting participants' voices was confirmed by Strauss and Corbin (1994) opining that it "must include the perspectives and voices of the people" (p. 274) being studied. The findings are descriptive and provide an understanding of the academic, professional, social, and cultural phenomena of the graduate program at CICS. The interview responses were analyzed along with archival data like meeting reports, memoranda, official records, and information from CICS website. The participants included in this study met the criteria for the study due to their association with CICS as a subgroup of student, faculty, or alumni, and they were all given pseudonyms for anonymity. A list of participants' pseudonyms appears alphabetically in Appendix C. The themes that emerged were:

1. Intense and Comprehensive Learning
2. Totally Immersive Experience
3. Outstanding Professional Development
4. Group Dynamics and Cohesion
5. Networking: Importance of Alumni Bond
6. Faculty Responsibility and Relationship
7. Enrollment Diversity
8. Engaging Pedagogy

Thematic Categories

Intense and Comprehensive Learning

The findings of the research indicated that all the participants considered the program intense and comprehensive. The concept of intensity was described by the

participants as the possibility of completing the program as a full-time student in eleven months. In addition, intensity was defined as being involved in industry related projects in every class, mandatory laboratory hours that also involve attempts at industry certifications, teaching and learning in the classroom, all-inclusive class participation, group work, amount of reading materials, expectation of professionalism, and deadlines.

Peter, a faculty member, described the effect of the intense program as a communal experience because all the students encounter the same course demand. In a research study by Boykin, Lilja and Tyler (2004) communal learning context was preferred to individual learning context. Jones (2005) and Spilka (1989) confirmed that teaching methods that encouraged communal learning assist students to be more effective in the learning process. Peter stated,

The intensity is such that everybody comes in; they are pressurized in a similar manner. They are all in the core classes together. I call it mutual suffering, in that not only are you suffering, the kid next to you is suffering as well the person in front of the classroom, but it goes beyond mutual suffering. It is more of a group goal, since we do a lot of group work; you really want that person in your group to be successful, because it reflects on you. Therefore, it is almost a forced bonding. You know the power that makes people flow together and the determination to see that they flow together.

George, another faculty member, described the teaching at CICS as “very high quality and very demanding,” with the students demanding and the pace also demanding. He discussed the intensity of the instruction and the learning experiences

I use a very involved Socratic method, and highly engaging I should say, and I am really proud of the fact that it is normal in my classes when they are not too large, that 100% of the students contribute 100% of the time, and this is rare in higher education. If I have thirty students in the class, I had them, honestly, every one of the thirty students had to say something in a classroom period and they do. Sometimes it is very brief. Some students participate much more than others; one of the challenges is to draw out the students who don't participate very much because of their psychological make-up . . . My relationship with my students is very intense. Some people call this in your face and some of the students resent it . . . but it is very effective and helps some people to grow, so I have been doing it. I am an experienced professor, and I probably will keep doing it this way as long as it is not destructive to people, so there is an intense relationship in the classroom.

Goodyear (2001) confirmed George's approach of facilitating participation among students in the classroom. He opined that in the process of knowledge construction "the most intense levels of interactivity are likely to occur" (p. 128). The tutor's role would be to assist the learners to participate in the process of knowledge construction activities.

Paul [faculty] expressed an interesting way to portray the intensity and comprehensive nature of the program. He depicted the education philosophy of CICS like an invasion; he called it the "shock him, hit him, stick to your guns" approach. This is evident in how the students are transformed in eleven months. This was necessary because of the extent he had to go to transform and energize them beyond their imagination. He stated,

I continue to be shocked when students say to me, ‘I have never written a paper,’ and I can’t believe what undergraduate students are doing in four years of college. They have never written a paper, they never worked in a team, they never put up a presentation, and they went to four years of college. We make them do that [at CICS] and we stick to it. The good news is the students are transformed at the end of the day.

Tim confirmed that there was no mystery to the notion that they [the faculty] wanted the program to “be an intense, total experience” for the students.

Some of the students prepare for the challenge due to prior knowledge of the program from their relationship with former students of the Center, while some are not prepared for the eleven-month intense program. Diya [student] was prepared; she claimed to know what she was getting into after an extensive discussion with her friends who were CICS alumni. Diya stated,

I knew exactly what I was getting into because a lot of people, I mean my seniors had told me about the program. I had a lot of talk with them and knew how stressful the program was. I knew it was an intense program, I knew what I was coming into, and I was totally prepared for it. I knew how the eleven months program worked, so I took the option. I knew how my life would work out in the next eleven months.

Even though Diya had no problem with technology because her undergraduate major was in technology, it was equally stressful. She stated, “It has been the most stressful eleven months that I have had and am still having. I have been probably annoyed with the entire project, doing five courses.”

Two of the students interviewed also shared how they were overwhelmed by the intensity of the mandatory technology classes. Lydia [student] acknowledged that she did not realize what she was getting into when she started at CICS. Kelly, an alumna, also shared this sentiment. She claimed that the technical classes were difficult for her and she struggled in the classes, but they turned out to be a great learning experience because she “learned so much,” and she stated grandly “I am glad I walked through the fire to get to the other side.” Carol [alumna] learned how to deal with the intensity of the classes by *thriving on chaos*, a term used by a faculty member in one of the foundation classes (Peters, 1988). She recounted how the majority of the students were full-time students with full load classes, had an assistantship or work and families, but still learned how to prioritize and “balance during chaotic periods, and still come out on top.”

Lydia [student] was informed that she “would be doing things with computers and technology” but never anticipated how technical it was going to get. The technology classes and lab assignments mostly overwhelmed her. She stated,

Well, I think I didn't realize what I was getting into; it's hard to say I didn't know exactly what to expect. I knew I would be doing things with computers and technology. I didn't know how technical it was going to get. I guess I was most thrown off by having to do the CISCO stuff. That is hard for me and that is really not something I enjoy. I like the leadership stuff; I knew that was going to be a big part of it – social learning and I felt that was something I needed to do. I just wanted a basic technology background and I feel I got that to a certain degree. But sometimes I feel that it goes deeper than what I want or need.

June [student] confirmed the force of the program in another dimension. She stated that the required reading were “sometimes so intense that [she] almost felt like there was no point in [her] doing the reading because [she] just [had] so much to do.” The dilemma was where to begin and not knowing whether she could finish before the deadline. She also believed students sometimes feel overwhelmed with the intensity of the program and the enormous responsibility of growing up and behaving like a professional.

The social learning program, however, has been noted to give a respite for the students. Tim, a faculty member, talked about the relationship of work-play activities. He recounted what he usually told incoming students.

We got people to understand through the social learning programs that you could do some things that were fun in an intense experience and at the same time be purposeful in doing it. As always, purposefulness was always a part of what we are trying to do. Every single thing in here has a purpose. It is not just to have you do some works so I can say I had you do some work; there is a reason for everything. Now I’m not being critical about the program by saying that. My point is that we only have you [for] eleven months. We wanted to get your attention quickly, focus your attention, and keep your attention so we can have you work at a level that allows you to learn as much as possible in the time provided.

Diya [student] attested to this, saying that the social learning at CICS helped the students to relax in the midst of their busy schedule and that it positively affected the students. Diya stressed the importance of the social events to the students’ well-being. She stated

I have a friend who is in another college doing a similar program. They study almost the same program, but they don't have a social learning aspect and that can be very stressful. It is enough that it is intense; there should be some form of relaxation or avenue to socialize. It is more like if it is so intense, you have no chance to do anything else except run labs and co. There should be opportunity to set time aside to relax. They don't have that, and I think the social side makes it [the program] really different. It is more positive than negative to the students.

The effect of the intensity of the program was not limited to the students alone. The members of the faculty are devoted to the program. Peter claimed being a faculty member at CICS was a challenging position and the upside and downside was that the program was "successful." They had to work hard to ensure they were up to date with technological advancement. According to him, "The eleven months program is a double-edged sword". He claimed the only down time he had between semesters was about two days. He narrated how the entire faculty members in the Center worked tirelessly to ensure that the students were successful and that the program was progressive. He stated further, "To have to stay current in the field, you have to do the research to get there, and moving in those directions in an eleven months process could be fairly torturous; hence, it consumes a lot of time."

Totally Immersive Experience

The concept of immersive learning experience was described by most of the participants as the foundation of the masters program. The program was built on hands-on learning theory over twenty-four years ago, long before the university [BSU] adopted this model as a fundamental component to academics at Ball State (BSU 2007g). Peter

[faculty] attributed the concept to the founding director who developed the process at the inception of the program and to the members of faculty who embraced the idea. He claimed the program had a culture of success. He further stated that the culture

is one defined as professional. It is one that is defined as being hands-on. I get a little chuckle when we talk about immersive learning and experiential learning. This program was based on that philosophy. There isn't a class that exists currently within this program that isn't an external touch to a client or a real world project that is going on. In [the class he teaches] the case study that the students are writing is in preparation for an international conference. How more immersive can that be, and the case they have been given is from an actual case that actually occurred in the industry for a client that happens to be mine. This is what we do; not everyone had done this.

Peter's expression summed up Tim's assumption that the importance of the Center's consistency in their purpose is to ensure that the students are engaged in "an intense, totally immersive experience" in order to produce leaders in the Information and Communication Technology (ICT) industry.

Peter stressed that CICS was based on immersive learning and that the experience prepares students for the ICT industry. He observed that some programs "do not perceive themselves as being capable of being experiential or immersive and hands-on in their learning." He believed it was an incorrect assumption, because any academic major could be tailored to include an opportunity for students to gain work experience through projects and professional development. Students will always embrace such an opportunity. He recounted a memorable experience he had in his first year teaching at the

Center, when a student in the program pleaded to join in a voice, data and video network project he was conducting with students in his class for a client. According to him, the student was not even registered in the class involved in the project, but he showed up on the site and pleaded “please don’t make me leave, I heard about it and it was so cool and I really wanted to come and help.” He noted that this experience and other similar ones demonstrated students’ commitment to the program.

The participants who were faculty members expressed that the unique nature of CICS was due to its experiential learning concept that involved a lot of hands-on experience. The need for students to be viable for employment with substantial experience is essential, due to increased competition among college graduates (Kolb, 1984; Kolb & Fry, 1975). There is an increase of experiential learning in colleges (Gettys, 1990), due to the conception that students who were involved in experiential learning experience in college had a better chance of employment upon graduation than those who do not have such experience (Garavan & Murphy, 2001).

The process of immersive learning at CICS differed from the normal expectation of completion of internship by students before graduation or involvement in one or more projects. It is embedded in all the classes. Tim declared that the students were exposed to problem solving across the curriculum. He expounded what they usually told the students, that

there was no mystery to the notion that we wanted it to be an intense, totally immersive experience for you, every classroom cycle coming through the door. You are ours for eleven months. It’s an immersive experience . . . you are only here eleven months, and you are really captured by this experience. You only

need to spend eleven months to get your Masters. That is the good side, the bad side is that you don't have a lot of spare time in that eleven months.

One of the participants, Steve, an alumnus, considered his study at CICS an immersive experience. He discussed how his undergraduate degree in Telecommunication influenced his choice of multi-media production as a career. This facilitated his consideration of CICS as a suitable masters program to fulfill his career aspiration. His involvement with technology management and the practicability of the curriculum at CICS endeared to enroll at the Center. While he was a student at CICS, Steve described his graduate assistant duty at the Center as an immersive experience. He was a full time student on the eleven months track, which he claimed was very involving. He worked 20 hours a week with divided roles between his supervising faculty, the founding director, the laboratory, and all other duties in the department. He cherished this experience because he saw himself more like an employee than a student. The opportunity to be part of projects helped him to grow professionally. Steve stated

Looking back, there were four distinct roles that I held there at the Center. But, then it all overlapped because it was so difficult to differentiate one from the other, in terms of the fact that they were all woven together, and it was a project-based approach to learning . . . it was like this is a project and I just went ahead and got it done, so that was the role I saw, it was more than being a student, a subordinate or researcher, more like a project manager or project team member.

Outstanding Professional Development

All the participants agreed that the program at CICS was built around professional development. The mandatory foundation classes that teach human communication skills,

team building, presentation skills, leadership skills, management skills, technology skills and problem solving skills were designed to ground the students in the professional world of Information and Communication Technology. Spilka (1989) opined that students provided with real world scenarios built stronger connection and are motivated to do well academically and professionally. The classes at CICS have mandatory laboratory hours that afford the students an opportunity to utilize real-world technologies to solve problems. The comment by Kelly [alumna] that her expectation was “to learn, be challenged, and gain new skills” was also shared by John [student]. He claimed he was grateful for the opportunity to acquire the requisite skills for his professional development because he was already utilizing the skills in his present career. As a student, he stated

while I have been at CICS, I have taken on a management role, and I have been a manager for nearly three years now. I have been able to utilize what I learned here in the program at work and also incorporate some of my present professional work into [what] I am doing for the program. I know that all I have learned will be useful indeed.

George [faculty] claimed that when students are enrolled at CICS, they are considered professionals in the industry. He reiterated the importance of adopting professionalism in the Center. Due to their constant involvement in industry-based projects at the Center, the students were already prepared for the challenges of the ICT industry. The focus of the program is to deepen their ability to work in the industry. He described how this was done, he stated,

The way we do that in particular is first of all; through the competencies of the courses . . . course competency is a content of the courses. Student will learn technology, for example if they don't know anything about that before. I have heard many students say my area of expertise is usability in technology. Students will say I knew nothing about this field before I came to CICS, and now I am at the leading edge of usability in the world. In usability, you need more experience because theoretical usability is not enough, but in fact the usability experiences we have here will enable students to do usability work immediately in the field when they go out. So the depth of the competency is developed here, then we also, I work really hard on the leadership component. I make students lead, not just to follow instructions but to produce instructions. I always ask students to add value, when they say the same thing I have said before. I say that is great but you have to add value, and that makes them believe, to develop the competency of leadership in them.

In order to ensure professionalism, George [faculty] involved his students in research and worked with them like professionals in the research institute he coordinates at the Center. The institute is operated on a professional level, "rather than simply a professor directing teams of independent researchers." This affords the students the opportunity to be immersed in a professional work environment and this generates more contact hours and closer relationship. June [student] described the educational philosophy as unique because of the opportunity to have a personal relationship with instructors and even members of their families outside the classroom, and still maintain a professional relationship at the Center. She stated "It's not normal . . . It has definitely shown me the

way to be professional, especially in someone's home, and etiquette; and learning experiences from having dinner with eight or nine people.”

Paul's relationship with the students is built on a strategy he labeled “knock them down and build them up.” He developed the concept of a heavy approach when students start at CICS and train the students to develop ‘backbone’ in order to survive the program and the ICT industry in general. He claimed when they come in young, they are very naïve and overconfident at times, but they soon realized that they had to be more assiduous as the year progressed. Paul stated, “towards the end of the year, most of them grow up, they are matured, they see what we are doing, why we are doing them, they understand.” The pressure of being a professional whilst in ‘school’ was however considered overwhelming for June [student], because of the expectation from the instructors. She asserted that sometimes the instructors forget that they were still students. She stressed

we're here to learn, and you need to teach us; rather than, ‘figure it out on your own, you're a big person’ . . . in real life, some of us just came from undergrads, so, we haven't been out in the work-field. So, we don't know how to write a plan, or an RFP, or certain things we've had to do without guidance. So, it is tough sometimes when you don't get guidance, and you're used to used to guidance, and then, [like] other Master's programs, students still get guidance, because it is a Master's program, and it is school.

There seem to be a deliberate effort at professionalism, and this was reflected in what all the participants mentioned about the consciousness to enforce a professional relationship in the Center. This was clearly reflected in one of the goals of the program

regarding the need to ‘develop professionalism’ (BSU, 20071). In order to ease the students into a life of professionalism, every class cycle started in a relaxed environment at a backyard barbeque orientation. Tim noted the students were adequately informed that they would be treated as professionals; that they would be respected as professionals as long as they earn the respect. A high standard was set for students upfront at the orientation. The shared values of the Center stated, “we hold fast to the obligation of responsible behavior. We consider it never enough to meet just the minimum expectations” (BSU, 20071). Tim added, “we wanted to drive their maturation, upward, with everything we did, because learning and maturation at the graduate level has a great deal to do one with the other.” In setting set a high expectation level for the students, they are informed

The more mature you are, the more you understand why things are been done.

Now if we aren’t doing things for a purpose we shouldn’t be here. But if we’re doing things for a purpose, that doesn’t mean that the students get it, we have to help you get it. And that motivates you to learn and that really is a significant part of what is different about here [CICS].

Both Tim [faculty] and George [faculty] described instruction at CICS as multi-faceted and multi-disciplinary respectively. Tim opined that it was imperative to learn how to write, speak, and do analysis in order to be a professional. There are a lot of emphasis in the classes on writing, presentations, problem solving and team work. The students are encouraged to take responsibility for their learning, thus they are charged to work hard from day one. The students are greatly impacted by participating in mandatory laboratory exercises and in projects from many outside sources. The program “offers

solid educational and laboratory experiences for those who wish to have a hands-on role in delivering the Information Age experience to the rest of the world” (BSU, 2007).

George analyzed the education field by drawing a distinction between multidisciplinary, interdisciplinary, and cross-disciplinary educational practices. He reiterated that CICS was a multidisciplinary program and the difficulty of such multidisciplinary degree should not be underestimated. It goes beyond the age of industrial education, where specialization in only one area is taught rather than produce renaissance men and women with multi-disciplinary attributes. George articulated that in education, both breadth and depth of experience was required for professionals.

Interestingly, Diya [student] considered being fresh out of college undergraduate degree a disadvantage because she had no prior work experience and hardly any hands-on experience, but the “professional outlook and discipline” the program enforced, however made it possible for her to excel. She described how she learned to multi-task, trying to succeed in multiple projects at the same time. According to her, the education philosophy at CICS is embedded in professionalism, thus she learned to be efficient despite the intensity of the program. She affirmed “I think it is a great experience, I now understand the stress of the working environment because it prepares me to face the real world.” Tim claimed all the students that went through his class had a fair understanding of his previous consultancy work and he engaged them in any current consultancy opportunity, which helps them to get ahead in the industry. He stated, “the range of students that came through [CICS] and succeeded is extraordinary and that is because [the faculty] got them to commit to their success right up front,” before they were admitted, thus mediocrity was not permissible.

What makes the program distinct from other programs, according to George [faculty] is the multi-disciplinary element that is demonstrated in the way the program deliberately and intensively structures its curriculum to provide a holistic approach to education. He drew a parallel with similar graduate programs of colleges that belong to the Information Telecommunication Education and Research Association (ITERA). In comparison, the program at CICS is multi-dimensional, “more deliberate, and intensive than other multi-disciplinary approaches of the other programs.” He described the program as being “truly multi-disciplinary, by intension and by intensity.” CICS promotes every aspect of the industry; it incorporates technology, management, policy, and leadership skills.

Student Social Learning Program (SSLP). Another form of professional development which some participants claimed makes CICS distinct from other programs was the Student Social Learning Program (SSLP). BSU (2009e) stated

just as learning doesn't take place only in the classroom, business does not always take place just in the workplace. Restaurants, social gatherings, the 19th hole—all are places where important business might be conducted, and we want to be sure you perform well in such nontraditional settings. That is what the Social Learning Program is all about. (¶ 1)

Paul [faculty] believed the second most important method of learning was the social learning aspect, because students learned how to handle themselves professionally. Kelly [alumna] considered the social aspect a very important part of the program and as crucial as the class work. It was an aspect of the program she enjoyed. The social learning aspect of the program became an avenue to socialize and learn in a non-conventional way

and presented avenues for networking. The social learning program provided Carol [alumna] an opportunity to socialize with other classmates and faculty at CICS outside the classroom. The various social events also enabled Carol to interact with some alumni of the program who shared about various job opportunities that could be available for her when she graduated.

The weeklong Colorado ski-trip, which was part of the social learning program, afforded Diya [student] a lot of contact time with US based CICS alumni. Prior to the ski-trip, she had very little contact time with them. She claimed that the mentorship program set up to achieve this was best suited for American students. Her argument was that most mentors eventually recommended students for jobs and as an international student; it was more complicated due to the need for employers to sponsor foreigners. Even though the number of international student has increased in the program, the difficult process of obtaining H1 visa affected the hiring of international graduates of the program (M. Allen, personal communication, July 25, 2007).

Adams (1992) noted mentorship to be crucial to the success of minority students in higher education. Faculty advisors have great responsibilities to ensure that students are provided adequate counsel and guidance. According to the Council of Graduate Schools in the United States (1990) faculty members are supposed to

demonstrate flexibility and critical thinking; a willingness to be challenged and challenge constructively; and the desire to help the student become better at research and teaching than they are themselves. Ideally, continued support and mentorship are provided throughout a student's later career (pg. 7).

Lydia [student] described the social learning experiences at CICS as highly significant to her learning. The various group activities helped her to connect with the other students, much more than she had ever done in her life. She declared that she felt closer to the people at the Center than she did in her high school in some perspective. She learned how to function in a group; appreciate other people's effort and make things work despite her busy schedule. She noted that the 'rope course' helped her mostly to feel more comfortable with her classmates. She was also excited about the social learning activities because she considered herself an introvert who needed some of the interactions the program offered. The Social Learning Program at the center "also schedules job placement seminars, workshops on honing presentation skills, and professional conferences" (BSU, 2007e).

Group Dynamics and Cohesion

The challenges of group cohesion determine the success or downfall of a team. People who belong to a team must be connected by social relationships in order to succeed (Forsyth, 2006). At CICS, teamwork is the norm. It commences with a 'rope course' in one of the foundation classes and goes on throughout the duration of the student's stay at CICS. All the students and alumni that participated in this study attested to the importance of group work and gave an account of their experiences of teamwork. Lydia [student] recounted how her experience during the 'rope course' boosted her confidence in her classmates and helped her to feel more comfortable with her classmates. Her involvement in various group activities aided her connection with other students in the program. She learned how to function in a group; appreciate other

people's effort and make things work despite her busy schedule. Brufee (1993) opined that collaborative learning encouraged continual relationship in and out of the classroom.

Carol [alumna] asserted that the existence of teamwork was what made CICS distinct from other programs. The program incorporates group projects and assignment in all the classes and this is also extended to out of class activities. The involvement of every team member in a group was intriguing to her. She noted that study hours were scheduled as a team and resources were shared. John [student] recounted his experience of *Accenture Challenge* and the effect on his group for a team project

it really made sense to me because it kind of tied everything I learned into a real life experience. You know the stress of it and all, down to the presentation, down to the last time. It was a real true-life experience. What I really thought about what was so good about it and I will never forget it, was that not only just were my peers working on it, we had a bond; a bond we never had earlier until the night before the presentation.

June [student] recounted a similar experience. The competition helped her to understand group dynamics and how the negligence of others could cause failure for the entire team. The competition had a different effect on Steve [alumnus]; after his team was eliminated during the first round, he questioned his decision to leave the team in order to get some rest before the presentation. He had lobbied strongly for someone to go and take a rest during the night when they were preparing for the presentation, but everybody declined, so he volunteered to take a break. After the elimination, he reflected on his decision to leave his teammates, and wondered if he stayed with the team to continue to offer his assistance that things would have turned out differently. The lesson for him was

that in spite of what happened, his team members were supportive and not vindictive. This singular incident helped him to understand team cohesion and the importance of taking responsibility for his actions.

June [student] reiterated that all her classmates got along very well and it was crucial because they were usually around each other a lot in the Center. However, there were instances when people disagreed with each other and these usually occurred when someone was slacking in their assigned task. Being in different groups in all the classes provide the opportunity to have close contact with most of her classmates, so June [student] was able to make a lot of friends amongst her classmates at CICS. She however preferred to work with students who were hardworking and willing to go the extra mile to do a high-quality job. She further stated

the type of work that everyone does . . . impacts the friendship you're going to have with that person. So, if you're a sucker, you might get along with other suckers, or if you're a hard-worker, and you like things done, you're probably going to get along with people that like things done. So, it's a nice little family, but everyone has issues in families.

The importance of group work was emphasized in the CICS philosophy, it stated "group/team experiences are essential to career preparation." Garavan and Murphy (2001) stressed that teamwork skills and communication skills are developed from cooperative education work placements. Considering that one of CICS educational philosophy was teamwork, therefore every class includes group assignments. It was important to be in reliable and cooperating teams in order to have a good learning experience and of course good grades. Kelly [alumna] observed that even though some

teams were true disasters, she was always fortunate to be in a team that exhibited restraints and were respectful to each other. She mostly identified with a group of other non-traditional students who were older and obviously more matured. Kelly was quick to say that it did not mean that the “younger students were not welcoming, they did in fact go out of their way to include [Kelly] in most projects.”

As an introvert, it was not easy for Lydia [student] to socialize, but she was able to make a couple of great friends at CICS because of the focus on teamwork and community. She attested that she would not have continued in the program if it were not for the friends she made. She also made acquaintances of two of her supervisors at work who were CICS alumni. Lydia further stated

everybody is great; everybody is really nice and willing to help each other out. I always feel that if I have a problem and I need help, I could go to any one of my colleagues and they would assist me. I have never felt like that about any other educational experience really.

One of the attributes of quality performance of a college graduate was noted by Duch et al. (2001) to be the ability to work with others in team settings. They stated it was crucial to “gain experience working cooperatively in teams and small groups” (p. 14). Group dynamics encourages productivity and relationships that augur well for successful completion of project.

The opportunity to work with his fellow students in various group projects enriched Chris’ ability to communicate with his classmates. According to Chris, “being able to work with different people, [doing] several group projects, being able to work in groups and teams through common goal and working through different sorts of opinions

and ideas” impacted his professional experience. He noted that the social aspect was very helpful to alleviate the stress that comes from the program. The intensity of the program made it essential to let off some steam. Chris [alumnus] recounted how demanding the program was, even though he was doing the master’s degree on a part-time basis. He remembered how involving the class assignments and projects were, but how being part of a group made it easy to work through them. Being in the same situation with other students in class “made it easier to work with those people” than if it was an individual effort. Boykin, Lilja, and Tyler (2004) and Jones (2005) attested to the strength of group work.

The faculty members at CICS also thrived on group cohesion. George [faculty] noted that the faculty goes about their duties “as a group and it has been consistent for the past 24 years of the Center’s existence.” They all work together to design the curriculum in the program. Tim confirmed that in the first two years of the Center’s inception, the curriculum was solely handled by the founding director, “but as time progressed, each faculty member was able to then put more and more of themselves and such pieces of it but [they] never lost the design thread which exists today.” According to George “the field of technology in communication is so complex that mostly no one person can understand it, and comprehend it.” As new technologies evolve, they bring in tow new challenges of adaptability to the world, and ICT professionals must be able to provide solutions to the ever-changing demand for current infrastructure. Keith (2006) confirmed

ICT is an area, which by its very nature is dynamic and fast moving, and we need to continually monitor and review provision in order to ensure that support and services not only meet current needs, but are also sufficiently

planned and structured to ensure that future needs and developments can be accommodated. (p. 60)

George noted that was why they focus on teams to study the field, and that was why the students are taught and educated to work in teams. According to him, it is not just because it is nice and desirable and we learn more together, it is because we can't understand this field by ourselves, so by having a different point of view, you can actually achieve more. So the team teaching is really important. We also cooperate in other area, it is a teaching relationship, what I will call collaborate curriculum maybe or collaborative curricula activities.

The instructor also has a duty to ensure that students work as a group, according to Goodyear (2001) "The tutor will normally need to do some work to help participating students develop a shared identity – a sense of themselves as a group. Getting students to provide some personal 'profile' material can be helpful."

Networking: Importance of Alumni Bond

The alumni community at CICS is a very close-knit group. Tim described them as "a network of people who had shared an experience; who were willing to help others who were coming up through that experience." The Center makes specific effort to keep in contact with the alumni, to involve them in every aspect of the program and implement viable suggestions they propose. Tim added that even though the Center makes adjustments where possible based on feedbacks from the alumni, the students and industry partners, they always looked holistically at the situation and make realistic decisions. The Center communicates between six to eleven times a year with the alumni and some of them are brought back as speakers in classes to share their experiences.

George [faculty] asserted that alumni are very much involved in every aspect of the Center's project. His relationship with alumni of the Center is usually a carry-over from his interaction with them when they were students. He encourages alumni to work with him, thus he invites them back to lecture in his class. Steve, an alumnus confirmed this. He claimed his relationship with the Center has positively affected his connection with the current students in the program. He has been back at the Center to address the students in a couple of classes.

The alumni also demonstrate their commitment by giving constantly to the Center. They give most especially to the social learning program so that current students could enjoy experiences that they benefitted from as students. Tim recounted instances when CICS alumni have been of tremendous help whenever he travelled around the country and globally. George confirmed that the alumni community has been known to relate with the program in form of donations, recruiting of students and even providing input to the program. According to BSU (2007b), alumni of the program donate resources in monetary contribution and equipment. Their contribution provide opportunity for student to engage in social learning and networking events like golf outing, travel opportunities, corporate dinners that have been known to affect students life positively.

The friends Kelly, an alumna made during the duration of the program still keep in touch with her. She considers them lifelong friends who were extremely supportive during the masters program. She described the various teams she was involved with in different group projects as 'cooperative.' Even though Carol [alumna] graduated from the Center many years ago, she still keeps in touch with some of her former classmates in the program. She also maintains a close relationship with other CICS alumni; she stated, "it

was always a delight to connect with fellow alumni on a professional level anytime there was a social or professional event organized by the Center.” According to Carol, it was always an opportunity to “reminisce about past experiences in class, on projects, and during various social learning experiences.” Steve [alumnus] also claimed that his relationship with some of his former classmates and other alumni of the program continue to develop due to his efforts to keep in touch and share his progress with them periodically.

The active engagement of alumni also extends to the social learning program where students connect with them. The program endeavors to maintain a relationship with alumni in one form or the other. Paul noted the strong alumni bond has helped to continue to build the social learning program. He considered this a great asset. He has seen the program gain momentum over the years. Peter [faculty] expressed the importance of alumni to the program; according to him, “alumni drive this program.” He considered their success to be the Center’s success, thus, it was crucial to ensure that whatever they learned at CICS contributes to their success. McCurdy and Tang (2007) noted that the current director of the Center confirmed this assertion when he stated

I have built relationships with students that were here before I was because they are the ladder of influence for the current students. Our success has nothing to do with the people sitting in this hallway. What any business is measured by is their end product. The alums are the end product; we can’t be successful without them.

The need to make the students’ experience part of career development was emphasized by Peter, because it was crucial that they succeeded in their endeavor at the Center, so that they could later as alumni articulate their starting point as being in CICS.

He shared instances when former students would just call to inform him they were alive, but most especially to share that they were doing well in their career. They felt it was important to always keep in touch and ask how he was doing, as well as the Center. He added “If there are messages on my phone, chances are good that if there are five messages, one or two will be from alum.” Even though many other academic programs have alumni groups, the alumni network at CICS was considered exceptional. Steve [alumnus] believed the continuous involvement of the alumni community in every aspect of the Center made the alumni network distinctive.

Faculty Responsibility and Relationship

All the students and alumni who participated in the study had either or both inside and outside classroom relationship with the members of faculty at CICS. Kelly [alumna] depicted the faculty in the program as “well qualified, tough, had great egos and well deserved ones too, but were willing to share more than most professors” she had ever known in other classrooms. She believed she can attest to this because she was also an instructor and understood the rigor of higher education. The faculty members at CICS were noted to have “a wide range of real-world industry experience” (BSU, 2007j). According to Kelly, “they are a true asset to Ball State.” Diya [student] always liked to compare her experience at CICS to her undergraduate program because of the difference in the system of education. She was delighted that she could communicate with her instructors outside the classroom. She asserted that the faculty members at CICS treated the students like colleagues and accorded them a lot of respect; this was not the situation in her undergraduate program. What she liked most about members of the faculty was the

telecommunication sciences and other related areas can be members of the association.

Currently the association has seventeen institutional members (see Table 1 for list of institutions).

Table 1 - ITERA Institutional Members

1.	Ball State University
2.	Fort Hays State University
3.	James Madison University
4.	Liberty University
5.	Marion Technical College
6.	Michigan State University
7.	Murray State University
8.	Ohio University
9.	Oklahoma State University
10.	Purdue University
11.	Sauk Valley Community College
12.	Syracuse University
13.	Texas A&M University
14.	University of Colorado
15.	University of Oklahoma - Tulsa
16.	University of Pittsburgh
17.	Western Michigan University

Source: <http://www.itera.org/membership.htm>

The goals of the organization are to create a forum for the exchange of information and ideas by educators, researchers, and professionals in the field; to maintain special interest groups; develop conferences, meetings and events that would aid in creating learning and ideas exchange opportunities. It also involves developing proceedings and distributing them through suitable publications and electronic exchange. As part of its goal, the association also recognizes activities that highlight remarkable and outstanding achievements by students, educators and practitioners. It also encourages

discourse between telecommunication service providers, vendors, regulators, educators and users (ITERA, 2007b)

One of the participants, George, a faculty member described CICS program as more deliberate and intensive than other multi-disciplinary approaches of the other programs. He classified programs that belong to ITERA as “sister programs in the field”, thus he made comparison between some of the programs to support his multi-dimension claim. George stated

There is one program that has much deeper technology engineering than we do, but it has virtually no management or policy intervention. Therefore, that is more one-dimension program. Ours is multi-dimensional and it is balanced in its dimensions. One can say this program is about, technology, management, policy and leadership. Even though, a lower level manager does not have to be concerned about information and communication policy, but the higher ones do, so it is crucial to have a policy component. And I think that leadership is not the same as management, so this program pushes leadership much more than any other program.

Description of classes at CICS

The description of classes at the CICS is based both on eyewitness account as a former student in the program and recorded observations in my personal journal. It was imperative to provide a concise account of the classes in order to give a better understanding of the interviews and the supporting data. Most of the classes are designed to be participatory and group oriented. Typical classroom sessions consisted of lectures, PowerPoint presentations, group discussions, and general class discussions. Students are

usually encouraged to sit with their group members for cohesion. The groups are operated like corporate organizations with each member having specific responsibilities and shared or rotational leadership roles. The groups meet both in the class and out of the class to discuss assignments and work together on projects. The classes are also highly participatory and student-centered. All the participants interviewed for this study confirmed this assertion.

Students are required to take a minimum of 35 credit hours and a research requirement for the degree (CCIM, 2007). The Master of Science program in Information and Communication Sciences at CICS has been described as the ticket required for success in the exciting field of Information and Communication Sciences (ICS) (BSU). This corroborates the founding director's description of the program as an innovation. Every cycle of students are mandated to take foundation classes that would ground them in the professional world of Information and Communication Technology (ICT). The foundation classes offer human communication skills, team building, presentation skills, leadership skills, management skills, technology skills, and problem solving skills. The classes also have mandatory laboratory hours built into them and students are required to schedule laboratory (lab) hours to complete different technology assignments. This affords the students an opportunity to use real-world technologies to solve problems. The Center's Graduate Assistants (GA), who assists other students in the lab in using the equipments, usually managed the labs.

Presentations at CICS are conducted on a professional level and mostly in groups. The students are required to dress formally in business attires and produce corporate business packages. Every member of the group is accountable, thus full participation by

every team member was compulsory. Presentations are usually timed and evaluated by the instructor and in some cases members of other groups assisted in the evaluation process. Proper introduction of every member of the group was expected, thus each speaker was professionally introduced and properly cued in by the previous speaker. In some of the classes, members of other groups were encouraged to ask questions and provide a feedback based on the evaluation. The instructor would then provide feedback based on their appearance, enunciation, and general presentation. It was always amazing when students admitted that they had never worn business suits in their lives nor practiced appropriate presentation skills. In CICS, appearance really mattered and professionalism is demanded.

All the courses at CICS incorporate industries involved projects. Most of the projects are done as teamwork, while students complete a few individually. Working on projects for real clients was a deliberate effort to assist students acquire the necessary experience needed to enter the ICT industry. The curriculum at CICS is woven around the concept of immersing the students in rudiments of what their careers would entail when they graduate from the program and this goes beyond technology, hence the non-traditional education called Student Social Learning Program (SSLP).

The social learning program starts usually with an orientation and backyard barbeque welcome party. At this gathering, students get to know each other, the faculty members, and members of the alumni community. Subsequently, other activities come up throughout the year. The students are encouraged to attend as many of these activities as possible to expand their human networking propensity. Events like leadership and team-development challenge events, presentation skills workshops, Super bowl parties,

symphony dinners, job placement seminars, and graduation lunches are targeted towards the students. Other events like golf outings, homecoming tailgating events, international dinners, alumni dinners, holiday receptions, winter doldrums parties, wine tasting, Ski trips and wine tasting are accessible to alumni and industry partners.

Summary

The thematic categories identified in the findings of this study illustrated the different perspectives of the participants. The findings were expressive and it provided an understanding of the culture at CICS. The interview responses were analyzed along with archival data in eight themes, namely intense and comprehensive learning, totally immersive experience, outstanding professional development, group dynamics and cohesion, networking: importance of alumni bond, faculty responsibility and relationship, enrollment diversity and engaging pedagogy. These findings will be discussed in Chapter five.

CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Introduction

The case study approach in this study enabled the researcher to understand the perceptions of major stakeholders in the program about a single phenomenon, namely the CICS masters program. The purpose of this research was to examine the pedagogical approach at the Center for Information and Communication Sciences based on instruction, social learning culture, professional development, academic achievements, and collaborative interaction among students, faculty, alumni, and colleagues in ICT industries.

This study employed a qualitative method, specifically a descriptive case study. The data collection methods adopted for this inquiry were interviews with corroboration of evidence from archival data. Twelve members of the CICS community participated in this study. Three central research questions formed the basis to generate interview questions, guide the interview process and the archival data analysis process. The findings of this study were categorized around eight themes. This chapter presents the discussion of the findings in relation to the central research questions of the study. The chapter also includes conclusion and recommendations for further study.

Research has indicated that there is increase in immersive and experiential learning in higher education due to the need to get students immersed in the workplace by participating in related projects that could enhance job placement. Thus, it was becoming more important to prepare students for various careers that involved projects and problem solving. After examining studies on engaging pedagogy, experiential learning, collaborative learning, constructive learning theory, and problem-based learning, it was evident that the elements of social and cultural learning were absent, thus the need to examine the creative pedagogy of CICS that was inclusive of these elements.

Discussion of Findings

There are three central research questions that focused this study regarding the impact of the teaching, learning, social and leadership frameworks of the program at CICS.

1. How do current students and the alumni of the program describe how the educational, technical, and social learning experiences at CICS impacted their professional experience?

The findings from the research indicated that the educational, technical, and social learning experiences of the masters program at CICS impacted the current students and alumni in a variety of ways. The experiences of the participants are dependent on their previous educational, technical, and social knowledge and background. The common expressions used by the participants were unique (June), highly significant to learning (Lydia and Diya), real-life applications, (Steve, John and Carol), personal and professional life enrichment (Kelly), more resourceful and organized (Carol), and a great program (Chris).

The result indicated that the student and alumni participants who possess undergraduate degrees in technology did not perceive that they were likely to benefit more from the technical experience at CICS than those who did not possess undergraduate degrees in technology. Steve [alumnus], Carol [alumna], and Diya [student] were technology savvy before they started at CICS, but they did not necessarily prefer the technical aspect to the academic or social aspect of the program. Even though Lydia [student], June [student] and Kelly [alumna] narrated how technology was the hardest part of their studies, because of their non-technology background, they still attested to how technology impacted their professional experience. Commenting on the technical aspect, Kelly puts it metaphorically, “I am glad I walked through the fire to get to the other side.”

The determination of the participants to excel in the mandatory technology classes despite their depth or lack of technical background was evident in their resolve to be competitive in their careers. Janairo (2001) confirmed the importance of technology skills in today’s workforce, he stated, “our colleges and universities must fashion graduates who can write, communicate, think critically, and think expansively, but they must also ensure that these graduates can effectively function in a high-tech world” (p. 12). The Center combines theoretical and practical learning opportunities to educate professionals to solve information and communication problems and train students to use the latest technologies and exhibits strong interpersonal skills (BSU, 2007). The concept of creative pedagogy is the combination of the academic program, immersive learning through real-world projects and social interaction called Student Social Learning Program

(SSLP) to produce well-rounded professionals in the information and communication industry.

After participating in projects alongside the faculty, Diya [student] learned more technology skills that influenced her professionally. Steve [alumnus] gained a lot from the technology classes, but he learned a lot more from classes geared towards management, leadership, and communication skills. He narrated how the foundation classes, the history class, and the capstone class shaped his professional experience. The technology skills Carol [alumna] acquired at CICS helped her “to actually apply what [she] was taught in real-life applications,” but she did not necessarily require a comprehensive knowledge of how every piece of technology worked but the basics. She stated

that was a relief because my goal was to be able to use technology for my job and I kind of got that. It also helped me understand how to research better if my job duties or curiosity ever dictated that I should know more specifics about how something works, how to put a network together . . . my technical experiences helped me to actually apply what I was taught in real-life applications.

The social learning program, in particular, was the most preferred amongst the participants. Diya [student] described it as “definitely the biggest thing, especially for international students.” The opportunity for exposure to American culture and the society really excited Diya. The various social learning programs enabled her to understand different activities like golf, rope training, skiing and wine tasting. These were all new things to most international students, thus it created the avenue for them to experience many of these things and relate with other students and faculty in relaxed atmospheres. It

helped them to bond with other students and alumni from the US and improved their self-adjustment in the US. Abe, Talbot and Geelhoed (1998) indicated that international students face the challenges of social adjustment like self-confidence and the non-availability of a strong support group. Diya indicated that the support of other American students in her class helped her and other international students to adjust. Lacina (2002) puts this in clearer perspective, she stated,

Some students experience loneliness, others may have problems due to their unfamiliarity with US customs and values . . . [they] may also experience a loss of social status because their social standing in their homeland may not be recognized as important in the United States. (p. 21)

This may have a psychological effect on the students, especially if they do not have a good support system, which the office of international program in their institutions should provide.

The social events enabled Lydia [student] to connect with her classmates and improve her human networking skills. Kelly [alumna] considered the social aspect a very important aspect of the program and as crucial as the class work. Bourassa and Kruger (2001) opined that to guarantee adequate student learning experience and most especially retention, there was a need to ensure academic, community, and emotional integration. They suggested collaboration as a tool for cohesion, which would breed stability and create a beneficial environment for in-and-out-of-class experiences. The report and recommendations of the CICS National Advisory Board meeting of July 12-13 stated, “social learning is very important to the outcomes and success of the program,” (M. Allen, personal communication, July 25, 2007). The report noted the focus and

commitment of faculty members to the social learning aspect. In addition, activities like the *Accenture Challenge* and Student Social Learning Program should remain in the Center's curriculum. Making this an integral part of the curriculum attests to the creative pedagogy at the Center and makes immersive learning fundamental to the students' experience.

Participants confirmed that the social learning program at CICS created an opportunity to meet with alumni and people in the industry and connect with other students in the Center and members of the faculty outside the class. Diya [student] stated it could help with placement after graduation. Kelly [alumna] claimed it was "an avenue to socialize and learn in a non-conventional way. It opened avenue for networking." Carol perceived social events as an opportunity to interact with alumni of the program who shared about various job opportunities. She found this useful and valuable to her job search. The social learning program on the contrary did not exactly thrill June [student], because she considered herself as a social person exposed to most of the activities even before starting the program at CICS. Steve [alumnus] considered the social learning activities more like management classes, because he developed management, communication, and social interaction skills through those events.

Being a pragmatic person, June [student] could not immediately determine if the educational and technical aspect of the program had influenced her professional experience because she had not completed her degree at the time of the interview. However, the leadership aspect and communication classes, which stressed interpersonal skills, greatly influenced John [student]. He was excited that he would be able to utilize the skills in his present position. He stated,

while I have been at CICS, I have taken on a management role, and I have been a manager for nearly three years now. I have been able to utilize what I learned here in the program at work, and able to incorporate some of my present professional work into the schoolwork that I am doing for the program. I know that all I have learned will be useful indeed.

Due to the project-based nature of the ICT industry, most classes at CICS revolve round real world problems. According to Catalano (1996), logical, analytical and problem-solving skill characterizes Problem-based learning which is known to facilitate “real world” experience and the ability to acquire both technical and leadership skills in the IT industry. This also enhances student development, especially if the faculty members interact and collaborate with students on a professional level and engage them in service learning.

According to the students and alumni interviewed, the faculty members at CICS invest in their students’ professional development and they work with students in community-based projects and research. Faculty members cultivate a professional relationship that transform into lasting association, which transcends their graduate education. Howard (1998) believed service learning was a pedagogical style, described as a faculty activity. According to Scepansky (2004), “integrating service learning application into the official faculty tenure and promotion guidelines is important in order to officially reward faculty for implementing the pedagogy” (¶ 19).

The faculty participants confirmed the information gathered from the students and alumni. They all indicated that the educational, technical, and social learning experiences at CICS enhanced the students’ professional experience. George observed generally that

instructions to students in the Center are usually in three aspects of life, (a) education, (b) technology, and (c) social learning understanding. These he noted are the three different components of a professional and CICS incorporate these elements. Knowledge, skill and attitude were identifiable as three areas of competences in a learning environment (J. E. Gillette, personal communication, October 29, 2007). The premium placed by faculty on student attitude reflects creative pedagogy.

Peter [faculty] articulated what the program encompassed by stating that it was a “three-legged approach to education.” The three legs are technology, management, and human networking. He articulates this to potential students as their core functions in the program. Tim [faculty] agreed that it was multi-faceted where students learn technology, management, leadership, and human problem-solving skills, and where they get exposure to social learning opportunities to orientate them on the social and human side of the industry. Paul [faculty] described the experience as student-centered immersion learning. Giving students the opportunity to acquire problem-solving skills that enhance their ability for placement in executive positions is creative pedagogy as immersive learning is entrenched within the program.

2. How do CICS alumni define and describe professional success in relationship to the Center?

The Center for Information and Communication Sciences described the alumni community as a very close-knit group (BSU, 2007b). One of the members of faculty interviewed described them as “a network of people who had shared an experience; who were willing to help others who were coming up through that experience.” The Center constantly updates the contact information of all reachable alumni to ensure

communication flow and elicit support for the Center. Such support from alumni provides travel opportunities, networking and social event opportunities for students (BSU, 2007b). Steve [alumnus] believed the continuous involvement of the alumni community in every aspect of the Center and direct connection to students made the alumni network distinctive. He posited that though many other academic programs have alumni groups, the alumni network at CICS was exceptional.

The conscious inclusion of the Alumni in the general framework of the student-learning process reflects the program's creative pedagogy. Maintaining close contact with the Center and contributing to its development is commendable. According to S. Jones, (personal communication, December 13, 2007), the success of CICS alumni was evident in their ability to attract new global telecommunications companies to the Center for student job placement. The number of companies who hire CICS graduates is increasing . . . providing more outlets and variety for student placement (M. Allen, personal communication, July 25, 2007).

The alumni who participated in the study ascribed their professional success based on pedagogy at the Center, to student-centered learning, target oriented skills acquired during the program and quality services. The description of how the learning process at CICS influenced their professional success varied across participants. Even though "graduates have maintained a 95 percent placement rate in the field since CICS opened its doors in 1986" (BSU, 2007k, p. 3-4), placement has not always been in the desired field in IT industry. Immersive learning at CICS however sets a foundation for students to have a clear perspective of their career expectation.

Two of the participants attested to being successful due to their experience at CICS, but not necessarily successful at using the skills they acquired during the program. Steve [alumnus] could not define success in his profession in relationship with his training at CICS because he was currently not in an IT position in his job. He was prospecting for a project management job in IT, which will help him assess the impact of his training at CICS. Carol's experience provided her the required skills to achieve her career aspiration, which was to engage in project management. Currently she utilizes these skills in various projects at her place of employment. J. E. Gillette (personal communication, October 29, 2007) stated that "theory guides practices and practice guides theory." The combination of theoretical and practical learning opportunities at CICS is innovative pedagogy.

Chris [alumnus] attributed his success to the student-centered learning, which was not just completing the coursework, "but understanding some of the philosophies and ideas behind what they are teaching, [and] the way that they are teaching." The commitment to ensure that students are fully equipped to start using the skills they acquire while still in college was one of the Center's goals. Learning is student-centred and relies upon self-directed learning. Hmelo-Silver and Barrows (2006) confirmed that the role of the instructor is to guide the learning process rather than provide knowledge. Paul [faculty] stated that the formation of CICS was on immersive learning concept many years before the entire university caught up to it. Peter [faculty] corroborated that the program focused on immersive learning and experiential learning philosophy.

In participative leadership, every member of the team is at liberty to express his or her opinion without fear of reprimand. Therefore, input from everyone with ideas was

acceptable with the notion that an ideal and enhanced working environment would be achieved (Crawford, Brungardt, & Maughan, 2002). Chris [alumnus] learned how valuable his peers were in the process of interacting with them. He stated, “you don’t always have to learn from somebody who has the labor-worth and expertise. You can learn from your peers and other people around you . . . students have . . . information and knowledge to share.” He believed it was important to be open to learn from anybody. Tim [faculty] attested to team-related activities and how the students engaged these group activities from the inception of their program, he stated

You cannot get through the process in this business without using other people’s resources, like, collaborating with people, so from ‘day one’ we had team-related activities . . . so people had to learn the difficulty of having five people on a team. Two of whom were doing a whole lot of work leaving you there very frustrated. We created situations for example, where people could fire people. A team could fire somebody, nobody ever has, because they discovered how hard it is to do that because they have to use rules just like the rest of us have to use. So, that too was a learning process.

Decision-making could be slow in participative leadership and low productivity is recorded if the group was not properly managed (Chrislip & Larson, 1994). Steve [alumnus] learned a lesson of group cohesion during the *Accenture Challenge* experience. He narrated how he felt responsible at his team’s elimination during the first round and because he chose to leave the team in order to get some rest before the presentation. He had lobbied strongly for someone to take a rest during the night while preparing for the presentation, but everybody declined, so he volunteered to take a break. Even though he

was not the leader, Steve's action affected the team. Chrislip and Larson (1994) opined that to avoid this type of occurrence, people with similar goals should belong to the same group. They stated, "If you bring the appropriate people together in constructive ways with good information, they will create authentic visions and strategies for addressing the shared concerns of their organization" (p. 14).

The process of engaging students in the learning environment positively influenced the alumni success in their career. Chris [alumnus] believed that the program in CICS influenced his success; according to him "the presentations in CICS has helped [him] become a better presenter." He reiterated that it was a valuable program, even though it was stressful. The program taught him to deal with stress-related issues in IT. As part of creative pedagogy at CICS, every presentation was professional and full participation by every team member was compulsory. Feedback was on appearance, enunciation, comportment and content. Laurillard (2002) noted that as students engage in dialogue, they learn how to conduct themselves in open discussion forums

The opportunity afforded students to participate in projects, social learning activities and extensive classroom experience is what makes the program distinctive from other programs. Carol [alumna] viewed success as "meeting whatever target is at hand, if it's in regards to a project, personal goal, or whatever other target an individual or group or company is working towards." She believed her success story was due to "hard work and perseverance", which she attributed to CICS.

Success, according to Kelly [alumna] "is making a difference in the quality of life of those around you, in giving your best to a project or a person, and knowing that you've done so with great integrity and compassion." She also considered success as viewing

one's reflection in a mirror and being able to declare that one has done the best. She noted that she had been opportune to experience a great deal of success, which is attributable to her educational goals. Kelly believed CICS "played a big part in that." She affirmed that CICS helps students to realize their "potential and not be afraid to get out there and try something." The program at CICS indeed helped to strengthen Kelly's belief system and afforded her more confidence.

3. How do students and faculty describe the impact of the educational philosophy used in the CICS masters program?

Swing (2002) noted that in the measurement of engaging pedagogy, the instruction process must include a variety of teaching methods, meaningful discussion and homework, challenging assignments, productive use of class time, and encouragement for students to speak in class and work together. This will improve critical thinking and overall course effectiveness. At CICS, instruction is entrenched in engaging pedagogy. The students and faculty who participated in this study described the impact of educational philosophy used in the program at CICS as effective, deliberate and consistent, clear-cut, an invasion, multidisciplinary, integrated and most especially a culture of success. The common thread among the participants was that the relationship between the instructors and the students required a delicate balance between academic and professional development.

The educational philosophy utilized at CICS has been "deliberate and consistent" since the inception of the Center in 1985 according to George [faculty]. The Center has endeavored to be current in a dynamic and complex technological world by ensuring the curriculum is up to date and balanced (M. Allen, personal communication, July 25,

2007). George stated, “the impact of the educational philosophy is that the educational theories have helped to shape the curriculum and the kind of students” who graduated from the program. However, the Center has to be constantly aware of the fast changing world of technology and be responsive to the changes in the society. The Center has learned to adjust to changes and develop a theory where the ICT field is going, thus it is safe to declare, “the impact of the educational philosophy is huge,” according to George.

Peter [faculty] described the peculiar culture that had been in existence for over 23 years as the success story of the program. According to him, “a culture had indeed been developed”. Some he considered effective, while others required improvement. He depicted the educational philosophy of the program as a culture of success, “one defined as professional . . . one defined as being hands-on.” He noted, “there isn’t a class that exists currently within this program that isn’t an external touch to a client or a real world project.” Students are encouraged to learn through complex, real life projects in order to promote skills required for various industries. (Duch et al., 2001). This corresponds to the program’s objective to ensure that the students learn to become problem-solvers while in the program, thus the program:

- combines theoretical and practical learning opportunities in a way that educates professionals in diagnosing information and communication problems
- trains students to use the latest technologies in the selection, design, development, and management of information gathering, processing, storage, and dissemination systems

- connects students with professional opportunities to apply these technologies and ultimately solve information and communication problems in the real world of business, government, education, and nonprofit institutions (BSU, 2007l, ¶ 5)

Paul, [faculty], opined that the out-of-class projects are the most important learning process because students learn from real-world situations. CICS “faculty and the department itself benefit from these regular connections with colleagues in the real world, who sometimes reciprocate by recruiting on campus and supporting the center through donations” (BSU, 2007j, ¶ 2). Lydia [student] affirmed that the CICS educational philosophy had a high impact on the students because it made “things interesting.” According to her, the students “get a lot of exposure to things outside especially for those who want to work with big companies.” She recounted how she became familiar with the job hiring process when the Center conducted a mock interview and a placement seminar with alumni in IT companies. She appreciated the leadership aspect and the social learning aspect that provided “a sense of community.”

The educational philosophy at CICS is clear-cut; students see that technologies are tools, not an end, according to Tim [faculty]. He explained, “When you are building an organization, the technology is not the goal, using the technology to build the organization more effective for people is the goal.” He identified this as the significance of the program, and what they endeavored to teach the students, so faculty provided technology skills in the laboratory and in various projects, that students engaged in. Tim noted that keeping the balance in a multidisciplinary and integrated program like CICS was always a challenge. McKeachie and Hofer (2001) expressed the need to continue to evolve in meeting teaching and learning challenges in higher education. They stated, “we

now know learning skills and strategies that generally help students to learn more effectively; in the next decade, we will better understand which strategies are most effective for which students, with which material and which goal” (p. 30).

The inclusion of student social learning program in the masters program at CICS was to enable students gain cultural and social experiences, as well as developing networking and communication skills through a variety of activities (BSU, 2007a). The incorporation of the social learning aspect into the program was to provide opportunities for students to acquire instruction in professional issues and well grounded in their experience, according to Tim. When students graduate from the program they are involved in issues that go beyond technology, thus they need to learn to operate “in the context of other people, that is very social, they have to learn how to get on in social environments” Tim stated.

The purpose of inviting students to symphony dinners, wine-tasting events, golf outings and many other programs is to facilitate conversations and other social etiquettes. The Center believed that “learning doesn’t take place only in the classroom; business does not always take place just in the workplace. Restaurants, social gatherings, the 19th hole—all are places where important business might be conducted” (BSU, 2007e, ¶ 1). Kelly [alumna] described this form of creative pedagogy as “important as the class work. It is an avenue to socialize and learn in a non-conventional way. It opened avenue for networking.”

John [student] considered himself a firm believer in communication skills, thus it was imperative to have the ability to exhibit interpersonal skills as a technology expert. He claimed that the educational philosophy adopted by the Center was effective due to the

balance of human communication and technology. He asserted that people working with technology must have the necessary skill to communicate their knowledge to their clients in order “to make it a value to [their] customers.” According to Peters (1999)

“Communication' is a registry of modern longings. The term evokes a utopia where nothing is misunderstood, hearts are open, and expression is uninhibited . . . Communication is a rich tangle of intellectual and cultural strands that encodes our time's confrontations with itself” (p. 2).

George [faculty] asserted that the ICS field was highly complex, “that mostly no one person can understand it, and comprehend it,” thus; professionals have learned to work in teams in order to navigate it. For students at CICS to understand this, they are required to work in teams. George described how in a typical team teaching, instructors focus on specific part of the curriculum like the industrial style where “everything is broken down in separate parts, like in an assembly line.” However, at CICS, there is mutual leadership responsibility and all the instructors involved make it very stimulating and avail themselves the opportunity to learn from their co-instructor. DeMarco (1997) confirmed that motivation and matching the right people to the right job encourages team spirit. He emphasized that key traits like building trust, having a big heart, good brain, dare, and good risk sense were all crucial in project management.

June [student] asserted that what makes the program at CICS distinctive from other programs is the great attention the faculty members provide to students. They go beyond the normal duty of ‘just acting as instructors and really get into students’ business, they are like parents, always watching over you . . . it’s like parents and children.” Even though June [student] believed this would help young students like her to

be more focused, she considered it a downside of the program. She also noted faculty members encouraging students to figure out solutions on their own as a downside of the educational philosophy. Duch et al. (2001) noted that students are independent of the instructors in project-based learning and the students' involvement with projects builds up their management and leadership abilities. This will also enhance the students' communication skills and promote self-realization. Thus, what June considered a downside of the educational philosophy, Duch et al. referred to as skill building in project-based learning.

Paul [faculty] depicted the education philosophy of CICS like an invasion, he called it the "shock him, hit him, stick to your guns" approach. The result of this approach became evident in the students' transformation within eleven months. This was necessary because of the extent he had to go to transform and energize them beyond their imagination. When asked what makes the program distinctive from other programs, Paul puts it concisely "people." He noted it was that simple, because it constituted both the culture and relationship between the people. The ability of faculty to converse among each other, trading important information on students' academic progress and the process of assisting them to succeed was a hallmark of the Center's success. This correspondence among faculty on students' issues was the downside referred to by June.

When asked if the program has met its aspiration, George [faculty] declared that the program has been very successful in meeting its goal. He noted that ICT is in the absolute center of the society, and as the knowledge society and the information economy changes, the Center will continue to contribute its quota to the workforce. Despite the challenges encountered daily, the Center has achieved its goal to produce leaders in ICT.

He reiterated that the Center could not rest on its laurels despite the success story that is evident in the lives of the alumni because of their training at CICS. What makes the program distinct from other programs, according to Peter [faculty] were a couple of things. Firstly, “that it is industry based and it is driven by former professionals from the industry [and] secondly it is hands-on.” The faculty members engage in peer review and evaluation constantly. Owen and Rogers (1999) and Posavac and Carey (1992) noted the importance of program evaluation in the improvement of effectiveness in organizations. Peter elaborated that the unique nature of accomplishing the masters program as a full-time student in eleven months and the reciprocal relationship the Center has with ICS industries made the program distinctive.

The purpose of the program was to teach students to apply technology, thus the need to provide hands-on opportunities for the students in the laboratory. Tim [faculty] expressed his frustrations to get students in the laboratory to take full advantage of their time at the Center to utilize the different equipments available. The laboratories at CICS are equipped with contemporary technology to assist students accomplish the objective of the Center to provide immersive learning.

Conclusion

Qualitative studies provide rich details and enable readers to have a better understanding and gain various perspectives on issues (Hoepfl, 1997; Strauss & Corbin, 1990). The purpose of this research was to examine the pedagogical approach at the Center for Information and Communication Sciences based on instruction, social learning culture, professional development, academic achievements and collaborative interaction among students, faculty, alumni, and colleagues in ICT industries. This study adopted the

descriptive case study method due to the identification of CICS as a group and data collection focused on a limited sample of the population through individual interview process. Open-ended questions in a semi structured interview and archival data were the source of data collection. Open coding was the technique utilized to identify words, phrases, and expressions that were constant and recurring in the interview transcripts. Eight broad thematic categories emerged from the codes (Strauss & Corbin, 1990). The central research questions then became the basis for discussing the results of the findings of the study.

Current students and alumni described the educational, technical, and social learning experiences at CICS as having a very high impact on their professional experience. A faculty member identified that CICS “has a reputation that is actually fairly well known; and this is in part because the founding director and all the other faculty members are out in the field, presenting papers at conferences, writing papers and so on.” The Center has an international reputation for having a great graduate study in the field of Information and Communication Technology (ICT).

As the alumni participants’ narrated their experiences at CICS in an effort to understand if there was a relationship between their professional successes and life in the Center, it became obvious the training at CICS had immensely contributed to their successes. Carol [alumna] noted that the technology skills she acquired at CICS helped her “to actually apply what [she] was taught in real-life applications.” She learned how to set up both wireless and home networks and acquired industry certifications. Kelly [alumna] believed all the experiences combined enriched her life, both personal and professional. The satisfaction of faculty members at CICS emanates from seeing students

gainfully employed after graduation and developing in their careers. Faculty measured success by seeing the students' progress, and ensuring that this happened was very important. According to Peter [faculty], "success is based on what they learned in and outside the classroom in this program." The level of placement after graduation was a yardstick for success. The Center attested to 95% placement success (BSU, 2007j, ¶ 3).

The most pertinent question I asked myself throughout the study was "How will my understanding of the culture of CICS evolve from this research?" After the completion of this research, I concluded that my understanding of the subject has greatly evolved, but I ended up with another question; "Will others see what I now see?" This study represents the first systematic study of faculty, student and alumni perception of the CICS program and the creative pedagogy that relates to a holistic education in ICT. I feel privileged for the opportunity to conduct this study. It has enlightened me and broadened my knowledge base. This will encourage me in more innovative study of teaching and learning methods.

Recommendations

In this study, the positive response to the creative pedagogy used by the program at CICS was noteworthy; however, some of the participants believe that the Center must not rest on its achievements. The following are recommendations for further studies:

1. Exemplary programs, such as CICS, need to adopt a culture of continuous improvement that includes a regular formative and summative evaluation process. Technology is very dynamic and evolving, thus the need to update constantly the laboratories and curriculum to reflect emerging changes and trends. Such structured periodic evaluation would provide quantitative and qualitative

empirical data that would ensure sophisticated decision-making regarding continuous improvement.

2. A series of studies ought to evolve in order to test the strength of the program's philosophy as potentially useful for more than just CICS. The likelihood exists that it represents a model for graduate education that could be replicated in other programs, especially where a high percentage of international students are members of the program.
3. It would prove instructive to conduct a comparative study of similar programs in the International Telecommunication Education and Research Association (ITERA) group. As one of the faculty members noted, "it is not what we teach that makes CICS different; it is how we do it."
4. The impact of the social learning program may have different effects on students based on their cultural-identifications, social stratification and/or their gender-identifications. The explorations of this drawback would be important to determine if a few students may misconstrue the high level of faculty engagement and closeness with students as an agent of patriarchy and cultural domination. One of the participants expressed resentment to having another 'father figure' in higher education.

A closer examination of such silences that might still exist within how students narrate their experiences as part of the CICS program may prove very beneficial and lead to a higher-level analysis of students' perceptions of their graduate education. June [student] indicated resentment about the meddlesomeness of the faculty members in students' personal life. This could be because of the closeness

that engenders from the socialization program, which is part of the creative pedagogy of the Center. Most participants considered socialization as a positive aspect of the program, June represented an obvious minority of students who do not see the social learning activities as novel because of their social stratification. She also considered the closeness emanating from such a program as a handicap, thus it will be imperative to provide avenues for expression of such voices through periodic feedback.

In conclusion, the purpose of this research was to examine, for the first time in the program's history, the pedagogical approach at CICS in order to gain insight into the educational and immersive learning culture. The findings indicated that CICS exemplified a highly successful form of graduate education that utilized creative pedagogy and immersive learning as agents of professional socialization and the program's conception and implementation is exceptional. The findings indicated that the educational, technical, and social learning experiences of the masters program at CICS had positively impacted the students and alumni in a variety of ways and strengthened their professional growth and career development. These findings are highly significant because they provide a rich-description and understanding of a unique and successful form of graduate education that combines creative pedagogy and immersive learning.

REFERENCES

- Abe, J., Talbot, D. M., & Geelhoed, R. J. (1998). Effects of a peer program on international student adjustment. *Journal of College Student Development, 39*, 539–547.
- Ackermann, A., & Plummer, S. (1994, December). *Examination into the use, place and efficacy of group work in university courses: A work in progress report of a current research project*. Paper presented at the Annual Australian Association for Research in Education Conference, Newcastle, Australia.
- Adams, H. (1992). *Mentoring: An essential factor in the doctoral process for minority students*. (Report No. 026497). Notre Dame, IN: National Consortium of Graduate Degrees of Minorities in Engineering and Science, Inc.
- Antonio, A. (2001). The role of interracial interaction in the development of leadership skills and cultural knowledge and understanding. *Research in Higher Education, 42*, 593-617.
- Alvarez, M., Binkley, E., Bivens, J., Highers, P., Poole, C., & Walker, P. (1990). *Case-based instruction and learning: An interdisciplinary project*. Proceedings of 34th Annual Conference, 2-18, College Reading Association. Reprint.
- Atherton, J. S. (2005). *Learning and teaching: Conversational learning theory; Pask and Laurillard*. Retrieved October 29, 2007, from <http://www.learningandteaching.info/learning/pask.htm#Conversational>
- Baker, C. M. (2000). Using problem-based learning to redesign nursing administration masters program, *The Journal of Nursing Administration, 30*(1), 42-47.

- Ballinger, C. (2006). Demonstrating rigour and quality? In L. Finlay & C. Ballinger (Eds.), *Qualitative research for allied health professionals: Challenging choices* (pp. 235–246). Chichester, East Sussex: John Wiley.
- Ball State University. (2007a). *About CICS*. Retrieved October 20, 2007, from <http://www.bsu.edu/cics/article/0,,34055--,00.html>
- Ball State University. (2007b). *Alumni donations*. Retrieved October 20, 2007, from <http://www.bsu.edu/cics/alumni/giving/>
- Ball State University. (2007c). *Applied Research Institute (ARI)*. Retrieved October 23, 2007, from <http://www.bsu.edu/cics/article/0,1894,189314-13226-33562,00.html>
- Ball State University. (2007d). *CCIM newsletter*. Retrieved October 20, 2007, from <http://www.bsu.edu/cim/article/0,1384,216583-14647-51252,00.html>
- Ball State University. (2007e). *Center for Information and Communication Sciences*. Retrieved February 2, 2009, from <http://cms.bsu.edu/Academics/CollegesandDepartments/CenterforInformationandCommunicationSciences.aspx/0,,00.html>
- Ball State University. (2007f). *Hands-on-learning*. Retrieved October 25, 2007, from <http://cms.bsu.edu/Academics/CollegesandDepartments/CenterforInformationandCommunicationSciences/AcademicsandAdmissions/ProgramsofStudy/ProgramFeatures/ImmersiveLearning.aspx>
- Ball State University. (2007g). *Industry partnerships*. Retrieved April 11, 2008, from <http://cms.bsu.edu/Academics/CollegesandDepartments/CenterforInformationandCommunicationSciences/AcademicsandAdmissions/ProgramsofStudy/ProgramFeatures/Partnerships.aspx>

- Ball State University (2007h). *Live, breathe, and deliver in the news: Newslink Indiana takes broadcast education to the highest level*. Retrieved November 21, 2007, from <http://cms.bsu.edu/Features/Global/ImmersiveLearning/LiveBreatheAndDeliverTheNews.aspx>
- Ball State University. (2007i). *Our history: The first opening*. Retrieved October 20, 2007, from <http://www.bsu.edu/cics/article/0,,34058--,00.html>
- Ball State University. (2007j). *Real-world projects*. Retrieved November 21, 2007, from <http://cms.bsu.edu/Academics/CollegesandDepartments/CenterforInformationandCommunicationSciences/AcademicsandAdmissions/ProgramsofStudy/ProgramFeatures/ImmersiveLearning/Realworldprojects.aspx>
- Ball State University. (2007k). *Running the show: From screenwriting to cinematography, students learn by doing*. Retrieved November 21, 2007, from <http://cms.bsu.edu/Features/Global/ImmersiveLearning/RunningtheShow.aspx>
- Ball State University (2007l). *Shared Values*. Retrieved March 7, 2009, from <http://cms.bsu.edu/Academics/CollegesandDepartments/CenterforInformationandCommunicationSciences/CurrentStudents/Shared%20Values.aspx>
- Ball State University. (2007m). *Why CICS?* Retrieved November 21, 2007, from <http://www.bsu.edu/cics/article/0,,34056--,00.html>
- Barrows, H. S. (1998). The essentials of problem-based learning. *Journal of Dental Education*, 62, 630-633.
- Baxter Magolda, M. B. (1999). *Creating contexts for learning and self-authorship*. Nashville: Vanderbilt University Press.

- Bey, F. J. (2004). *A study of multicultural education in the general education programs at two historically black colleges in Virginia*. Unpublished doctoral dissertation. George Mason University.
- Bogdan, R. C., & Biklen, S. K. (1982). *Qualitative research for education: An introduction to theory and methods*. Boston: Allyn and Bacon.
- Bolman, L., & Deal, T. (1997). *Reframing organizations*. San Francisco: Jossey-Bass.
- Bourassa, D. M., & Kruger, K. (2001). The national dialogue on academic and student affairs collaboration. *New Directions for Higher Education*, 116, 9-17.
- Bourner, J., Hughes, M., & Bourner, T. (2001). First-year undergraduate experiences of group project work. *Assessment and Evaluation in Higher Education*, 26(1), 19-39.
- Boykin A., Lilja A., & Tyler K. (2004). The influence of communal vs. individual learning context on the academic performance in social studies of grade 4–5 African-Americans. *Learning Environments Research*, 7(3), 227-244.
- Bradley, B. (1984). *Fundamentals of speech communication: The credibility of ideas*. Dubuque Iowa: Wm Brown Publishers.
- Brufee, K. (1993). *Collaborative learning: Higher education, interdependence and the authority of knowledge*. Baltimore: John Hopkins University Press.
- Burrell, K. I., & Kim, D. J. (1998). International students and academic assistance: Meeting the needs of another college population. In P. L. Dwinell & J. L. Higbee (Eds.), *Developmental education: meeting diverse student needs*, (pp. 81-89). Morrow, GA: National Association for Developmental Education.

- Capjon, J. (2004). *Trial-and-error-based innovation: Catalysing shared engagement in design conceptualisation*. Retrieved November 10, 2007, from http://www.aho.no/Utgivelser/Avhandlinger_elektronisk/capjon_avhandling.pdf
- Carlsmith, K. M., & Cooper, J. (2002). A persuasive example of collaborative learning. *Teaching of Psychology*, 29(2), 132-135.
- Catalano, J. T. (1996). *Contemporary professional nursing*. Philadelphia: F. A. Davis
- CCIM (2007). Center for Information and Communication Sciences: Program. Retrieved January 12, 2009, from <http://cms.bsu.edu/Academics/CollegesandDepartments/GradSchool/Academics/~media/B0BDF8E3A50D4CADBB3C9FA4072AAC73.ashx>
- ChangingMinds (2007). *Transactional leadership*. Retrieved November 2, 2007 from http://changingminds.org/disciplines/leadership/styles/transactional_leadership.htm
- Chrislip, D. D., & Larson, C. E. (1994). *Collaborative leadership: How citizens and civic leaders can make a difference*. San Francisco: Jossey-Bass.
- Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education* (5th, ed.), London: Routledge/Falmer.
- Corsaro, W. (1981). Entering the child's world. In J. Green & C. Wallat (Eds.), *Ethnography and language in educational settings* (pp. 117-147). Norwood, NJ: Ablex.
- Council of Graduate Schools in the United States (1990). *The doctor of philosophy degree: A policy statement*. Washington, D.C.: Council of Graduate Students.
- Craig, R. T. (1999). Communication theory as a field. *Communication Theory*, 9(2), 199-161.

- Crawford, C. B., Brungardt, C. L., & Maughan, M. R. C. (2002). *Understanding leadership theories & concepts*. Longmont, CO: Rocky Mountain Press.
- DeMarco, T. (1997). *The deadline: A novel about project management*. New York, NY: Dorset House Publishing.
- Denzin, N. K., & Lincoln, Y. S. (Eds.). (2000). *Handbook of qualitative research*, (2nd ed.). Thousand Oaks, CA: Sage
- Drake, J. D. (1989). *The Effective interviewer: A Guide for managers*. New York: Library of Congress Cataloging.
- Duch, B., Gron, S., & Allen, D. (2001). *The power of problem-based learning: Practical "how to" for teaching undergraduate courses in any discipline*. Sterling, VA: Stylus Publishing, LLC.
- Dwyer, B. (2006). Framing the effect of multiculturalism on diversity outcomes among students at historically black colleges and universities. *Educational Foundation*, 20 (1-2), 37-59.
- Educational Broadcasting Corporation, [EBC]. (2004). *Constructivism as a paradigm for teaching and learning*. Retrieved October 25, 2007, from <http://www.thirteen.org/edonline/concept2class/constructivism/index.html>
- Eisner, E. W. (1991). *The enlightened eye: Qualitative inquiry and the enhancement of educational practice*. New York, NY: Macmillan Publishing Company.
- Forsyth, D. R. (2006). *Group Dynamics* (4th ed). Belmont, CA: Thomson Wadsworth.
- Foster, K. M. (2005). Diet of disparagement: The racial experiences of black students in a predominantly white university. *International Journal of Qualitative Studies in Education*, 18, 489-505.

- Fugate, D. L., & Jefferson, R. W. (2001). Preparing for globalization: Do we need structural change for our academic programs? *Journal of Education for Business*, 76, 160–166.
- Garavan, T. N., & Murphy, C. (2001). The co-operative education process and organizational socialization: A qualitative study of student perceptions of its effectiveness. *Education + Training*, 43(6), 281-302.
- Gay, L. R., Mills, G. E., & Airasian, P. (2006). *Educational research: Competencies for analysis and applications*. (8th ed.). Upper Saddle River, NJ: Prentice Hall.
- Gettys, C. M. (1990). *Internship paved the way for first year positions*. (Report No. SP032760). Syracuse, NY: ERIC Clearinghouse on Information & Technology.
- Goodyear, P. (2001). Effective networked learning in higher education: notes and guidelines. *Networked Learning in Higher Education Project (JCALT)*. Retrieved February 10, 2009, from http://www.ioe.ac.uk/ccs/dowling/cmc2004/papers/Goodyear-guidelines_final.pdf
- Greene, H., & Greene, M. (2001). The importance of diversity - from our perspective. *Matrix: The Magazine for Leaders in Education*. Retrieved March 29, 2008 from http://findarticles.com/p/articles/mi_m0HJE/is_4_2/ai_79961326
- Gurin, P., Dey, E. L., Gurin, G., & Hurtado, S. (2004). The educational value of diversity. In P. Gurin, J. S. Lehman, E. Lewis (Eds.), *Defending Diversity: Affirmative action at the University of Michigan* (pp. 97-188). Ann Arbor, MI: University of Michigan Press.
- Harasim, L., Hiltz, S. R., Teles, L., & Turoff, M. (1995). *Learning networks: A field guide to teaching and learning online*. Cambridge, MA: MIT Press.

- Heckathorn, D. D. (1997). Respondent-driven sampling: A New approach to the study of hidden populations. *Social Problems, 44*, 174-199.
- Henwood, K. L., & Pidgeon, N. R. (1992). Qualitative research and psychological theorising. *British Journal of Psychology, 83*(1), 97-112.
- Hmelo-Silver, C. E., & Barrows, H. S. (2006). Goals and strategies of a problem-based learning facilitator. *Interdisciplinary Journal of Problem-based Learning, 1*, 21-39.
- Hoepfl, M. C. (1997). Choosing qualitative research: A primer for technology education researchers. *Journal of Technology Education, 9*(1), 47-63.
- Hodder, A. P. W. (1998, July). *A quantitative study of collaborative learning in tertiary geosciences courses*. Paper presented at the Transformation in higher education: Conference proceedings, Higher Education Research and Development Society of Australasia, Auckland, NZ.
- Howard, J. P. F. (1998). Academic service learning: A counternormative pedagogy. In R.A. Roads & J. P. F. Howard (Eds.), *Academic service learning: A pedagogy of action and reflection* (pp.21-29). San Francisco: Jossey-Bass Publishers.
- Hurtado, S. (2003). Preparing college students for a diverse democracy: *Final report to the U.S. Department of Education, OERI, Field Initiated Studies Program*. Ann Arbor, MI: Center for the Study of Higher and Postsecondary Education.
- ITERA (2007a). *Constitution and Bylaws*. Retrieved January 10, 2009, from <http://www.itera.org/bylaws.htm>
- ITERA (2007b). *Mission Statement*. Retrieved January 10, 2009, from <http://www.itera.org/mission.htm>

- Jackson, J. F. L., & Ebbers, L. H. (1999). Bridging the academic-social divide: Academic and student affairs collaboration. *College Student Journal*, 33, 380-383. Retrieved April 10, 2008, from [http://findarticles.com/p/search?tb=art&qt=""Larry+H.+Ebbers"](http://findarticles.com/p/search?tb=art&qt=)
- Janaire, E. (2001). Integrating the arts and sciences with IT at GMU. *ACUTA Journal of Telecommunications in Higher Education*, [winter] 12-15.
- Johnson, D. R., Soldner, M., Leonard, J. B., Alvarez, P., Inkelas, K. K., Roowan-Kenyon, H. et al. (2007). Examining sense of belonging among first-year undergraduates from different racial/ethnic groups. *Journal of College Student Development*, 525-542.
- Jones, D. (1996). *What is PBL?* Retrieved October 22, 2007, from <http://edweb.sdsu.edu/clrit/learningresource/PBL/WhatisPBL.html>
- Jones, J. (2005). Pedagogy and technical communication: The power of communal learning. *Orange Journal of Technical Communication and Information Design*. Retrieved February 22, 2009, from <http://orange.eserver.org/issues/3-2/jones.html>
- Keith (2006). Elmwood College: Strategic plan 2006 – 2009. Retrieved November 15, 2007, from <http://www.elmwood.ac.uk/docs/strategic-plan-2006.pdf>
- Kellogg, K. (1999). Collaboration: Student affairs and academic affairs working together to promote student learning. *ERIC Digest*. Retrieved February 22, 2009, from <http://www.ericdigests.org/2000-2/affairs.htm>
- Kerka, S. (1989). *Cooperative education: Characteristics and effectiveness*. (ERIC Document Reproduction Service No. 312455). Retrieved November 23, 2007, from <http://www.ericdigests.org/1992-4/esl.htm>

- Kolb, A. Y., & Kolb, D. A. (2005). *Learning styles and learning spaces: Enhancing experiential learning in higher education*. Weatherhead School of Management, Case Western Reserve University, Cleveland, OH. Retrieved November 15, 2007, from <http://www.learningfromexperience.com/images/uploads/Learning-styles-and-learning-spaces.pdf>
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. New Jersey: Prentice-Hall.
- Kolb, D. A., & Fry, R. (1975). Toward an applied theory of experiential learning. In C. Cooper (Ed.) *Theories of Group Process*, London: John Wiley.
- Kolbe, R. H., & Burnett, M. S. (1991). Content-analysis research: An examination of applications with directives for improving research reliability and objectivity. *Journal of Consumer Research*, 18, 243 – 250.
- Kraft, R. J., Ballantine, J., & Garvey, D. (1994). Study abroad or international travel: The case of semester at sea. *International Review*, 4, 23–61.
- Kremer, J., & McGuinness, C. (1998). Cutting the cord: Student-led discussion groups in higher education. *Education + Training*, 40(2), 44-49.
- Kuzel, A. J., & Like, R. C. (1991). Standards of trustworthiness for qualitative studies in primary care. In P. G. Norton, M. Stewart, F. Tudiver, M. J. Bass, and E. V. Dunn (Eds.), *Primary care research: Traditional and innovative approaches* (pp. 138-158). Newbury Park, California: Sage.
- Lacina, J. G. (2002). Preparing international students for a successful social experience in higher education. *New Directions for Higher Education*, 117, 21-27.

- Laurillard, D. M. (1993). *Rethinking university teaching: A framework for the effective use of educational technology*. London: Routledge.
- Laurillard, D. M. (2002). *Rethinking university teaching: A conversational framework for the effective use of learning technologies* (2nd ed). London: Routledge/Falmer.
- Lee, C., Ng, M., & Jacobs, G. M. (1997, June). *Cooperative learning in the thinking classroom: Research and theoretical perspectives*. Paper presented at the 7th International Conference on Thinking, Singapore.
- Lejk, M., & Wyvill, M. (2001). Peer assessment of contributions to a group project: A comparison of holistic and category-based approaches. *Assessment and Evaluation in Higher Education*, 26(1), 61-72.
- Leki, I. (2001). A narrow thinking system: Nonnative-English-speaking students in group projects across the curriculum. *TESOL Quarterly*, 35(1), 39-67.
- Likert, R. (1967). *The human organization: Its management and value*. New York: McGraw-Hill.
- Lincoln, Y. S., & Guba, E. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- Littlejohn, S. W. (1992). *Theories of human communication*. (2nd ed.). Belmont, CA: Wadsworth.
- Littlejohn, S. W., & Foss, K. (2005). *Theories of human communication*, (8th ed.). Canada: Thomas Learning.
- Love, P. G., & Love, A. G. (1996). Enhancing student learning: Intellectual, social, and emotional integration. *ERIC Digest*. Retrieved April 11, 2008, from <http://www.ericdigests.org/1997-2/social.htm>

- Louis, M. R., & Bartunek, J. M. (1992). Insider/outsider research teams: Collaboration across diverse perspectives. *Journal of Management Inquiry*, 1(2) 101-110.
- MacCallum, J. (1994, November-December). *University students' perceptions of collaborative learning and assessment*. Paper presented at the Annual Conference of the Australian Association for Research in Education (AARE), University of Liscastle, Australia.
- Marshall, C., & Rossman, G. B. (1995). *Designing qualitative research* (2nd ed.). Thousand Oaks, CA: Sage.
- Mathison, S. (1988). Why triangulate? *Educational Researcher*, 17(2), 13-17.
- McCurdy, K., & Tang, J. (2007). Director Stephan Jones gives perspective. *CICS Newsletter*, 18(1).
- McGraw, P., & Tidwell, A. (2001). Teaching group process skills to MBA students: A short workshop. *Education + Training*, 43(3), 162-170.
- McKeachie, W. J., & Hofer, B. K. (2001). *McKeachie's teaching tips: Strategies, research, and theory for college and university teachers*. Boston, MA: Houghton Mifflin.
- Melles, G. (2004). Understanding the role of language/culture in group work through qualitative interviewing. *The Qualitative Report*, 9, 216-240.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education: Revised and expanded from case study research in education*, (2nd ed.). San Francisco: Jossey-Bass.
- Merriam, S. B., & Simpson, E. (2000). *A guide to research for educators and trainers of adults*. Malabar: Krieger Publishing Company.

- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed). Thousand Oaks, CA: Sage.
- Mingers, J. (2001). Combining IS research methods: Towards a pluralist methodology, *Information Systems Research*, 12, 240-259.
- Mingle, J. R. (1997). Effective coordination of higher education: What is it? Why is it so difficult to achieve? In Goodchild, L. F., Lovell, C. D., Hines, E. R., & Gill, J. I. (Eds.), *Public policy and higher education*, (pp. 410-420). Boston, MA: Pearson.
- Moses, Y. (1994). Quality, excellence, and diversity. *New Directions for Institutional Research*, 81, 9-20.
- Mutch, A. (1998). Employability or learning? Groupwork in higher education. *Education + Training*, 40(2), 50-56.
- Nance, T., & Mackey-Kallis, S. (1997, November). *Can't you just talk to them? Small group work in a senior thesis course*. Paper presented at the 83rd Annual Meeting of the National Communication Association, Chicago, IL.
- Nickerson, R. (1987). Why teach thinking? In J. Baron & R. Sternberg, (eds.), *Teaching thinking skills: Theory and practice*, (pp. 27-37). New York: W. H. Freeman and Company.
- Nightingale, D. J., & Cromby, J. (Eds.). (1999). *Social constructionist psychology: A critical analysis of theory and practice*. Buckingham: Open University Press.
- Patton, M. Q. (1987). *How to use qualitative methods in evaluation*. Newbury Park, CA: Sage.
- Otten, M. (2003). Intercultural learning and diversity in higher education. *Journal of Studies in International Education*, 7(1), 12-26.

- Owen, J. M., & Rogers, P. J. (1999). *Program evaluation: Forms and approaches*. London: Sage.
- Pandit, K. (2007). The importance of international students on our campuses. *Yearbook of the Association of Pacific Coast Geographers*, 69, 156-159.
- Panitz, T., & Panitz, P. (2004). *Encouraging the use of collaborative learning in higher education*. Retrieved April 11, 2008, from <http://home.capecod.net/~tpanitz/tedsarticles/encouragingcl.htm>
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.
- Patton, M. Q. (2001). *Qualitative evaluation and research methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Peters, J. D. (1999). *Speaking into the air: A history of the idea of communication*. Chicago, IL: University of Chicago Press.
- Peters, T. (1988). *Thriving on chaos: Handbook for a management revolution*. New York: NY Harper Collins.
- Peterson, D. M., Briggs, P., Dreasher, L., Horner, D. D., & Nelson, T. (1999). Contributions of International Students and Programs to Campus Diversity. *New Directions for Student Services*, 86, 67-77.
- Posavac, E. J., & Carey, R. G. (1992). *Program evaluation: Methods and case studies* (4th ed.). Englewood Cliffs, NJ: Prentice Hall.
- Queeney, D. (1997). *Building partnerships with professional associations*. Washington, D.C.: University Continuing Education Association.

- Ransford, M. (2007). *CCIM Newsletter*. Retrieved November 12, 2007, from <http://www.bsu.edu/cim/article/0,1384,216583-14647-51252,00.html>
- Robbins, K., & Orr, R. (2004). Outcome Assessment of a Short-Term U.S. Thailand Student Exchange Program. *NACTA Journal*, 51-56.
- Robson, C. (2002). *Real world research: A resource for social scientists and practitioner-researchers*. Massachusetts: Blackwell Publishers.
- Salganik, M. J., & Heckathorn, D. D. (2004). Sampling and estimation in hidden populations using respondent-driven sampling. *Sociological Methodology*, 34, 193-239.
- Samford University. (2006). *Background of problem-based learning*. Retrieved October 25, 2007, from http://www.samford.edu/ctls/pbl_background.html
- Savin-Baden, M. (2000). *Problem-based learning in higher education: Untold stories*. Buckingham: Open University Press.
- Scepansky, T. (2004). *Service learning and faculty in the higher education institution*. Retrieved April 10, 2008, from <http://www.newfoundations.com/OrgTheory/Scepansky721.htm#TOP>
- Schafersman, S. D. (1991). *An introduction to critical thinking*. Retrieved October 29, 2007, from <http://www.freeinquiry.com/critical-thinking.html>
- Seasite (2009). What is a Partnership? Retrieved February 20, 2009, from <http://www.seasite.niu.edu/lao/undp/whatisPartnership.htm>
- Shannon, C. E., & Weaver W. (1964). *The Mathematical Theory of Communication*. Urbana: University of Illinois Press.

- Smith, D. G., Wolf, L. E., & Levitan, T. (1994). Introduction to studying diversity: Lessons in the field. *New Directions for Institutional Research*, 81, 1-8.
- Sowa, P. A. (2002). How valuable are student exchange programs? *New Directions for Higher Education*. 117, 63-70.
- Spilka, R. (1989). The 'audience continuum'. *The Technical Writing Teacher*, 16(2), 147-152.
- Stake, R. E. (1978). The case study method in social inquiry. *Educational Researcher*, 7(2), 5-8.
- Stake, R. E. (1995). *The art of case research*. Newbury Park, CA: Sage.
- Steele, R. L. (2007). *The CICS philosophy, from 1985 to date*. Unpublished manuscript, Ball State University, USA.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Strauss, A., & Corbin, J. (1994). *Grounded theory methodology: An overview*. In N. K. Denzin and Y. S. Lincoln (eds), *The Handbook of Qualitative Research*, (2nd ed., pp. 273-285). Thousand Oaks, CA: Sage.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks, CA: Sage.
- Swim, J. K., Hyers, L. L., Cohen, L. L., Fitzgerald, D. F., & Bylsma, W. B. (2003). African American college students' experiences with everyday anti-black racism: Characteristics of and responses to these incidents. *Journal of Black Psychology*, 29(1), 38-67.

- Swing, R. (2002). *The impact of engaging pedagogy on first-year seminars*. Policy Center on the First Year of College. Retrieved November 2, 2007, from <http://www.brevard.edu/fyc/fyi/essays/essay2.pdf>
- Tedlock, B. (2000). *Ethnography and ethnographic representation*. In N. K. Denzin and Y. S. Lincoln (eds), *The Handbook of Qualitative Research*, (2nd ed, pp. 455 – 486), Thousand Oaks, CA: Sage.
- Tellis, W. (1997a). Introduction to case study. *The Qualitative Report*, 3(2). Retrieved October 20, 2007, from <http://www.nova.edu/ssss/QR/QR3-2/tellis1.html>
- Tellis, W. (1997b). Application of a case study methodology. *The Qualitative Report*, 3(3). Retrieved October 20, 2007, from <http://www.nova.edu/ssss/QR/QR3-3/tellis2.html>
- Terhart, E. (2003). Constructivism and teaching: a new paradigm in general didactics? *Journal of Curriculum Studies*, 35(1), 25-44.
- Tierney, M. (1994). *On method and hope*. In Gitlin, A. (Ed.) *Power and method: Political activism and educational research*. London: Routledge.
- Trochim, W. (2000). *The research methods knowledge base* (2nd ed.). Cincinnati, OH: Atomic Dog Publishing.
- Update. (2007, April 9). *Ball State's CICS graduate program named best in nation*. Retrieved April 11, 2008, from <http://www.bsu.edu/update/media/pdf/printthis070409.pdf>
- Villalpando, O. (2002). The impact of diversity and multiculturalism on all students: Findings from a national study. *NASPA Journal: The Journal of Student Affairs Administration, Research, and Practice*, 40(1), 124-144.

- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Weiss, C., & Sosulski, K. (2002). *Types of samples: Samples and sampling - QMSS E-Lessons*. Retrieved April 15, 2008, from http://ccnmtl.columbia.edu/projects/qmss/samp_type.html
- Willig, C. (2001). *Introducing qualitative research in psychology: Adventures in theory and method*. Buckingham: Open University Press.
- Yin, R. K. (1994). *Case study research: Design and methods* (2nd ed.). Beverly Hills, CA: Sage.
- Yin, R. K. (2003). *Case study research: design and methods* (3rd ed.). Beverly Hills, CA: Sage.
- Young, R. A., & Collin, A. (2004). Special issue on constructivism, social constructionism and career. *Journal of Vocational Behavior*, 64, 373-388.

APPENDICES

Appendix A – Interview Questions

Interview Questions for Students

1. What was your educational background before starting the program at CICS?
2. Discuss your responsibilities at CICS; how far you are in the program. How long you have to finish.
3. What do you want to do after graduation?
4. What was your expectation of CICS when you decided to come for the program and discuss if your expectation is been met?
5. Describe your educational, technical and social learning experiences at CICS and how they have impacted your professional experience.
6. How do you as a student describe the impact of the educational philosophy used in the CICS masters program?
7. Describe your inside and outside of classroom relationship with your instructors at CICS and the impact of this relationship on your learning experience.
8. Describe your relationship with your classmates at CICS.
9. Describe your relationship with CICS alumni.
10. Would you tell me about an experience at CICS or related to the program that has left an indelible mark on you?
11. What do you think makes the program distinctive from other programs?
12. What is your career aspiration and do you think the program at CICS is currently meeting that aspiration?
13. What other information would you like to share with me?

Interview Questions for Alumni

1. What was your educational background before starting the program at CICS?
2. Discuss what your responsibilities at CICS were when you were a student.
3. What was your expectation of CICS when you started the program and discuss if your expectation was met?
4. Describe your educational, technical and social learning experiences at CICS and how they have impacted your professional experience.
5. Describe your inside and outside of classroom relationship with the instructors at CICS and the impact of this relationship on your professional experience.
6. Describe your relationship with your former classmates and other CICS alumni.
7. Describe your relationship with the Center presently and the current students.
8. Discuss an experience at CICS or related to the program that has left an indelible mark on you?
9. What do you think makes the program distinctive from other programs?
10. What was your career aspiration and do you think the program at CICS met your career aspiration?
11. Would you tell me how you define and describe success? What do you feel contributed to your success today?
12. In your view, do you think the program at CICS impacted your success?
13. What other information would you like to share with me?

Interview Questions for Faculty

1. What was your expectation of CICS when you decided to teach at CICS and discuss if your expectation has been met?
2. Describe the academic relationship you have with your other colleagues at the Center.
3. Describe your relationship with your students and the alumni of the Center.
4. Describe how the educational, technical and social learning experiences at CICS impact the students' professional experience.
5. How has it impacted your professional experience?
6. How do you as a faculty describe the impact of the educational philosophy used in the CICS masters program?
7. What do you think makes the program distinctive from other programs?
8. Do you think the program has met its objectives - the expectation of its goal?
9. What other information would you like to share with me?

Appendix B – IRB Approval



INSTITUTIONAL REVIEW BOARD

DATE: May 27, 2008
TO: Olufunmilola Olorunda
FROM: Ball State University IRB
RE: IRB protocol # 68295-3
TITLE: Immersive learning: A Case study of the Center for Information and Communication Sciences (CICS)
SUBMISSION TYPE: Revision
ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: 05/23/2008

The Institutional Review Board reviewed your protocol on May 23, 2008 and has determined the procedures you have proposed are appropriate for exemption under the federal regulations. As such, there will be no further review of your protocol, and you are cleared to proceed with the procedures outlined in your protocol. As an exempt study, there is no requirement for continuing review. Your protocol will remain on file with the IRB as a matter of record.

While your project does not require continuing review, it is the responsibility of the P.I. (and, if applicable, faculty supervisor) to inform the IRB if the procedures presented in this protocol are to be modified or if problems related to human research participants arise in connection with this project. Any procedural modifications must be evaluated by the IRB before being implemented, as some modifications may change the review status of this project. Please contact Amy Boos at (765) 285-5034 or akboos@bsu.edu if you are unsure whether your proposed modification requires review or have any questions. Proposed modifications should be addressed in writing and submitted electronically to the IRB (<http://www.bsu.edu/irb>) for review. Please reference the above IRB protocol number in any communication to the IRB regarding this project.

Reminder: Even though your study is exempt from the relevant federal regulations of the Common Rule (45 CFR 46, subpart A), you and your research team are not exempt from ethical research practices and should therefore employ all protections for your participants and their data which are appropriate to your project.

Appendix C – Participants Information

No.	Pseudonym	Designation	Gender	Other demographic data
1.	Carol	Alumni	Female	Employed, was a full time student
2.	Chris	Alumni	Male	Employed, was a part-time student
3.	Diya	Student	Female	Full time student
4.	George	Faculty	Male	Professor
5.	June	Student	Female	Full time student
6.	John	Student	Male	Part-time student
7.	Kelly	Alumni	Female	Employed, was a part-time student
8.	Lydia	Student	Female	Full time student
9.	Peter	Faculty	Male	Professor
10.	Paul	Faculty	Male	Professor
11.	Steve	Alumni	Male	Employed, was a full time student
12.	Tim	Faculty	Male	Professor

Appendix D -Recruitment of Participants

Verbal Recruitment

Hello [name of participant]

My name is Olufunmilola Olorunda, a doctoral candidate of Higher Education from the Department of Educational Studies. I am conducting a study on “*Immersive learning: A Case study of the Center for Information and Communication Sciences*” and would like you to participate in the research. The purpose of this research is to analyze the pedagogy strategy at the Center for Information and Communication Sciences, which involves the teaching, social learning culture, professional, academic achievements and collaborative interaction of students, faculty and colleagues in ICT industries.

I would like to have an interview session with you that will last between one hour and one hour thirty minutes. This is a voluntary study and you are not under any obligation to participate. If however, you wish to participate, please be aware that all information acquired during this interview process will be anonymous because I will use a pseudonym and not your real name to conceal your identity. You are free to withdraw from the study at anytime for any reason without penalty or prejudice from me the investigator.

My intention is to interview you as a CICS student /alumni/faculty [appropriate designation will be inserted] regarding your educational, technical, professional and social learning experiences at CICS. Please be assured that all data will be maintained as confidential. Data in form of paper copy and audio will be stored in a secured place in a locked cabinet in my home and will be destroyed by burning and cutting up the tape and burning afterwards respectively after one year. Electronic files will be password protected and deleted also after one year.

If you would like to know more about your rights as a research participant, the following person may be contacted:, Coordinator of Research Compliance, Office of Academic Research and Sponsored Programs, Ball State University, Muncie, IN 47306, (765) 285-5070.

If you however have any question concerning this research after the interview, please feel free to contact me: Olufunmilola Olorunda, [home address]. Home phone number – (xxx) xxx-xxxx or the research supervisor: Dr. Thalia Mulvihill, phone number: (xxx) xxx-xxxx, who also would be willing to answer any further questions you have about this study.

Thank you

Email - Introductory Letter

Subject : Participation in a research on Immersive learning at the Center for Information and Communication Sciences

Dear [participant name]

My name is Olufunmilola Olorunda, a doctoral candidate of Higher Education from the Department of Educational Studies. I am conducting a study on “*Immersive learning: A Case study of the Center for Information and Communication Sciences*” and would like you to participate in the research. The purpose of this research is to analyze the pedagogy strategy at the Center for Information and Communication Sciences which involves the teaching, social learning culture, professional, academic achievements and collaborative interaction of students, faculty and colleagues in ICT industries.

I would like to have an interview session with you that will last between one hour and one hour thirty minutes. This is a voluntary study and you are not under any obligation to participate. If however, you wish to participate, please be aware that all information acquired during this interview process will be anonymous because I will use a pseudonym and not your real name to conceal your identity. You are free to withdraw from the study at anytime for any reason without penalty or prejudice from me the investigator.

My intention is to interview you as a CICS student /alumni/faculty [appropriate designation will be inserted] regarding your educational, technical, professional and social learning experiences at CICS. Please be assured that all data will be maintained as confidential. Data in form of paper copy and audio will be stored in a secured place in a locked cabinet in my home and will be destroyed by burning and cutting up the tape and burning afterwards respectively after one year. Electronic files will be password protected and deleted also after one year.

There are no foreseeable risks or ill effects from participating in this study. If however you feel any form of anxiety when answering questions during the interview session, please feel free to decline or even opt out totally from the process. Any information obtained from this study will remain confidential. Your participation in this study is completely voluntary and you are free to withdraw from the study at anytime for any reason without penalty or prejudice from the investigator. Please feel free to ask any questions from me before or during the interview process.

If you would like to know more about your rights as a research participant, the following person may be contacted:, Coordinator of Research Compliance, Office of Academic Research and Sponsored Programs, Ball State University, Muncie, IN 47306, (765) 285-5070.

If you however have any question concerning this research after the interview, please feel free to contact me: Olufunmilola Olorunda, [home address]. Home phone number – (xxx) xxx-xxxx or the research supervisor: Dr. Thalia Mulvihill, phone number: (xxx) xxx-xxxx, who also would be willing to answer any further questions you have about this study.

Thank you
Olufunmilola Olorunda
Principal Investigator

Appendix E – Informed Consent

The objective of this research is to conduct a case study of the Center for Information and Communication Sciences. The study will analyze the teaching, social learning culture, academic achievements and collaborative interaction of students, faculty and colleagues in ICT industries. My intention is to interview you to examine the process of producing students who are suitable for technical, leadership and management responsibilities in a variety of organizations. The interview process will be between 60 -90 minutes. This process will enable you to be part of a research process that will contribute knowledge to academia.

All data will be maintained as confidential. Data will be stored in a secured place in a locked cabinet in the home of the researcher. The audio tape will be locked in a cabinet for one year and then destroyed by cutting up the tape and burning afterwards. The field notes and memo will also be kept in the locked cabinet for a period of year and it will be destroyed by burning. Pseudonyms will be used, so that your identity would be concealed.

There are no foreseeable risks or ill effects from participating in this study. If however you feel any form of anxiety when answering questions during the interview session, please feel free to decline or even opt out totally from the process. Any information obtained from this study will remain confidential. Your participation in this study is completely voluntary and you are free to withdraw from the study at anytime for any reason without penalty or prejudice from the investigator. Please feel free to ask any questions of the investigator before signing the Informed Consent form and beginning the study, and at any time during the study.

If you would like to know more about your rights as a research participant, the following person may be contacted:, Coordinator of Research Compliance, Office of Academic Research and Sponsored Programs, Ball State University, Muncie, IN 47306, (765) 285-5070.

If you however have any question concerning this research after the interview, please feel free to contact me: Olufunmilola Olorunda, [home address]. Home phone number – (xxx) xxx-xxxx or the research supervisor: Dr. Thalia Mulvihill, phone number: (xxx) xxx-xxxx, who also would be willing to answer any further questions you have about this study.

On signing this form you accept that you have read and understood the content and you are participating voluntarily. I will provide you a copy of this consent form for you to keep.

I, _____, agree to participate in this research project entitled, “**Immersive learning: A Case study of the Center for Information and Communication Sciences (CICS)**.”

I have had the study explained to me and my questions have been answered to my satisfaction. I have read the description of this project and give my consent to participate. I understand that I will receive a copy of this informed consent form to keep for future reference.

Participant’s Signature

Date

Yours Sincerely,
Olufunmilola Olorunda
Principal Investigator